Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

July 01, 2020

Joe Guarino
Town of Babylon
281 Phelps Lane
North Babylon, NY 11703

RE: Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Dear Joe Guarino:

Enclosed are the analytical results for sample(s) received by the laboratory on May 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Melville

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Aracri
jennifer.aracri@pacelabs.com
(631)694-3040
Project Manager

Enclosures

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

CERTIFICATIONS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Pace Analytical Services Long Island
575 Broad Hollow Rd, Melville, NY 11747
New York Certification #: 10478 Primary Accrediting Body
New Jersey Certification #: NY158
Pennsylvania Certification #: 68-00350
Connecticut Certification #: PH-0435
Maryland Certification #: 208
Rhode Island Certification #: LAO00340
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 6010C**
Description: 6010 MET ICP
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 6010C by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

QC Batch: 163143

B: Analyte was detected in the associated method blank.

- BLANK for HBN 163143 [MPRP/974 (Lab ID: 785938)
  - Zinc

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163143

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132491003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 785941)
  - Silver

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 785941)
  - Calcium

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 7470A**
Description: 7470 Mercury
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 7470A by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 8260C SIM/5030C**
Description: 8260C SIM Volatile Organics
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 8260C SIM/5030C by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 8260C/5030C**
Description: 8260C Volatile Organics
Client: Town of Babylon
Date: July 01, 2020

General Information:
7 samples were analyzed for EPA 8260C/5030C by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: 163393

IC: The initial calibration for this compound was outside of method control limits. The result is estimated.

- BLANK (Lab ID: 787417)
  - Acetone
- EQUIPMENT BLANK (Lab ID: 70132491005)
  - Acetone
- LCS (Lab ID: 787418)
  - Acetone
- MS (Lab ID: 787419)
  - Acetone
- MSD (Lab ID: 787420)
  - Acetone
- NNU PLCRS (Lab ID: 70132491001)
  - Acetone
- NNU SLCRS (Lab ID: 70132491002)
  - Acetone
- ONU SLCRS (Lab ID: 70132491003)
  - Acetone
- SA SLCRS (Lab ID: 70132491004)
  - Acetone
- STORAGE BLANK (Lab ID: 70132491007)
  - Acetone
- TRIP BLANK (Lab ID: 70132491006)
  - Acetone

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 163393

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 787418)
  - Vinyl chloride
- MS (Lab ID: 787419)
  - Vinyl chloride
- MSD (Lab ID: 787420)

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 8260C/5030C**
Description: 8260C Volatile Organics
Client: Town of Babylon
Date: July 01, 2020

QC Batch: 163393

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
- Vinyl chloride

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
- BLANK (Lab ID: 787417)
  - 2-Butanone (MEK)
- EQUIPMENT BLANK (Lab ID: 70132491005)
  - 2-Butanone (MEK)
- LCS (Lab ID: 787418)
  - 2-Butanone (MEK)
- MS (Lab ID: 787419)
  - 2-Butanone (MEK)
- MSD (Lab ID: 787420)
  - 2-Butanone (MEK)
- NNU PLCRS (Lab ID: 70132491001)
  - 2-Butanone (MEK)
- NNU SLCRS (Lab ID: 70132491002)
  - 2-Butanone (MEK)
- ONU SLCRS (Lab ID: 70132491003)
  - 2-Butanone (MEK)
- SA SLCRS (Lab ID: 70132491004)
  - 2-Butanone (MEK)
- STORAGE BLANK (Lab ID: 70132491007)
  - 2-Butanone (MEK)
- TRIP BLANK (Lab ID: 70132491006)
  - 2-Butanone (MEK)

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 163393

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
- LCS (Lab ID: 787418)
  - 1,1,1,2-Tetrachloroethane
  - cis-1,3-Dichloropropene

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 8260C/5030C**
Description: 8260C Volatile Organics
Client: Town of Babylon
Date: July 01, 2020

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163393

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132491003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 787419)
  - trans-1,4-Dichloro-2-butene
- MSD (Lab ID: 787420)
  - trans-1,4-Dichloro-2-butene

R1: RPD value was outside control limits.

- MSD (Lab ID: 787420)
  - Bromomethane
  - Iodomethane

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 8260**
Description: TIC MSV Water
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 8260 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **SM22 2120B**
Description: 2120B W Apparent Color
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for SM22 2120B by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **SM22 2320B**
Description: 2320B Alkalinity
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for SM22 2320B by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163705

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132491003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 789430)
  - Alkalinity, Total as CaCO3

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **SM22 2340C**
Description: 2340C Hardness, Total
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for SM22 2340C by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **SM22 2540C**
Description: 2540C Total Dissolved Solids
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for SM22 2540C by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **SM22 3500-Cr B**
Description: Chromium, Hexavalent
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for SM22 3500-Cr B by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 410.4**
Description: 410.4 COD
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 410.4 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163807

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132220004,70132491003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 790052)
  - Chemical Oxygen Demand

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **SM22 5210B**
Description: 5210B BOD, 5 day
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for SM22 5210B by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with SM22 5210B with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 9034**
Description: 9034 Sulfide, Titration
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 9034 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 9030B with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 300.0 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163757

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132541001,70133362003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 789852)
  - Chloride

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 351.2**
Description: 351.2 Total Kjeldahl Nitrogen
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 351.2 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 351.2 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163792

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132408002,70132491003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 790024)
  - Nitrogen, Kjeldahl, Total
- MS (Lab ID: 790026)
  - Nitrogen, Kjeldahl, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 unpres
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 353.2 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 162441

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132491001,70132498001

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 782459)
  - Nitrate-Nitrite (as N)

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 353.2 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 162438

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132478001,70132491001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 782445)
  - Nitrite as N

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 420.1**
Description: Phenolics, Total Recoverable
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 420.1 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 420.1 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **SM22 4500 NH3 H**
Description: 4500 Ammonia Water
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for SM22 4500 NH3 H by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 9014 Total Cyanide**
Description: 9014 Cyanide, Total
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 9014 Total Cyanide by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 9010C with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Method: **EPA 9060A**
Description: 9060A TOC as NPOC
Client: Town of Babylon
Date: July 01, 2020

General Information:
5 samples were analyzed for EPA 9060A by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: NNU PLCRS **Lab ID: 70132491001** Collected: 05/28/20 13:20 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Melville							
Aluminum	**<1000**	ug/L	1000	5	06/03/20 12:19	07/01/20 13:28	7429-90-5	
Antimony	**<300**	ug/L	300	5	06/03/20 12:19	07/01/20 13:28	7440-36-0	
Arsenic	**<50.0**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:28	7440-38-2	
Barium	**2240**	ug/L	1000	5	06/03/20 12:19	07/01/20 13:28	7440-39-3	
Beryllium	**0.85J**	ug/L	25.0	5	06/03/20 12:19	07/01/20 13:28	7440-41-7	
Boron	**4650**	ug/L	250	5	06/03/20 12:19	07/01/20 13:28	7440-42-8	
Cadmium	**<12.5**	ug/L	12.5	5	06/03/20 12:19	07/01/20 13:28	7440-43-9	
Calcium	**11300000**	ug/L	10000	50	06/03/20 12:19	07/01/20 15:17	7440-70-2	
Chromium	**237**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:28	7440-47-3	
Cobalt	**<250**	ug/L	250	5	06/03/20 12:19	07/01/20 13:28	7440-48-4	
Copper	**103J**	ug/L	125	5	06/03/20 12:19	07/01/20 13:28	7440-50-8	
Iron	**368**	ug/L	100	5	06/03/20 12:19	07/01/20 13:28	7439-89-6	
Lead	**<25.0**	ug/L	25.0	5	06/03/20 12:19	07/01/20 13:28	7439-92-1	
Magnesium	**2000**	ug/L	1000	5	06/03/20 12:19	07/01/20 13:28	7439-95-4	
Manganese	**335**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:28	7439-96-5	
Nickel	**111J**	ug/L	200	5	06/03/20 12:19	07/01/20 13:28	7440-02-0	
Potassium	**4040000**	ug/L	250000	50	06/03/20 12:19	07/01/20 15:17	7440-09-7	
Selenium	**52.0**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:28	7782-49-2	
Silver	**26.2J**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:28	7440-22-4	
Sodium	**10100000**	ug/L	250000	50	06/03/20 12:19	07/01/20 15:17	7440-23-5	
Thallium	**52.8**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:28	7440-28-0	
Vanadium	**<250**	ug/L	250	5	06/03/20 12:19	07/01/20 13:28	7440-62-2	
Zinc	**120**	ug/L	100	5	06/03/20 12:19	07/01/20 13:28	7440-66-6	B
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Melville							
Mercury	**<0.20**	ug/L	0.20	1	06/02/20 08:56	06/02/20 11:35	7439-97-6	
8260C SIM Volatile Organics	Analytical Method: EPA 8260C SIM/5030C Pace Analytical Services - Melville							
1,4-Dioxane (p-Dioxane)	**2.9**	ug/L	0.20	1		06/03/20 17:29	123-91-1	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	87	%	60-140	1		06/03/20 17:29	2199-69-1	
4-Bromofluorobenzene (S)	113	%	79-124	1		06/03/20 17:29	460-00-4	
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Acetone	**375**	ug/L	50.0	10		06/04/20 21:46	67-64-1	IC
Acrylonitrile	**<1.0**	ug/L	1.0	1		06/04/20 20:07	107-13-1	
Benzene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	71-43-2	
Bromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	74-97-5	
Bromodichloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		06/04/20 20:07	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	74-83-9	
2-Butanone (MEK)	**41.2**	ug/L	5.0	1		06/04/20 20:07	78-93-3	CL

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: NNU PLCRS **Lab ID: 70132491001** Collected: 05/28/20 13:20 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Carbon disulfide	**<1.0**	ug/L	1.0	1		06/04/20 20:07	75-15-0	
Carbon tetrachloride	**<1.0**	ug/L	1.0	1		06/04/20 20:07	56-23-5	
Chlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		06/04/20 20:07	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	74-87-3	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	96-12-8	
Dibromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	124-48-1	
1,2-Dibromoethane (EDB)	**<1.0**	ug/L	1.0	1		06/04/20 20:07	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	74-95-3	
1,2-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	95-50-1	
1,4-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	106-46-7	
trans-1,4-Dichloro-2-butene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	110-57-6	
1,1-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	75-34-3	
1,2-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	75-35-4	
cis-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	156-59-2	
trans-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	156-60-5	
1,2-Dichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	78-87-5	
cis-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	10061-01-5	L1
trans-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	10061-02-6	
Ethylbenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	100-41-4	
2-Hexanone	**<5.0**	ug/L	5.0	1		06/04/20 20:07	591-78-6	
Iodomethane	**4.3**	ug/L	4.0	1		06/04/20 20:07	74-88-4	
Methylene Chloride	**<1.0**	ug/L	1.0	1		06/04/20 20:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	**5.2**	ug/L	5.0	1		06/04/20 20:07	108-10-1	
Styrene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	100-42-5	
1,1,1,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	630-20-6	L1
1,1,2,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	79-34-5	
Tetrachloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	127-18-4	
Toluene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	108-88-3	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	71-55-6	
1,1,2-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	79-00-5	
Trichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:07	79-01-6	
Trichlorofluoromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	75-69-4	
1,2,3-Trichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 20:07	96-18-4	
Vinyl acetate	**<1.0**	ug/L	1.0	1		06/04/20 20:07	108-05-4	
Vinyl chloride	**<1.0**	ug/L	1.0	1		06/04/20 20:07	75-01-4	
Xylene (Total)	**<3.0**	ug/L	3.0	1		06/04/20 20:07	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	68-153	1		06/04/20 20:07	17060-07-0	
4-Bromofluorobenzene (S)	104	%	79-124	1		06/04/20 20:07	460-00-4	
Toluene-d8 (S)	93	%	69-124	1		06/04/20 20:07	2037-26-5	
Tentatively Identified Compounds								
Unknown	**6.2J**	ug/L		1		06/04/20 20:07		
Unknown	**7.1J**	ug/L		1		06/04/20 20:07		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: NNU PLCRS **Lab ID: 70132491001** Collected: 05/28/20 13:20 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Tentatively Identified Compounds								
Sulfur dioxide	**81.3J**	ug/L		1		06/04/20 20:07	7446-09-5	N
Methanethiol	**6.1J**	ug/L		1		06/04/20 20:07	74-93-1	N
Unknown	**8.0J**	ug/L		1		06/04/20 20:07		
Silanol, trimethyl-	**13.5J**	ug/L		1		06/04/20 20:07	1066-40-6	N
Disiloxane, hexamethyl-	**13.0J**	ug/L		1		06/04/20 20:07	107-46-0	N
2120B W Apparent Color	Analytical Method: SM22 2120B Pace Analytical Services - Melville							
Apparent Color	**25.0**	units	5.0	1		05/29/20 15:08		
pH	**6.5**	Std. Units	0.10	1		05/29/20 15:08		
2320B Alkalinity	Analytical Method: SM22 2320B Pace Analytical Services - Melville							
Alkalinity, Total as CaCO3	**172**	mg/L	1.0	1		06/09/20 10:37		
2340C Hardness, Total	Analytical Method: SM22 2340C Pace Analytical Services - Melville							
Tot Hardness asCaCO3 (SM 2340B	**34000**	mg/L	5.0	1		06/16/20 16:02		
2540C Total Dissolved Solids	Analytical Method: SM22 2540C Pace Analytical Services - Melville							
Total Dissolved Solids	**70300**	mg/L	20.0	1		06/03/20 10:33		
Chromium, Hexavalent	Analytical Method: SM22 3500-Cr B Pace Analytical Services - Melville							
Chromium, Hexavalent	**<0.020**	mg/L	0.020	1		05/29/20 07:53	18540-29-9	
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4 Pace Analytical Services - Melville							
Chemical Oxygen Demand	**3460**	mg/L	100	1	06/09/20 09:45	06/09/20 12:02		
5210B BOD, 5 day	Analytical Method: SM22 5210B Preparation Method: SM22 5210B Pace Analytical Services - Melville							
BOD, 5 day	**184**	mg/L	66.7	33.33	05/29/20 17:10	06/03/20 11:54		
9034 Sulfide, Titration	Analytical Method: EPA 9034 Preparation Method: EPA 9030B Pace Analytical Services - Melville							
Sulfide	**17.6**	mg/L	2.0	1	06/03/20 08:51	06/03/20 16:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Melville							
Bromide	**969**	mg/L	250	500		06/10/20 12:36	24959-67-9	
Chloride	**60800**	mg/L	4000	2000		06/10/20 12:53	16887-00-6	
Sulfate	**24.7J**	mg/L	100	20		06/08/20 22:41	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: NNU PLCRS **Lab ID: 70132491001** Collected: 05/28/20 13:20 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - Melville							
Nitrogen, Kjeldahl, Total	**107**	mg/L	10.0	20	06/09/20 08:25	06/10/20 15:17	7727-37-9	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrate as N	**<0.50**	mg/L	0.50	10		05/29/20 01:29	14797-55-8	
Nitrate-Nitrite (as N)	**<0.50**	mg/L	0.50	10		05/29/20 01:29	7727-37-9	M6
353.2 Nitrogen, NO2	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrite as N	**0.061**	mg/L	0.050	1		05/29/20 00:04	14797-65-0	M1
Phenolics, Total Recoverable	Analytical Method: EPA 420.1 Preparation Method: EPA 420.1 Pace Analytical Services - Melville							
Phenolics, Total Recoverable	**118**	ug/L	50.0	10	06/09/20 09:07	06/09/20 12:07		
4500 Ammonia Water	Analytical Method: SM22 4500 NH3 H Pace Analytical Services - Melville							
Nitrogen, Ammonia	**99.1**	mg/L	5.0	50		06/11/20 14:02	7664-41-7	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C Pace Analytical Services - Melville							
Cyanide	**3.4J**	ug/L	10.0	1	06/08/20 09:45	06/08/20 15:41	57-12-5	
9060A TOC as NPOC	Analytical Method: EPA 9060A Pace Analytical Services - Melville							
Total Organic Carbon	**190**	mg/L	2.0	2		06/08/20 21:42	7440-44-0	
Total Organic Carbon	**96.1**	mg/L	2.0	2		06/08/20 21:42	7440-44-0	
Total Organic Carbon	**95.7**	mg/L	2.0	2		06/08/20 21:42	7440-44-0	
Total Organic Carbon	**97.1**	mg/L	2.0	2		06/08/20 21:42	7440-44-0	
Mean Total Organic Carbon	**96.3**	mg/L	2.0	2		06/08/20 21:42	7440-44-0	

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: NNU SLCRS **Lab ID: 70132491002** Collected: 05/28/20 13:40 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Melville							
Aluminum	**<1000**	ug/L	1000	5	06/03/20 12:19	07/01/20 13:30	7429-90-5	
Antimony	**<300**	ug/L	300	5	06/03/20 12:19	07/01/20 13:30	7440-36-0	
Arsenic	**<50.0**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:30	7440-38-2	
Barium	**2300**	ug/L	1000	5	06/03/20 12:19	07/01/20 13:30	7440-39-3	
Beryllium	**0.89J**	ug/L	25.0	5	06/03/20 12:19	07/01/20 13:30	7440-41-7	
Boron	**4810**	ug/L	250	5	06/03/20 12:19	07/01/20 13:30	7440-42-8	
Cadmium	**<12.5**	ug/L	12.5	5	06/03/20 12:19	07/01/20 13:30	7440-43-9	
Calcium	**11900000**	ug/L	10000	50	06/03/20 12:19	07/01/20 15:18	7440-70-2	
Chromium	**232**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:30	7440-47-3	
Cobalt	**<250**	ug/L	250	5	06/03/20 12:19	07/01/20 13:30	7440-48-4	
Copper	**89.5J**	ug/L	125	5	06/03/20 12:19	07/01/20 13:30	7440-50-8	
Iron	**108**	ug/L	100	5	06/03/20 12:19	07/01/20 13:30	7439-89-6	
Lead	**<25.0**	ug/L	25.0	5	06/03/20 12:19	07/01/20 13:30	7439-92-1	
Magnesium	**2020**	ug/L	1000	5	06/03/20 12:19	07/01/20 13:30	7439-95-4	
Manganese	**322**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:30	7439-96-5	
Nickel	**112J**	ug/L	200	5	06/03/20 12:19	07/01/20 13:30	7440-02-0	
Potassium	**4300000**	ug/L	250000	50	06/03/20 12:19	07/01/20 15:18	7440-09-7	
Selenium	**46.8J**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:30	7782-49-2	
Silver	**28.7J**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:30	7440-22-4	
Sodium	**10600000**	ug/L	250000	50	06/03/20 12:19	07/01/20 15:18	7440-23-5	
Thallium	**54.0**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:30	7440-28-0	
Vanadium	**<250**	ug/L	250	5	06/03/20 12:19	07/01/20 13:30	7440-62-2	
Zinc	**40.5J**	ug/L	100	5	06/03/20 12:19	07/01/20 13:30	7440-66-6	B
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Melville							
Mercury	**<0.20**	ug/L	0.20	1	06/02/20 08:56	06/02/20 11:37	7439-97-6	
8260C SIM Volatile Organics	Analytical Method: EPA 8260C SIM/5030C Pace Analytical Services - Melville							
1,4-Dioxane (p-Dioxane)	**2.7**	ug/L	0.20	1		06/03/20 17:56	123-91-1	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	69	%	60-140	1		06/03/20 17:56	2199-69-1	
4-Bromofluorobenzene (S)	112	%	79-124	1		06/03/20 17:56	460-00-4	
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Acetone	**333**	ug/L	50.0	10		06/04/20 22:06	67-64-1	IC
Acrylonitrile	**<1.0**	ug/L	1.0	1		06/04/20 20:27	107-13-1	
Benzene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	71-43-2	
Bromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	74-97-5	
Bromodichloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		06/04/20 20:27	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	74-83-9	
2-Butanone (MEK)	**40.6**	ug/L	5.0	1		06/04/20 20:27	78-93-3	CL

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: NNU SLCRS **Lab ID: 70132491002** Collected: 05/28/20 13:40 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Carbon disulfide	**1.8**	ug/L	1.0	1		06/04/20 20:27	75-15-0	
Carbon tetrachloride	**<1.0**	ug/L	1.0	1		06/04/20 20:27	56-23-5	
Chlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		06/04/20 20:27	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	74-87-3	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	96-12-8	
Dibromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	124-48-1	
1,2-Dibromoethane (EDB)	**<1.0**	ug/L	1.0	1		06/04/20 20:27	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	74-95-3	
1,2-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	95-50-1	
1,4-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	106-46-7	
trans-1,4-Dichloro-2-butene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	110-57-6	
1,1-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	75-34-3	
1,2-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	75-35-4	
cis-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	156-59-2	
trans-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	156-60-5	
1,2-Dichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	78-87-5	
cis-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	10061-01-5	L1
trans-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	10061-02-6	
Ethylbenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	100-41-4	
2-Hexanone	**<5.0**	ug/L	5.0	1		06/04/20 20:27	591-78-6	
Iodomethane	**4.3**	ug/L	4.0	1		06/04/20 20:27	74-88-4	
Methylene Chloride	**<1.0**	ug/L	1.0	1		06/04/20 20:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	**5.6**	ug/L	5.0	1		06/04/20 20:27	108-10-1	
Styrene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	100-42-5	
1,1,1,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	630-20-6	L1
1,1,2,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	79-34-5	
Tetrachloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	127-18-4	
Toluene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	108-88-3	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	71-55-6	
1,1,2-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	79-00-5	
Trichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:27	79-01-6	
Trichlorofluoromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	75-69-4	
1,2,3-Trichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 20:27	96-18-4	
Vinyl acetate	**<1.0**	ug/L	1.0	1		06/04/20 20:27	108-05-4	
Vinyl chloride	**<1.0**	ug/L	1.0	1		06/04/20 20:27	75-01-4	
Xylene (Total)	**<3.0**	ug/L	3.0	1		06/04/20 20:27	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%	68-153	1		06/04/20 20:27	17060-07-0	
4-Bromofluorobenzene (S)	95	%	79-124	1		06/04/20 20:27	460-00-4	
Toluene-d8 (S)	86	%	69-124	1		06/04/20 20:27	2037-26-5	
Tentatively Identified Compounds								
Unknown	**9.2J**	ug/L		1		06/04/20 20:27		
Sulfur dioxide	**55.4J**	ug/L		1		06/04/20 20:27	7446-09-5	N

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: NNU SLCRS **Lab ID: 70132491002** Collected: 05/28/20 13:40 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Tentatively Identified Compounds								
Methanethiol	**7.7J**	ug/L		1		06/04/20 20:27	74-93-1	N
Unknown	**5.8J**	ug/L		1		06/04/20 20:27		
Unknown	**5.4J**	ug/L		1		06/04/20 20:27		
Silanol, trimethyl-	**8.4J**	ug/L		1		06/04/20 20:27	1066-40-6	N
Disiloxane, hexamethyl-	**23.2J**	ug/L		1		06/04/20 20:27	107-46-0	N
2120B W Apparent Color	Analytical Method: SM22 2120B Pace Analytical Services - Melville							
Apparent Color	**15.0**	units	5.0	1		05/29/20 15:08		
pH	**6.4**	Std. Units	0.10	1		05/29/20 15:08		
2320B Alkalinity	Analytical Method: SM22 2320B Pace Analytical Services - Melville							
Alkalinity, Total as CaCO3	**140**	mg/L	1.0	1		06/09/20 10:46		
2340C Hardness, Total	Analytical Method: SM22 2340C Pace Analytical Services - Melville							
Tot Hardness asCaCO3 (SM 2340B	**30800**	mg/L	5.0	1		06/16/20 16:02		
2540C Total Dissolved Solids	Analytical Method: SM22 2540C Pace Analytical Services - Melville							
Total Dissolved Solids	**70800**	mg/L	20.0	1		06/03/20 10:33		
Chromium, Hexavalent	Analytical Method: SM22 3500-Cr B Pace Analytical Services - Melville							
Chromium, Hexavalent	**<0.020**	mg/L	0.020	1		05/29/20 07:53	18540-29-9	
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4 Pace Analytical Services - Melville							
Chemical Oxygen Demand	**2640**	mg/L	100	1	06/09/20 09:45	06/09/20 12:02		
5210B BOD, 5 day	Analytical Method: SM22 5210B Preparation Method: SM22 5210B Pace Analytical Services - Melville							
BOD, 5 day	**180**	mg/L	66.7	33.33	05/29/20 17:10	06/03/20 11:56		
9034 Sulfide, Titration	Analytical Method: EPA 9034 Preparation Method: EPA 9030B Pace Analytical Services - Melville							
Sulfide	**12.8**	mg/L	2.0	1	06/03/20 08:51	06/03/20 16:32		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Melville							
Bromide	**990**	mg/L	250	500		06/10/20 13:10	24959-67-9	
Chloride	**61600**	mg/L	4000	2000		06/10/20 13:27	16887-00-6	
Sulfate	**8.9J**	mg/L	50.0	10		06/08/20 22:58	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: NNU SLCRS **Lab ID: 70132491002** Collected: 05/28/20 13:40 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - Melville							
Nitrogen, Kjeldahl, Total	**106**	mg/L	10.0	20	06/09/20 08:25	06/10/20 15:18	7727-37-9	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrate as N	**<0.50**	mg/L	0.50	10		05/29/20 01:35	14797-55-8	
Nitrate-Nitrite (as N)	**<0.50**	mg/L	0.50	10		05/29/20 01:35	7727-37-9	
353.2 Nitrogen, NO2	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrite as N	**0.067**	mg/L	0.050	1		05/29/20 00:10	14797-65-0	
Phenolics, Total Recoverable	Analytical Method: EPA 420.1 Preparation Method: EPA 420.1 Pace Analytical Services - Melville							
Phenolics, Total Recoverable	**104**	ug/L	50.0	10	06/09/20 09:07	06/09/20 12:08		
4500 Ammonia Water	Analytical Method: SM22 4500 NH3 H Pace Analytical Services - Melville							
Nitrogen, Ammonia	**98.3**	mg/L	5.0	50		06/11/20 14:03	7664-41-7	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C Pace Analytical Services - Melville							
Cyanide	**9.2J**	ug/L	10.0	1	06/08/20 09:45	06/08/20 15:42	57-12-5	
9060A TOC as NPOC	Analytical Method: EPA 9060A Pace Analytical Services - Melville							
Total Organic Carbon	**187**	mg/L	2.0	2		06/08/20 22:07	7440-44-0	
Total Organic Carbon	**95.7**	mg/L	2.0	2		06/08/20 22:07	7440-44-0	
Total Organic Carbon	**96.1**	mg/L	2.0	2		06/08/20 22:07	7440-44-0	
Total Organic Carbon	**96.9**	mg/L	2.0	2		06/08/20 22:07	7440-44-0	
Mean Total Organic Carbon	**96.2**	mg/L	2.0	2		06/08/20 22:07	7440-44-0	

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: ONU SLCRS **Lab ID: 70132491003** Collected: 05/28/20 13:50 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Melville							
Aluminum	**<200**	ug/L	200	1	06/03/20 12:19	06/30/20 16:41	7429-90-5	
Antimony	**<60.0**	ug/L	60.0	1	06/03/20 12:19	06/30/20 16:41	7440-36-0	
Arsenic	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:41	7440-38-2	
Barium	**619**	ug/L	200	1	06/03/20 12:19	06/30/20 16:41	7440-39-3	
Beryllium	**0.13J**	ug/L	5.0	1	06/03/20 12:19	06/30/20 16:41	7440-41-7	
Boron	**243**	ug/L	50.0	1	06/03/20 12:19	06/30/20 16:41	7440-42-8	
Cadmium	**<2.5**	ug/L	2.5	1	06/03/20 12:19	06/30/20 16:41	7440-43-9	
Calcium	**2390000**	ug/L	2000	10	06/03/20 12:19	07/01/20 15:19	7440-70-2	M6
Chromium	**48.9**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:41	7440-47-3	
Cobalt	**<50.0**	ug/L	50.0	1	06/03/20 12:19	06/30/20 16:41	7440-48-4	
Copper	**39.8**	ug/L	25.0	1	06/03/20 12:19	06/30/20 16:41	7440-50-8	
Iron	**6160**	ug/L	20.0	1	06/03/20 12:19	06/30/20 16:41	7439-89-6	
Lead	**<5.0**	ug/L	5.0	1	06/03/20 12:19	06/30/20 16:41	7439-92-1	
Magnesium	**12000**	ug/L	200	1	06/03/20 12:19	06/30/20 16:41	7439-95-4	
Manganese	**1300**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:41	7439-96-5	
Nickel	**47.8**	ug/L	40.0	1	06/03/20 12:19	06/30/20 16:41	7440-02-0	
Potassium	**937000**	ug/L	50000	10	06/03/20 12:19	07/01/20 15:19	7440-09-7	
Selenium	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:41	7782-49-2	
Silver	**4.7J**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:41	7440-22-4	M1
Sodium	**2230000**	ug/L	50000	10	06/03/20 12:19	07/01/20 15:19	7440-23-5	
Thallium	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:41	7440-28-0	
Vanadium	**<50.0**	ug/L	50.0	1	06/03/20 12:19	06/30/20 16:41	7440-62-2	
Zinc	**<20.0**	ug/L	20.0	1	06/03/20 12:19	06/30/20 16:41	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Melville							
Mercury	**<0.20**	ug/L	0.20	1	06/02/20 08:56	06/02/20 11:39	7439-97-6	
8260C SIM Volatile Organics	Analytical Method: EPA 8260C SIM/5030C Pace Analytical Services - Melville							
1,4-Dioxane (p-Dioxane)	**0.38**	ug/L	0.20	1		06/03/20 16:09	123-91-1	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	82	%	60-140	1		06/03/20 16:09	2199-69-1	
4-Bromofluorobenzene (S)	98	%	79-124	1		06/03/20 16:09	460-00-4	
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Acetone	**<5.0**	ug/L	5.0	1		06/04/20 20:47	67-64-1	IC
Acrylonitrile	**<1.0**	ug/L	1.0	1		06/04/20 20:47	107-13-1	
Benzene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	71-43-2	
Bromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	74-97-5	
Bromodichloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		06/04/20 20:47	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	74-83-9	R1
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		06/04/20 20:47	78-93-3	CL

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: ONU SLCRS **Lab ID: 70132491003** Collected: 05/28/20 13:50 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Carbon disulfide	**<1.0**	ug/L	1.0	1		06/04/20 20:47	75-15-0	
Carbon tetrachloride	**<1.0**	ug/L	1.0	1		06/04/20 20:47	56-23-5	
Chlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		06/04/20 20:47	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	74-87-3	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	96-12-8	
Dibromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	124-48-1	
1,2-Dibromoethane (EDB)	**<1.0**	ug/L	1.0	1		06/04/20 20:47	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	74-95-3	
1,2-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	95-50-1	
1,4-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	106-46-7	
trans-1,4-Dichloro-2-butene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	110-57-6	M1
1,1-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	75-34-3	
1,2-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	75-35-4	
cis-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	156-59-2	
trans-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	156-60-5	
1,2-Dichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	78-87-5	
cis-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	10061-01-5	L1
trans-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	10061-02-6	
Ethylbenzene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	100-41-4	
2-Hexanone	**<5.0**	ug/L	5.0	1		06/04/20 20:47	591-78-6	
Iodomethane	**<4.0**	ug/L	4.0	1		06/04/20 20:47	74-88-4	R1
Methylene Chloride	**<1.0**	ug/L	1.0	1		06/04/20 20:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		06/04/20 20:47	108-10-1	
Styrene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	100-42-5	
1,1,1,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	630-20-6	L1
1,1,2,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	79-34-5	
Tetrachloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	127-18-4	
Toluene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	108-88-3	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	71-55-6	
1,1,2-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	79-00-5	
Trichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 20:47	79-01-6	
Trichlorofluoromethane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	75-69-4	
1,2,3-Trichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 20:47	96-18-4	
Vinyl acetate	**<1.0**	ug/L	1.0	1		06/04/20 20:47	108-05-4	
Vinyl chloride	**<1.0**	ug/L	1.0	1		06/04/20 20:47	75-01-4	
Xylene (Total)	**<3.0**	ug/L	3.0	1		06/04/20 20:47	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	68-153	1		06/04/20 20:47	17060-07-0	
4-Bromofluorobenzene (S)	103	%	79-124	1		06/04/20 20:47	460-00-4	
Toluene-d8 (S)	92	%	69-124	1		06/04/20 20:47	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: ONU SLCRS **Lab ID: 70132491003** Collected: 05/28/20 13:50 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TIC MSV Water	Analytical Method: EPA 8260 Pace Analytical Services - Melville							
TIC Search	**No TIC's Found**			1		06/05/20 15:02		
2120B W Apparent Color	Analytical Method: SM22 2120B Pace Analytical Services - Melville							
Apparent Color	**50.0**	units	5.0	1		05/29/20 15:08		
pH	**6.9**	Std. Units	0.10	1		05/29/20 15:08		
2320B Alkalinity	Analytical Method: SM22 2320B Pace Analytical Services - Melville							
Alkalinity, Total as CaCO3	**196**	mg/L	1.0	1		06/09/20 11:02		M1
2340C Hardness, Total	Analytical Method: SM22 2340C Pace Analytical Services - Melville							
Tot Hardness asCaCO3 (SM 2340B	**10200**	mg/L	5.0	1		06/16/20 16:02		
2540C Total Dissolved Solids	Analytical Method: SM22 2540C Pace Analytical Services - Melville							
Total Dissolved Solids	**13700**	mg/L	20.0	1		06/03/20 10:33		
Chromium, Hexavalent	Analytical Method: SM22 3500-Cr B Pace Analytical Services - Melville							
Chromium, Hexavalent	**<0.020**	mg/L	0.020	1		05/29/20 07:53	18540-29-9	
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4 Pace Analytical Services - Melville							
Chemical Oxygen Demand	**494**	mg/L	20.0	1	06/09/20 09:45	06/09/20 12:03		M1
5210B BOD, 5 day	Analytical Method: SM22 5210B Preparation Method: SM22 5210B Pace Analytical Services - Melville							
BOD, 5 day	**1.0J**	mg/L	4.0	2	05/29/20 17:10	06/03/20 11:58		
9034 Sulfide, Titration	Analytical Method: EPA 9034 Preparation Method: EPA 9030B Pace Analytical Services - Melville							
Sulfide	**1.6J**	mg/L	2.0	1	06/04/20 09:48	06/04/20 16:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Melville							
Bromide	**189**	mg/L	50.0	100		06/10/20 13:43	24959-67-9	
Chloride	**11600**	mg/L	1000	500		06/10/20 14:00	16887-00-6	
Sulfate	**191**	mg/L	50.0	10		06/08/20 23:14	14808-79-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - Melville							
Nitrogen, Kjeldahl, Total	**11.2**	mg/L	0.50	1	06/09/20 08:25	06/10/20 15:54	7727-37-9	M1

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: ONU SLCRS **Lab ID: 70132491003** Collected: 05/28/20 13:50 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrate as N	**<0.50**	mg/L	0.50	10		05/29/20 01:36	14797-55-8	
Nitrate-Nitrite (as N)	**<0.50**	mg/L	0.50	10		05/29/20 01:36	7727-37-9	
353.2 Nitrogen, NO2	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrite as N	**<0.050**	mg/L	0.050	1		05/29/20 00:11	14797-65-0	
Phenolics, Total Recoverable	Analytical Method: EPA 420.1 Preparation Method: EPA 420.1 Pace Analytical Services - Melville							
Phenolics, Total Recoverable	**<5.0**	ug/L	5.0	1	06/09/20 09:07	06/09/20 11:44		
4500 Ammonia Water	Analytical Method: SM22 4500 NH3 H Pace Analytical Services - Melville							
Nitrogen, Ammonia	**11.4**	mg/L	1.0	10		06/11/20 13:56	7664-41-7	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C Pace Analytical Services - Melville							
Cyanide	**<10.0**	ug/L	10.0	1	06/08/20 09:45	06/08/20 15:42	57-12-5	
9060A TOC as NPOC	Analytical Method: EPA 9060A Pace Analytical Services - Melville							
Total Organic Carbon	**8.4**	mg/L	1.0	1		06/08/20 22:19	7440-44-0	
Total Organic Carbon	**8.2**	mg/L	1.0	1		06/08/20 22:19	7440-44-0	
Total Organic Carbon	**8.2**	mg/L	1.0	1		06/08/20 22:19	7440-44-0	
Total Organic Carbon	**8.0**	mg/L	1.0	1		06/08/20 22:19	7440-44-0	
Mean Total Organic Carbon	**8.2**	mg/L	1.0	1		06/08/20 22:19	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: SA SLCRS **Lab ID: 70132491004** Collected: 05/28/20 11:20 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Melville							
Aluminum	**531**	ug/L	200	1	06/03/20 12:19	06/30/20 16:58	7429-90-5	
Antimony	**<60.0**	ug/L	60.0	1	06/03/20 12:19	06/30/20 16:58	7440-36-0	
Arsenic	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:58	7440-38-2	
Barium	**264**	ug/L	200	1	06/03/20 12:19	06/30/20 16:58	7440-39-3	
Beryllium	**0.11J**	ug/L	5.0	1	06/03/20 12:19	06/30/20 16:58	7440-41-7	
Boron	**375**	ug/L	50.0	1	06/03/20 12:19	06/30/20 16:58	7440-42-8	
Cadmium	**<2.5**	ug/L	2.5	1	06/03/20 12:19	06/30/20 16:58	7440-43-9	
Calcium	**1550000**	ug/L	2000	10	06/03/20 12:19	07/01/20 15:27	7440-70-2	
Chromium	**34.2**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:58	7440-47-3	
Cobalt	**<50.0**	ug/L	50.0	1	06/03/20 12:19	06/30/20 16:58	7440-48-4	
Copper	**37.4**	ug/L	25.0	1	06/03/20 12:19	06/30/20 16:58	7440-50-8	
Iron	**21500**	ug/L	20.0	1	06/03/20 12:19	06/30/20 16:58	7439-89-6	
Lead	**11.0**	ug/L	5.0	1	06/03/20 12:19	06/30/20 16:58	7439-92-1	
Magnesium	**90600**	ug/L	200	1	06/03/20 12:19	06/30/20 16:58	7439-95-4	
Manganese	**6670**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:58	7439-96-5	
Nickel	**35.2J**	ug/L	40.0	1	06/03/20 12:19	06/30/20 16:58	7440-02-0	
Potassium	**418000**	ug/L	50000	10	06/03/20 12:19	07/01/20 15:27	7440-09-7	
Selenium	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:58	7782-49-2	
Silver	**2.8J**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:58	7440-22-4	
Sodium	**1200000**	ug/L	50000	10	06/03/20 12:19	07/01/20 15:27	7440-23-5	
Thallium	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 16:58	7440-28-0	
Vanadium	**<50.0**	ug/L	50.0	1	06/03/20 12:19	06/30/20 16:58	7440-62-2	
Zinc	**76.2**	ug/L	20.0	1	06/03/20 12:19	06/30/20 16:58	7440-66-6	B
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Melville							
Mercury	**<0.20**	ug/L	0.20	1	06/02/20 08:56	06/02/20 11:48	7439-97-6	
8260C SIM Volatile Organics	Analytical Method: EPA 8260C SIM/5030C Pace Analytical Services - Melville							
1,4-Dioxane (p-Dioxane)	**0.90**	ug/L	0.20	1		06/03/20 18:20	123-91-1	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	85	%	60-140	1		06/03/20 18:20	2199-69-1	
4-Bromofluorobenzene (S)	107	%	79-124	1		06/03/20 18:20	460-00-4	
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Acetone	**<5.0**	ug/L	5.0	1		06/04/20 21:06	67-64-1	IC
Acrylonitrile	**<1.0**	ug/L	1.0	1		06/04/20 21:06	107-13-1	
Benzene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	71-43-2	
Bromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	74-97-5	
Bromodichloromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		06/04/20 21:06	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		06/04/20 21:06	78-93-3	CL

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: SA SLCRS **Lab ID: 70132491004** Collected: 05/28/20 11:20 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Carbon disulfide	**<1.0**	ug/L	1.0	1		06/04/20 21:06	75-15-0	
Carbon tetrachloride	**<1.0**	ug/L	1.0	1		06/04/20 21:06	56-23-5	
Chlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		06/04/20 21:06	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	74-87-3	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	96-12-8	
Dibromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	124-48-1	
1,2-Dibromoethane (EDB)	**<1.0**	ug/L	1.0	1		06/04/20 21:06	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	74-95-3	
1,2-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	95-50-1	
1,4-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	106-46-7	
trans-1,4-Dichloro-2-butene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	110-57-6	
1,1-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	75-34-3	
1,2-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	75-35-4	
cis-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	156-59-2	
trans-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	156-60-5	
1,2-Dichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	78-87-5	
cis-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	10061-01-5	L1
trans-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	10061-02-6	
Ethylbenzene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	100-41-4	
2-Hexanone	**<5.0**	ug/L	5.0	1		06/04/20 21:06	591-78-6	
Iodomethane	**<4.0**	ug/L	4.0	1		06/04/20 21:06	74-88-4	
Methylene Chloride	**<1.0**	ug/L	1.0	1		06/04/20 21:06	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		06/04/20 21:06	108-10-1	
Styrene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	100-42-5	
1,1,1,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	630-20-6	L1
1,1,2,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	79-34-5	
Tetrachloroethene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	127-18-4	
Toluene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	108-88-3	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	71-55-6	
1,1,2-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	79-00-5	
Trichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 21:06	79-01-6	
Trichlorofluoromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	75-69-4	
1,2,3-Trichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 21:06	96-18-4	
Vinyl acetate	**<1.0**	ug/L	1.0	1		06/04/20 21:06	108-05-4	
Vinyl chloride	**<1.0**	ug/L	1.0	1		06/04/20 21:06	75-01-4	
Xylene (Total)	**<3.0**	ug/L	3.0	1		06/04/20 21:06	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%	68-153	1		06/04/20 21:06	17060-07-0	
4-Bromofluorobenzene (S)	98	%	79-124	1		06/04/20 21:06	460-00-4	
Toluene-d8 (S)	97	%	69-124	1		06/04/20 21:06	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: SA SLCRS **Lab ID: 70132491004** Collected: 05/28/20 11:20 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TIC MSV Water	Analytical Method: EPA 8260 Pace Analytical Services - Melville							
TIC Search	**No TIC's Found**			1		06/05/20 15:03		
2120B W Apparent Color	Analytical Method: SM22 2120B Pace Analytical Services - Melville							
Apparent Color	**40.0**	units	5.0	1		05/29/20 15:08		
pH	**7.5**	Std. Units	0.10	1		05/29/20 15:08		
2320B Alkalinity	Analytical Method: SM22 2320B Pace Analytical Services - Melville							
Alkalinity, Total as CaCO3	**199**	mg/L	1.0	1		06/09/20 12:00		
2340C Hardness, Total	Analytical Method: SM22 2340C Pace Analytical Services - Melville							
Tot Hardness asCaCO3 (SM 2340B	**10000**	mg/L	5.0	1		06/16/20 16:02		
2540C Total Dissolved Solids	Analytical Method: SM22 2540C Pace Analytical Services - Melville							
Total Dissolved Solids	**8290**	mg/L	20.0	1		06/03/20 11:12		
Chromium, Hexavalent	Analytical Method: SM22 3500-Cr B Pace Analytical Services - Melville							
Chromium, Hexavalent	**<0.020**	mg/L	0.020	1		05/29/20 07:52	18540-29-9	
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4 Pace Analytical Services - Melville							
Chemical Oxygen Demand	**287**	mg/L	20.0	1	06/09/20 09:45	06/09/20 12:03		
5210B BOD, 5 day	Analytical Method: SM22 5210B Preparation Method: SM22 5210B Pace Analytical Services - Melville							
BOD, 5 day	**7.8**	mg/L	4.0	2	05/29/20 17:10	06/03/20 12:00		
9034 Sulfide, Titration	Analytical Method: EPA 9034 Preparation Method: EPA 9030B Pace Analytical Services - Melville							
Sulfide	**<2.0**	mg/L	2.0	1	06/04/20 09:48	06/04/20 16:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Melville							
Bromide	**71.1**	mg/L	10.0	20		06/08/20 23:31	24959-67-9	
Chloride	**6860**	mg/L	400	200		06/10/20 14:17	16887-00-6	
Sulfate	**322**	mg/L	100	20		06/08/20 23:31	14808-79-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - Melville							
Nitrogen, Kjeldahl, Total	**1.2**	mg/L	0.50	1	06/09/20 08:25	06/10/20 15:57	7727-37-9	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: SA SLCRS **Lab ID: 70132491004** Collected: 05/28/20 11:20 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrate as N	**2.9**	mg/L	0.50	10		05/29/20 01:37	14797-55-8	
Nitrate-Nitrite (as N)	**3.4**	mg/L	0.50	10		05/29/20 01:37	7727-37-9	
353.2 Nitrogen, NO2	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrite as N	**0.46**	mg/L	0.050	1		05/29/20 00:13	14797-65-0	
Phenolics, Total Recoverable	Analytical Method: EPA 420.1 Preparation Method: EPA 420.1 Pace Analytical Services - Melville							
Phenolics, Total Recoverable	**<5.0**	ug/L	5.0	1	06/09/20 09:07	06/09/20 11:48		
4500 Ammonia Water	Analytical Method: SM22 4500 NH3 H Pace Analytical Services - Melville							
Nitrogen, Ammonia	**0.23**	mg/L	0.10	1		06/11/20 13:13	7664-41-7	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C Pace Analytical Services - Melville							
Cyanide	**<10.0**	ug/L	10.0	1	06/08/20 09:45	06/08/20 15:42	57-12-5	
9060A TOC as NPOC	Analytical Method: EPA 9060A Pace Analytical Services - Melville							
Total Organic Carbon	**6.6**	mg/L	1.0	1		06/09/20 08:53	7440-44-0	
Total Organic Carbon	**6.5**	mg/L	1.0	1		06/09/20 08:53	7440-44-0	
Total Organic Carbon	**6.5**	mg/L	1.0	1		06/09/20 08:53	7440-44-0	
Total Organic Carbon	**6.7**	mg/L	1.0	1		06/09/20 08:53	7440-44-0	
Mean Total Organic Carbon	**6.6**	mg/L	1.0	1		06/09/20 08:53	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: EQUIPMENT BLANK **Lab ID: 70132491005** Collected: 05/28/20 11:30 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Melville							
Aluminum	**<200**	ug/L	200	1	06/03/20 12:19	06/30/20 17:00	7429-90-5	
Antimony	**<60.0**	ug/L	60.0	1	06/03/20 12:19	06/30/20 17:00	7440-36-0	
Arsenic	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 17:00	7440-38-2	
Barium	**<200**	ug/L	200	1	06/03/20 12:19	06/30/20 17:00	7440-39-3	
Beryllium	**<5.0**	ug/L	5.0	1	06/03/20 12:19	06/30/20 17:00	7440-41-7	
Boron	**<50.0**	ug/L	50.0	1	06/03/20 12:19	06/30/20 17:00	7440-42-8	
Cadmium	**<2.5**	ug/L	2.5	1	06/03/20 12:19	06/30/20 17:00	7440-43-9	
Calcium	**95.6J**	ug/L	200	1	06/03/20 12:19	06/30/20 17:00	7440-70-2	
Chromium	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 17:00	7440-47-3	
Cobalt	**<50.0**	ug/L	50.0	1	06/03/20 12:19	06/30/20 17:00	7440-48-4	
Copper	**<25.0**	ug/L	25.0	1	06/03/20 12:19	06/30/20 17:00	7440-50-8	
Iron	**<20.0**	ug/L	20.0	1	06/03/20 12:19	06/30/20 17:00	7439-89-6	
Lead	**<5.0**	ug/L	5.0	1	06/03/20 12:19	06/30/20 17:00	7439-92-1	
Magnesium	**<200**	ug/L	200	1	06/03/20 12:19	06/30/20 17:00	7439-95-4	
Manganese	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 17:00	7439-96-5	
Nickel	**<40.0**	ug/L	40.0	1	06/03/20 12:19	06/30/20 17:00	7440-02-0	
Potassium	**2510J**	ug/L	5000	1	06/03/20 12:19	06/30/20 17:00	7440-09-7	
Selenium	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 17:00	7782-49-2	
Silver	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 17:00	7440-22-4	
Sodium	**2000J**	ug/L	5000	1	06/03/20 12:19	06/30/20 17:00	7440-23-5	
Thallium	**<10.0**	ug/L	10.0	1	06/03/20 12:19	06/30/20 17:00	7440-28-0	
Vanadium	**<50.0**	ug/L	50.0	1	06/03/20 12:19	06/30/20 17:00	7440-62-2	
Zinc	**<20.0**	ug/L	20.0	1	06/03/20 12:19	06/30/20 17:00	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Melville							
Mercury	**<0.20**	ug/L	0.20	1	06/02/20 08:56	06/02/20 11:49	7439-97-6	
8260C SIM Volatile Organics	Analytical Method: EPA 8260C SIM/5030C Pace Analytical Services - Melville							
1,4-Dioxane (p-Dioxane)	**<0.20**	ug/L	0.20	1		06/03/20 18:43	123-91-1	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	65	%	60-140	1		06/03/20 18:43	2199-69-1	
4-Bromofluorobenzene (S)	104	%	79-124	1		06/03/20 18:43	460-00-4	
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Acetone	**<5.0**	ug/L	5.0	1		06/04/20 19:07	67-64-1	IC
Acrylonitrile	**<1.0**	ug/L	1.0	1		06/04/20 19:07	107-13-1	
Benzene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	71-43-2	
Bromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	74-97-5	
Bromodichloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		06/04/20 19:07	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		06/04/20 19:07	78-93-3	CL

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: EQUIPMENT BLANK **Lab ID: 70132491005** Collected: 05/28/20 11:30 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Carbon disulfide	**<1.0**	ug/L	1.0	1		06/04/20 19:07	75-15-0	
Carbon tetrachloride	**<1.0**	ug/L	1.0	1		06/04/20 19:07	56-23-5	
Chlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		06/04/20 19:07	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	74-87-3	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	96-12-8	
Dibromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	124-48-1	
1,2-Dibromoethane (EDB)	**<1.0**	ug/L	1.0	1		06/04/20 19:07	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	74-95-3	
1,2-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	95-50-1	
1,4-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	106-46-7	
trans-1,4-Dichloro-2-butene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	110-57-6	
1,1-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	75-34-3	
1,2-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	75-35-4	
cis-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	156-59-2	
trans-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	156-60-5	
1,2-Dichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	78-87-5	
cis-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	10061-01-5	L1
trans-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	10061-02-6	
Ethylbenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	100-41-4	
2-Hexanone	**<5.0**	ug/L	5.0	1		06/04/20 19:07	591-78-6	
Iodomethane	**<4.0**	ug/L	4.0	1		06/04/20 19:07	74-88-4	
Methylene Chloride	**<1.0**	ug/L	1.0	1		06/04/20 19:07	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		06/04/20 19:07	108-10-1	
Styrene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	100-42-5	
1,1,1,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	630-20-6	L1
1,1,2,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	79-34-5	
Tetrachloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	127-18-4	
Toluene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	108-88-3	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	71-55-6	
1,1,2-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	79-00-5	
Trichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:07	79-01-6	
Trichlorofluoromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	75-69-4	
1,2,3-Trichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 19:07	96-18-4	
Vinyl acetate	**<1.0**	ug/L	1.0	1		06/04/20 19:07	108-05-4	
Vinyl chloride	**<1.0**	ug/L	1.0	1		06/04/20 19:07	75-01-4	
Xylene (Total)	**<3.0**	ug/L	3.0	1		06/04/20 19:07	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	68-153	1		06/04/20 19:07	17060-07-0	
4-Bromofluorobenzene (S)	98	%	79-124	1		06/04/20 19:07	460-00-4	
Toluene-d8 (S)	95	%	69-124	1		06/04/20 19:07	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: EQUIPMENT BLANK **Lab ID: 70132491005** Collected: 05/28/20 11:30 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
TIC MSV Water	Analytical Method: EPA 8260 Pace Analytical Services - Melville							
TIC Search	**No TIC's Found**			1		06/05/20 14:57		
2120B W Apparent Color	Analytical Method: SM22 2120B Pace Analytical Services - Melville							
Apparent Color	**5.0**	units	5.0	1		05/29/20 15:08		
pH	**6.0**	Std. Units	0.10	1		05/29/20 15:08		
2320B Alkalinity	Analytical Method: SM22 2320B Pace Analytical Services - Melville							
Alkalinity, Total as CaCO3	**<1.0**	mg/L	1.0	1		06/09/20 12:05		
2340C Hardness, Total	Analytical Method: SM22 2340C Pace Analytical Services - Melville							
Tot Hardness asCaCO3 (SM 2340B	**2.0J**	mg/L	5.0	1		06/16/20 16:02		
2540C Total Dissolved Solids	Analytical Method: SM22 2540C Pace Analytical Services - Melville							
Total Dissolved Solids	**105**	mg/L	10.0	1		06/03/20 11:12		
Chromium, Hexavalent	Analytical Method: SM22 3500-Cr B Pace Analytical Services - Melville							
Chromium, Hexavalent	**<0.020**	mg/L	0.020	1		05/29/20 07:52	18540-29-9	
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4 Pace Analytical Services - Melville							
Chemical Oxygen Demand	**<10.0**	mg/L	10.0	1	06/09/20 09:45	06/09/20 12:04		
5210B BOD, 5 day	Analytical Method: SM22 5210B Preparation Method: SM22 5210B Pace Analytical Services - Melville							
BOD, 5 day	**1.0J**	mg/L	2.0	1	05/29/20 17:10	06/03/20 12:03		
9034 Sulfide, Titration	Analytical Method: EPA 9034 Preparation Method: EPA 9030B Pace Analytical Services - Melville							
Sulfide	**1.6J**	mg/L	2.0	1	06/04/20 09:48	06/04/20 16:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Melville							
Bromide	**<0.50**	mg/L	0.50	1		06/08/20 23:48	24959-67-9	
Chloride	**<2.0**	mg/L	2.0	1		06/08/20 23:48	16887-00-6	
Sulfate	**<5.0**	mg/L	5.0	1		06/08/20 23:48	14808-79-8	
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - Melville							
Nitrogen, Kjeldahl, Total	**0.47**	mg/L	0.10	1	06/09/20 08:25	06/10/20 15:24	7727-37-9	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: EQUIPMENT BLANK **Lab ID: 70132491005** Collected: 05/28/20 11:30 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrate as N	**<0.50**	mg/L	0.50	10		05/29/20 01:38	14797-55-8	
Nitrate-Nitrite (as N)	**<0.50**	mg/L	0.50	10		05/29/20 01:38	7727-37-9	
353.2 Nitrogen, NO2	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrite as N	**<0.050**	mg/L	0.050	1		05/29/20 00:14	14797-65-0	
Phenolics, Total Recoverable	Analytical Method: EPA 420.1 Preparation Method: EPA 420.1 Pace Analytical Services - Melville							
Phenolics, Total Recoverable	**<5.0**	ug/L	5.0	1	06/09/20 09:07	06/09/20 11:49		
4500 Ammonia Water	Analytical Method: SM22 4500 NH3 H Pace Analytical Services - Melville							
Nitrogen, Ammonia	**<0.10**	mg/L	0.10	1		06/11/20 13:17	7664-41-7	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C Pace Analytical Services - Melville							
Cyanide	**<10.0**	ug/L	10.0	1	06/08/20 09:45	06/08/20 15:42	57-12-5	
9060A TOC as NPOC	Analytical Method: EPA 9060A Pace Analytical Services - Melville							
Total Organic Carbon	**<1.0**	mg/L	1.0	1		06/09/20 09:04	7440-44-0	
Total Organic Carbon	**<1.0**	mg/L	1.0	1		06/09/20 09:04	7440-44-0	
Total Organic Carbon	**<1.0**	mg/L	1.0	1		06/09/20 09:04	7440-44-0	
Total Organic Carbon	**<1.0**	mg/L	1.0	1		06/09/20 09:04	7440-44-0	
Mean Total Organic Carbon	**<1.0**	mg/L	1.0	1		06/09/20 09:04	7440-44-0	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: TRIP BLANK **Lab ID: 70132491006** Collected: 05/28/20 00:00 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Acetone	**<5.0**	ug/L	5.0	1		06/04/20 19:27	67-64-1	IC
Acrylonitrile	**<1.0**	ug/L	1.0	1		06/04/20 19:27	107-13-1	
Benzene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	71-43-2	
Bromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	74-97-5	
Bromodichloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		06/04/20 19:27	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		06/04/20 19:27	78-93-3	CL
Carbon disulfide	**<1.0**	ug/L	1.0	1		06/04/20 19:27	75-15-0	
Carbon tetrachloride	**<1.0**	ug/L	1.0	1		06/04/20 19:27	56-23-5	
Chlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		06/04/20 19:27	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	74-87-3	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	96-12-8	
Dibromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	124-48-1	
1,2-Dibromoethane (EDB)	**<1.0**	ug/L	1.0	1		06/04/20 19:27	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	74-95-3	
1,2-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	95-50-1	
1,4-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	106-46-7	
trans-1,4-Dichloro-2-butene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	110-57-6	
1,1-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	75-34-3	
1,2-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	75-35-4	
cis-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	156-59-2	
trans-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	156-60-5	
1,2-Dichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	78-87-5	
cis-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	10061-01-5	L1
trans-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	10061-02-6	
Ethylbenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	100-41-4	
2-Hexanone	**<5.0**	ug/L	5.0	1		06/04/20 19:27	591-78-6	
Iodomethane	**<4.0**	ug/L	4.0	1		06/04/20 19:27	74-88-4	
Methylene Chloride	**<1.0**	ug/L	1.0	1		06/04/20 19:27	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		06/04/20 19:27	108-10-1	
Styrene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	100-42-5	
1,1,1,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	630-20-6	L1
1,1,2,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	79-34-5	
Tetrachloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	127-18-4	
Toluene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	108-88-3	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	71-55-6	
1,1,2-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	79-00-5	
Trichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:27	79-01-6	
Trichlorofluoromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	75-69-4	
1,2,3-Trichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 19:27	96-18-4	
Vinyl acetate	**<1.0**	ug/L	1.0	1		06/04/20 19:27	108-05-4	
Vinyl chloride	**<1.0**	ug/L	1.0	1		06/04/20 19:27	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: TRIP BLANK **Lab ID: 70132491006** Collected: 05/28/20 00:00 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Xylene (Total)	**<3.0**	ug/L	3.0	1		06/04/20 19:27	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	100	%	68-153	1		06/04/20 19:27	17060-07-0	
4-Bromofluorobenzene (S)	95	%	79-124	1		06/04/20 19:27	460-00-4	
Toluene-d8 (S)	93	%	69-124	1		06/04/20 19:27	2037-26-5	
TIC MSV Water	Analytical Method: EPA 8260 Pace Analytical Services - Melville							
TIC Search	**No TIC's Found**			1		06/05/20 14:58		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: STORAGE BLANK **Lab ID: 70132491007** Collected: 05/28/20 00:00 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Acetone	**<5.0**	ug/L	5.0	1		06/04/20 19:47	67-64-1	IC
Acrylonitrile	**<1.0**	ug/L	1.0	1		06/04/20 19:47	107-13-1	
Benzene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	71-43-2	
Bromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	74-97-5	
Bromodichloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		06/04/20 19:47	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	74-83-9	
2-Butanone (MEK)	**<5.0**	ug/L	5.0	1		06/04/20 19:47	78-93-3	CL
Carbon disulfide	**<1.0**	ug/L	1.0	1		06/04/20 19:47	75-15-0	
Carbon tetrachloride	**<1.0**	ug/L	1.0	1		06/04/20 19:47	56-23-5	
Chlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		06/04/20 19:47	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	74-87-3	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	96-12-8	
Dibromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	124-48-1	
1,2-Dibromoethane (EDB)	**<1.0**	ug/L	1.0	1		06/04/20 19:47	106-93-4	
Dibromomethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	74-95-3	
1,2-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	95-50-1	
1,4-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	106-46-7	
trans-1,4-Dichloro-2-butene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	110-57-6	
1,1-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	75-34-3	
1,2-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	75-35-4	
cis-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	156-59-2	
trans-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	156-60-5	
1,2-Dichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	78-87-5	
cis-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	10061-01-5	L1
trans-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	10061-02-6	
Ethylbenzene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	100-41-4	
2-Hexanone	**<5.0**	ug/L	5.0	1		06/04/20 19:47	591-78-6	
Iodomethane	**<4.0**	ug/L	4.0	1		06/04/20 19:47	74-88-4	
Methylene Chloride	**<1.0**	ug/L	1.0	1		06/04/20 19:47	75-09-2	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		06/04/20 19:47	108-10-1	
Styrene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	100-42-5	
1,1,1,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	630-20-6	L1
1,1,2,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	79-34-5	
Tetrachloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	127-18-4	
Toluene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	108-88-3	
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	71-55-6	
1,1,2-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	79-00-5	
Trichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 19:47	79-01-6	
Trichlorofluoromethane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	75-69-4	
1,2,3-Trichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 19:47	96-18-4	
Vinyl acetate	**<1.0**	ug/L	1.0	1		06/04/20 19:47	108-05-4	
Vinyl chloride	**<1.0**	ug/L	1.0	1		06/04/20 19:47	75-01-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Sample: STORAGE BLANK **Lab ID: 70132491007** Collected: 05/28/20 00:00 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Xylene (Total)	**<3.0**	ug/L	3.0	1		06/04/20 19:47	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	68-153	1		06/04/20 19:47	17060-07-0	
4-Bromofluorobenzene (S)	95	%	79-124	1		06/04/20 19:47	460-00-4	
Toluene-d8 (S)	88	%	69-124	1		06/04/20 19:47	2037-26-5	
TIC MSV Water	Analytical Method: EPA 8260 Pace Analytical Services - Melville							
TIC Search	**No TIC's Found**			1		06/05/20 14:59		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 162815 Analysis Method: EPA 7470A
QC Batch Method: EPA 7470A Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 784609 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.20	0.20	06/02/20 11:28	

LABORATORY CONTROL SAMPLE: 784610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.2	116	80-120	

MATRIX SPIKE SAMPLE: 784611

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	<0.20	1	1.0	99	75-125	

SAMPLE DUPLICATE: 784612

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Mercury	ug/L	<0.20	<0.20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163143
QC Batch Method: EPA 3005A
Analysis Method: EPA 6010C
Analysis Description: 6010 MET Water
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 785938 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	<200	200	06/30/20 15:58	
Antimony	ug/L	<60.0	60.0	06/30/20 15:58	
Arsenic	ug/L	<10.0	10.0	06/30/20 15:58	
Barium	ug/L	<200	200	06/30/20 15:58	
Beryllium	ug/L	<5.0	5.0	06/30/20 15:58	
Boron	ug/L	<50.0	50.0	06/30/20 15:58	
Cadmium	ug/L	<2.5	2.5	06/30/20 15:58	
Calcium	ug/L	<200	200	06/30/20 15:58	
Chromium	ug/L	<10.0	10.0	06/30/20 15:58	
Cobalt	ug/L	<50.0	50.0	06/30/20 15:58	
Copper	ug/L	<25.0	25.0	06/30/20 15:58	
Iron	ug/L	<20.0	20.0	06/30/20 15:58	
Lead	ug/L	<5.0	5.0	06/30/20 15:58	
Magnesium	ug/L	<200	200	06/30/20 15:58	
Manganese	ug/L	<10.0	10.0	06/30/20 15:58	
Nickel	ug/L	<40.0	40.0	06/30/20 15:58	
Potassium	ug/L	<5000	5000	06/30/20 15:58	
Selenium	ug/L	<10.0	10.0	06/30/20 15:58	
Silver	ug/L	<10.0	10.0	06/30/20 15:58	
Sodium	ug/L	<5000	5000	06/30/20 15:58	
Thallium	ug/L	<10.0	10.0	06/30/20 15:58	
Vanadium	ug/L	<50.0	50.0	06/30/20 15:58	
Zinc	ug/L	9.0J	20.0	06/30/20 15:58	

LABORATORY CONTROL SAMPLE: 785939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5000	5110	102	80-120	
Antimony	ug/L	750	727	97	80-120	
Arsenic	ug/L	500	524	105	80-120	
Barium	ug/L	500	515	103	80-120	
Beryllium	ug/L	50	52.3	105	80-120	
Boron	ug/L	2500	2630	105	80-120	
Cadmium	ug/L	50	51.3	103	80-120	
Calcium	ug/L	25000	25700	103	80-120	
Chromium	ug/L	250	264	106	80-120	
Cobalt	ug/L	500	516	103	80-120	
Copper	ug/L	250	256	102	80-120	
Iron	ug/L	2000	2060	103	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

LABORATORY CONTROL SAMPLE: 785939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	515	103	80-120	
Magnesium	ug/L	25000	25300	101	80-120	
Manganese	ug/L	250	260	104	80-120	
Nickel	ug/L	250	258	103	80-120	
Potassium	ug/L	50000	51900	104	80-120	
Selenium	ug/L	750	776	103	80-120	
Silver	ug/L	250	258	103	80-120	
Sodium	ug/L	50000	49900	100	80-120	
Thallium	ug/L	750	727	97	80-120	
Vanadium	ug/L	500	521	104	80-120	
Zinc	ug/L	1000	1050	105	80-120	

MATRIX SPIKE SAMPLE: 785941

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	<200	5000	5230	105	75-125	
Antimony	ug/L	<60.0	750	792	106	75-125	
Arsenic	ug/L	<10.0	500	557	111	75-125	
Barium	ug/L	619	500	1150	106	75-125	
Beryllium	ug/L	0.13J	50	49.2	98	75-125	
Boron	ug/L	243	2500	2870	105	75-125	
Cadmium	ug/L	<2.5	50	46.7	93	75-125	
Calcium	ug/L	2390000	25000	2430000	160	75-125	M6
Chromium	ug/L	48.9	250	303	102	75-125	
Cobalt	ug/L	<50.0	500	482	96	75-125	
Copper	ug/L	39.8	250	252	85	75-125	
Iron	ug/L	6160	2000	7830	84	75-125	
Lead	ug/L	<5.0	500	474	95	75-125	
Magnesium	ug/L	12000	25000	34500	90	75-125	
Manganese	ug/L	1300	250	1540	96	75-125	
Nickel	ug/L	47.8	250	281	93	75-125	
Potassium	ug/L	937000	50000	986000	98	75-125	
Selenium	ug/L	<10.0	750	802	106	75-125	
Silver	ug/L	4.7J	250	124	48	75-125	M1
Sodium	ug/L	2230000	50000	2280000	100	75-125	
Thallium	ug/L	<10.0	750	621	82	75-125	
Vanadium	ug/L	<50.0	500	508	102	75-125	
Zinc	ug/L	<20.0	1000	950	95	75-125	

SAMPLE DUPLICATE: 785940

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Aluminum	ug/L	<200	<200		
Antimony	ug/L	<60.0	<60.0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

SAMPLE DUPLICATE: 785940

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Arsenic	ug/L	<10.0	<10.0		
Barium	ug/L	619	600	3	
Beryllium	ug/L	0.13J	0.11J		
Boron	ug/L	243	231	5	
Cadmium	ug/L	<2.5	<2.5		
Calcium	ug/L	2390000	2530000	6	
Chromium	ug/L	48.9	47.7	2	
Cobalt	ug/L	<50.0	<50.0		
Copper	ug/L	39.8	13.8J		
Iron	ug/L	6160	5790	6	
Lead	ug/L	<5.0	<5.0		
Magnesium	ug/L	12000	11600	3	
Manganese	ug/L	1300	1250	4	
Nickel	ug/L	47.8	40.6	16	
Potassium	ug/L	937000	984000	5	
Selenium	ug/L	<10.0	9.0J		
Silver	ug/L	4.7J	4.2J		
Sodium	ug/L	2230000	2350000	5	
Thallium	ug/L	<10.0	<10.0		
Vanadium	ug/L	<50.0	<50.0		
Zinc	ug/L	<20.0	<20.0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163001
QC Batch Method: EPA 8260C SIM/5030C
Analysis Method: EPA 8260C SIM/5030C
Analysis Description: 8260C SIM 5030C
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 785488 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	<0.20	0.20	06/03/20 15:15	
1,2-Dichlorobenzene-d4 (S)	%	81	60-140	06/03/20 15:15	
4-Bromofluorobenzene (S)	%	99	79-124	06/03/20 15:15	

LABORATORY CONTROL SAMPLE: 785489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	2.5	2.1	82	60-140	
1,2-Dichlorobenzene-d4 (S)	%			65	60-140	
4-Bromofluorobenzene (S)	%			98	79-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 785507 785508

Parameter	Units	70132491003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	0.38	2.5	2.5	2.3	2.4	76	82	60-140	6	
1,2-Dichlorobenzene-d4 (S)	%						89	60	60-140		
4-Bromofluorobenzene (S)	%						105	99	79-124		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163393
QC Batch Method: EPA 8260C/5030C
Analysis Method: EPA 8260C/5030C
Analysis Description: 8260 MSV
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005, 70132491006, 70132491007

METHOD BLANK: 787417
Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005, 70132491006, 70132491007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,1,1-Trichloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,1,2,2-Tetrachloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,1,2-Trichloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,1-Dichloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,1-Dichloroethene	ug/L	<1.0	1.0	06/04/20 17:44	
1,2,3-Trichloropropane	ug/L	<1.0	1.0	06/04/20 17:44	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	1.0	06/04/20 17:44	
1,2-Dibromoethane (EDB)	ug/L	<1.0	1.0	06/04/20 17:44	
1,2-Dichlorobenzene	ug/L	<1.0	1.0	06/04/20 17:44	
1,2-Dichloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,2-Dichloropropane	ug/L	<1.0	1.0	06/04/20 17:44	
1,4-Dichlorobenzene	ug/L	<1.0	1.0	06/04/20 17:44	
2-Butanone (MEK)	ug/L	<5.0	5.0	06/04/20 17:44	CL
2-Hexanone	ug/L	<5.0	5.0	06/04/20 17:44	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	06/04/20 17:44	
Acetone	ug/L	<5.0	5.0	06/04/20 17:44	IC
Acrylonitrile	ug/L	<1.0	1.0	06/04/20 17:44	
Benzene	ug/L	<1.0	1.0	06/04/20 17:44	
Bromochloromethane	ug/L	<1.0	1.0	06/04/20 17:44	
Bromodichloromethane	ug/L	<1.0	1.0	06/04/20 17:44	
Bromoform	ug/L	<1.0	1.0	06/04/20 17:44	
Bromomethane	ug/L	<1.0	1.0	06/04/20 17:44	
Carbon disulfide	ug/L	<1.0	1.0	06/04/20 17:44	
Carbon tetrachloride	ug/L	<1.0	1.0	06/04/20 17:44	
Chlorobenzene	ug/L	<1.0	1.0	06/04/20 17:44	
Chloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
Chloroform	ug/L	<1.0	1.0	06/04/20 17:44	
Chloromethane	ug/L	<1.0	1.0	06/04/20 17:44	
cis-1,2-Dichloroethene	ug/L	<1.0	1.0	06/04/20 17:44	
cis-1,3-Dichloropropene	ug/L	<1.0	1.0	06/04/20 17:44	
Dibromochloromethane	ug/L	<1.0	1.0	06/04/20 17:44	
Dibromomethane	ug/L	<1.0	1.0	06/04/20 17:44	
Ethylbenzene	ug/L	<1.0	1.0	06/04/20 17:44	
Iodomethane	ug/L	<4.0	4.0	06/04/20 17:44	
Methylene Chloride	ug/L	<1.0	1.0	06/04/20 17:44	
Styrene	ug/L	<1.0	1.0	06/04/20 17:44	
Tetrachloroethene	ug/L	<1.0	1.0	06/04/20 17:44	
Toluene	ug/L	<1.0	1.0	06/04/20 17:44	
trans-1,2-Dichloroethene	ug/L	<1.0	1.0	06/04/20 17:44	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

METHOD BLANK: 787417 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005, 70132491006, 70132491007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
trans-1,3-Dichloropropene	ug/L	<1.0	1.0	06/04/20 17:44	
trans-1,4-Dichloro-2-butene	ug/L	<1.0	1.0	06/04/20 17:44	
Trichloroethene	ug/L	<1.0	1.0	06/04/20 17:44	
Trichlorofluoromethane	ug/L	<1.0	1.0	06/04/20 17:44	
Vinyl acetate	ug/L	<1.0	1.0	06/04/20 17:44	
Vinyl chloride	ug/L	<1.0	1.0	06/04/20 17:44	
Xylene (Total)	ug/L	<3.0	3.0	06/04/20 17:44	
1,2-Dichloroethane-d4 (S)	%	100	68-153	06/04/20 17:44	
4-Bromofluorobenzene (S)	%	94	79-124	06/04/20 17:44	
Toluene-d8 (S)	%	96	69-124	06/04/20 17:44	

LABORATORY CONTROL SAMPLE: 787418

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	57.2	114	74-113	L1
1,1,1-Trichloroethane	ug/L	50	50.0	100	65-118	
1,1,2,2-Tetrachloroethane	ug/L	50	54.2	108	74-121	
1,1,2-Trichloroethane	ug/L	50	50.9	102	80-117	
1,1-Dichloroethane	ug/L	50	44.8	90	83-151	
1,1-Dichloroethene	ug/L	50	52.2	104	45-146	
1,2,3-Trichloropropane	ug/L	50	52.2	104	71-123	
1,2-Dibromo-3-chloropropane	ug/L	50	53.8	108	74-119	
1,2-Dibromoethane (EDB)	ug/L	50	56.7	113	83-115	
1,2-Dichlorobenzene	ug/L	50	48.1	96	74-113	
1,2-Dichloroethane	ug/L	50	49.3	99	74-129	
1,2-Dichloropropane	ug/L	50	47.6	95	75-117	
1,4-Dichlorobenzene	ug/L	50	47.1	94	71-113	
2-Butanone (MEK)	ug/L	50	41.5	83	44-162	CL
2-Hexanone	ug/L	50	51.2	102	32-183	
4-Methyl-2-pentanone (MIBK)	ug/L	50	54.2	108	69-132	
Acetone	ug/L	50	41.1	82	23-188	IC
Acrylonitrile	ug/L	50	51.5	103	59-148	
Benzene	ug/L	50	48.4	97	73-119	
Bromochloromethane	ug/L	50	49.9	100	81-116	
Bromodichloromethane	ug/L	50	57.5	115	78-117	
Bromoform	ug/L	50	54.2	108	65-122	
Bromomethane	ug/L	50	61.2	122	52-147	
Carbon disulfide	ug/L	50	55.5	111	41-144	
Carbon tetrachloride	ug/L	50	53.3	107	59-120	
Chlorobenzene	ug/L	50	49.3	99	75-113	
Chloroethane	ug/L	50	51.6	103	49-151	
Chloroform	ug/L	50	47.7	95	72-122	
Chloromethane	ug/L	50	44.6	89	46-144	
cis-1,2-Dichloroethene	ug/L	50	47.6	95	72-121	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

LABORATORY CONTROL SAMPLE: 787418

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,3-Dichloropropene	ug/L	50	58.3	117	78-116	L1
Dibromochloromethane	ug/L	50	57.9	116	70-120	
Dibromomethane	ug/L	50	52.6	105	75-125	
Ethylbenzene	ug/L	50	48.9	98	70-113	
Iodomethane	ug/L	50	55.7	111	61-144	
Methylene Chloride	ug/L	50	51.4	103	61-142	
Styrene	ug/L	50	53.7	107	72-118	
Tetrachloroethene	ug/L	50	45.2	90	60-128	
Toluene	ug/L	50	49.1	98	72-119	
trans-1,2-Dichloroethene	ug/L	50	46.2	92	56-142	
trans-1,3-Dichloropropene	ug/L	50	51.2	102	79-116	
trans-1,4-Dichloro-2-butene	ug/L	50	43.3	87	71-121	
Trichloroethene	ug/L	50	48.0	96	69-117	
Trichlorofluoromethane	ug/L	50	53.2	106	27-173	
Vinyl acetate	ug/L	50	53.2	106	20-158	
Vinyl chloride	ug/L	50	58.5	117	43-143	CH
Xylene (Total)	ug/L	150	150	100	71-109	
1,2-Dichloroethane-d4 (S)	%			96	68-153	
4-Bromofluorobenzene (S)	%			101	79-124	
Toluene-d8 (S)	%			88	69-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 787419 787420

Parameter	Units	70132491003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<1.0	50	50	52.1	49.5	104	99	74-113	5	
1,1,1-Trichloroethane	ug/L	<1.0	50	50	49.8	48.9	100	98	65-118	2	
1,1,2,2-Tetrachloroethane	ug/L	<1.0	50	50	51.5	47.2	103	94	74-121	9	
1,1,2-Trichloroethane	ug/L	<1.0	50	50	49.5	48.8	99	98	80-117	1	
1,1-Dichloroethane	ug/L	<1.0	50	50	47.8	45.8	96	92	83-151	4	
1,1-Dichloroethene	ug/L	<1.0	50	50	59.2	56.7	118	113	45-146	4	
1,2,3-Trichloropropane	ug/L	<1.0	50	50	48.9	44.9	98	90	71-123	8	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	50.0	48.7	100	97	74-119	3	
1,2-Dibromoethane (EDB)	ug/L	<1.0	50	50	54.0	52.6	108	105	83-115	3	
1,2-Dichlorobenzene	ug/L	<1.0	50	50	46.1	46.4	92	93	74-113	1	
1,2-Dichloroethane	ug/L	<1.0	50	50	47.1	46.5	94	93	74-129	1	
1,2-Dichloropropane	ug/L	<1.0	50	50	45.2	44.2	90	88	75-117	2	
1,4-Dichlorobenzene	ug/L	<1.0	50	50	45.5	45.0	91	90	71-113	1	
2-Butanone (MEK)	ug/L	<5.0	50	50	39.6	36.6	79	73	44-162	8	CL
2-Hexanone	ug/L	<5.0	50	50	52.7	49.6	105	99	32-183	6	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	50	50	53.2	49.6	106	99	69-132	7	
Acetone	ug/L	<5.0	50	50	42.0	38.0	84	76	23-188	10	IC
Acrylonitrile	ug/L	<1.0	50	50	53.5	48.7	107	97	59-148	9	
Benzene	ug/L	<1.0	50	50	47.8	46.5	96	93	73-119	3	
Bromochloromethane	ug/L	<1.0	50	50	45.8	46.0	92	92	81-116	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 787419 787420

Parameter	Units	70132491003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Bromodichloromethane	ug/L	<1.0	50	50	50.1	48.6	100	97	78-117	3	
Bromoform	ug/L	<1.0	50	50	40.5	39.3	81	79	65-122	3	
Bromomethane	ug/L	<1.0	50	50	28.6	36.5	57	73	52-147	24	R1
Carbon disulfide	ug/L	<1.0	50	50	58.5	59.9	117	120	41-144	2	
Carbon tetrachloride	ug/L	<1.0	50	50	49.7	50.4	99	101	59-120	1	
Chlorobenzene	ug/L	<1.0	50	50	46.8	45.2	94	90	75-113	3	
Chloroethane	ug/L	<1.0	50	50	57.9	57.8	116	116	49-151	0	
Chloroform	ug/L	<1.0	50	50	47.9	46.1	96	92	72-122	4	
Chloromethane	ug/L	<1.0	50	50	41.9	43.3	84	87	46-144	3	
cis-1,2-Dichloroethene	ug/L	<1.0	50	50	47.9	46.7	96	93	72-121	3	
cis-1,3-Dichloropropene	ug/L	<1.0	50	50	48.9	48.6	98	97	78-116	1	
Dibromochloromethane	ug/L	<1.0	50	50	50.3	50.4	101	101	70-120	0	
Dibromomethane	ug/L	<1.0	50	50	48.7	47.1	97	94	75-125	3	
Ethylbenzene	ug/L	<1.0	50	50	47.5	46.9	95	94	70-113	1	
Iodomethane	ug/L	<4.0	50	50	42.9	54.3	86	109	61-144	23	R1
Methylene Chloride	ug/L	<1.0	50	50	49.6	49.1	99	98	61-142	1	
Styrene	ug/L	<1.0	50	50	54.0	51.6	108	103	72-118	5	
Tetrachloroethene	ug/L	<1.0	50	50	46.2	45.7	92	91	60-128	1	
Toluene	ug/L	<1.0	50	50	49.1	46.4	98	93	72-119	6	
trans-1,2-Dichloroethene	ug/L	<1.0	50	50	50.8	47.8	102	96	56-142	6	
trans-1,3-Dichloropropene	ug/L	<1.0	50	50	42.8	41.5	86	83	79-116	3	
trans-1,4-Dichloro-2-butene	ug/L	<1.0	50	50	5.7	5.5	11	11	71-121	4	M1
Trichloroethene	ug/L	<1.0	50	50	48.1	48.1	96	96	69-117	0	
Trichlorofluoromethane	ug/L	<1.0	50	50	59.2	60.9	118	122	27-173	3	
Vinyl acetate	ug/L	<1.0	50	50	43.2	41.6	86	83	20-158	4	
Vinyl chloride	ug/L	<1.0	50	50	64.6	67.5	129	135	43-143	4	CH
Xylene (Total)	ug/L	<3.0	150	150	148	147	99	98	71-109	1	
1,2-Dichloroethane-d4 (S)	%						97	100	68-153		
4-Bromofluorobenzene (S)	%						100	101	79-124		
Toluene-d8 (S)	%						91	92	69-124		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 162526 Analysis Method: SM22 2120B
QC Batch Method: SM22 2120B Analysis Description: 2120B Color
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 782669 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Apparent Color	units	<5.0	5.0	05/29/20 15:07	

LABORATORY CONTROL SAMPLE: 782670

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Apparent Color	units	40	40.0	100	90-110	

SAMPLE DUPLICATE: 782671

Parameter	Units	70132476002 Result	Dup Result	RPD	Qualifiers
Apparent Color	units	<5.0	<5.0		
pH	Std. Units	5.8	5.8	0	

SAMPLE DUPLICATE: 783113

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Apparent Color	units	50.0	50.0	0	
pH	Std. Units	6.9	6.9	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163705 | Analysis Method: SM22 2320B
QC Batch Method: SM22 2320B | Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 789425 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	1.0	06/09/20 09:24	

LABORATORY CONTROL SAMPLE: 789426

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	25	24.8	99	85-115	

MATRIX SPIKE SAMPLE: 789430

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	196	25	212	62	75-125	M1

SAMPLE DUPLICATE: 789429

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	196	190	3	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 164981 Analysis Method: SM22 2340C
QC Batch Method: SM22 2340C Analysis Description: 2340C Hardness, Total
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 796192 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	<5.0	5.0	06/16/20 16:01	

LABORATORY CONTROL SAMPLE: 796193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	100	103	103	90-110	

MATRIX SPIKE SAMPLE: 796194

Parameter	Units	70132217001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	280	2000	2220	97	75-125	

MATRIX SPIKE SAMPLE: 796196

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	10200	20000	29400	96	75-125	

SAMPLE DUPLICATE: 796195

Parameter	Units	70132217001 Result	Dup Result	RPD	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	280	320	13	

SAMPLE DUPLICATE: 796197

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	10200	10400	2	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163053 — Analysis Method: SM22 2540C
QC Batch Method: SM22 2540C — Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 785631 — Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<10.0	10.0	06/03/20 10:24	

LABORATORY CONTROL SAMPLE: 785632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	500	486	97	85-115	

MATRIX SPIKE SAMPLE: 785634

Parameter	Units	70132432001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1200	300	1460	87	75-125	

MATRIX SPIKE SAMPLE: 785636

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	13700	600	14400	105	75-125	

SAMPLE DUPLICATE: 785633

Parameter	Units	70132432001 Result	Dup Result	RPD	Qualifiers
Total Dissolved Solids	mg/L	1200	1170	3	

SAMPLE DUPLICATE: 785635

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Total Dissolved Solids	mg/L	13700	14200	4	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 162457 | Analysis Method: SM22 3500-Cr B
QC Batch Method: SM22 3500-Cr B | Analysis Description: Chromium, Hexavalent by 3500
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 782500 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/L	<0.020	0.020	05/29/20 07:52	

LABORATORY CONTROL SAMPLE: 782501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/L	0.2	0.20	101	85-115	

MATRIX SPIKE SAMPLE: 782502

Parameter	Units	70132491004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/L	<0.020	0.2	0.19	97	75-125	

SAMPLE DUPLICATE: 782503

Parameter	Units	70132491004 Result	Dup Result	RPD	Qualifiers
Chromium, Hexavalent	mg/L	<0.020	<0.020		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163807 | Analysis Method: EPA 410.4
QC Batch Method: EPA 410.4 | Analysis Description: 410.4 COD
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 790048 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<10.0	10.0	06/09/20 11:59	

LABORATORY CONTROL SAMPLE: 790049

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	500	521	104	90-110	

MATRIX SPIKE SAMPLE: 790050

Parameter	Units	70132220004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	29.4	1000	1030	100	90-110	

MATRIX SPIKE SAMPLE: 790052

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	494	1000	1310	82	90-110	M1

SAMPLE DUPLICATE: 790051

Parameter	Units	70132220004 Result	Dup Result	RPD	Qualifiers
Chemical Oxygen Demand	mg/L	29.4	29.4	0	

SAMPLE DUPLICATE: 790053

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Chemical Oxygen Demand	mg/L	494	528	7	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 162564 Analysis Method: SM22 5210B
QC Batch Method: SM22 5210B Analysis Description: 5210B BOD, 5 day
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 782999 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	<2.0	2.0	06/03/20 11:44	

LABORATORY CONTROL SAMPLE: 783000

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	177	90	84.5-115.4	

SAMPLE DUPLICATE: 783001

Parameter	Units	70132536001 Result	Dup Result	RPD	Qualifiers
BOD, 5 day	mg/L	182	202	11	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163044
QC Batch Method: EPA 9030B
Analysis Method: EPA 9034
Analysis Description: 9034 Sulfide Waste Water
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002

METHOD BLANK: 785615 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	<2.0	2.0	06/03/20 16:31	

LABORATORY CONTROL SAMPLE: 785616

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	56.1	46.4	83	80-120	

SAMPLE DUPLICATE: 785617

Parameter	Units	70132489001 Result	Dup Result	RPD	Qualifiers
Sulfide	mg/L	25.6	30.4	17	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163259
QC Batch Method: EPA 9030B
Analysis Method: EPA 9034
Analysis Description: 9034 Sulfide Waste Water
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491003, 70132491004, 70132491005

METHOD BLANK: 786835 Matrix: Water
Associated Lab Samples: 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	<2.0	2.0	06/04/20 16:31	

LABORATORY CONTROL SAMPLE: 786836

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	56.1	48.0	86	80-120	

SAMPLE DUPLICATE: 786837

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Sulfide	mg/L	1.6J	<2.0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163757
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 789850 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	<0.50	0.50	06/08/20 19:37	
Chloride	mg/L	<2.0	2.0	06/08/20 19:37	
Sulfate	mg/L	<5.0	5.0	06/08/20 19:37	

LABORATORY CONTROL SAMPLE: 789851

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	1	1.0	100	90-110	
Chloride	mg/L	10	10.7	107	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE SAMPLE: 789852

Parameter	Units	70133362003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	<0.50	1	1.0	94	90-110	
Chloride	mg/L	32.3	10	43.4	111	90-110	M1
Sulfate	mg/L	16.9	10	26.5	96	90-110	

MATRIX SPIKE SAMPLE: 789925

Parameter	Units	70132541001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	ND	1	1.0	98	90-110	
Chloride	mg/L	8.2	10	17.7	95	90-110	
Sulfate	mg/L	<5.0	10	14.0	103	90-110	

SAMPLE DUPLICATE: 789853

Parameter	Units	70133362003 Result	Dup Result	RPD	Qualifiers
Bromide	mg/L	<0.50	0.070J		
Chloride	mg/L	32.3	32.4	0	
Sulfate	mg/L	16.9	16.7	1	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

SAMPLE DUPLICATE: 789926

Parameter	Units	70132541001 Result	Dup Result	RPD	Qualifiers
Bromide	mg/L	ND	<0.50		
Chloride	mg/L	8.2	8.2	0	
Sulfate	mg/L	<5.0	3.7J		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163792 — Analysis Method: EPA 351.2
QC Batch Method: EPA 351.2 — Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 790022 — Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.10	0.10	06/10/20 14:59	

LABORATORY CONTROL SAMPLE: 790023

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	4	4.4	110	90-110	

MATRIX SPIKE SAMPLE: 790024

Parameter	Units	70132408002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.10	4	2.8	69	90-110	M1

MATRIX SPIKE SAMPLE: 790026

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	11.2	20	37.7	132	90-110	M1

SAMPLE DUPLICATE: 790025

Parameter	Units	70132408002 Result	Dup Result	RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.10	<0.10		

SAMPLE DUPLICATE: 790027

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	11.2	11.9	6	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 162438 | Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 | Analysis Description: 353.2 Nitrite, Unpres.
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 782441 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrite as N	mg/L	<0.050	0.050	05/28/20 23:45	

LABORATORY CONTROL SAMPLE: 782442

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrite as N	mg/L	1	1.0	102	90-110	

MATRIX SPIKE SAMPLE: 782443

Parameter	Units	70132478001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrite as N	mg/L	<0.050	0.5	0.50	100	90-110	

MATRIX SPIKE SAMPLE: 782445

Parameter	Units	70132491001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrite as N	mg/L	0.061	0.5	0.50	88	90-110	M1

SAMPLE DUPLICATE: 782444

Parameter	Units	70132478001 Result	Dup Result	RPD	Qualifiers
Nitrite as N	mg/L	<0.050	<0.050		

SAMPLE DUPLICATE: 782446

Parameter	Units	70132491001 Result	Dup Result	RPD	Qualifiers
Nitrite as N	mg/L	0.061	0.067	9	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 162441 Analysis Method: EPA 353.2
QC Batch Method: EPA 353.2 Analysis Description: 353.2 Nitrate, Unpres.
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 782457 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate-Nitrite (as N)	mg/L	<0.050	0.050	05/29/20 01:25	

LABORATORY CONTROL SAMPLE: 782458

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate-Nitrite (as N)	mg/L	1	0.95	95	90-110	

MATRIX SPIKE SAMPLE: 782459

Parameter	Units	70132491001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate-Nitrite (as N)	mg/L	<0.50	5	5.7	111	90-110	M6

MATRIX SPIKE SAMPLE: 782461

Parameter	Units	70132498001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate-Nitrite (as N)	mg/L	<0.50	5	5.6	106	90-110	

SAMPLE DUPLICATE: 782460

Parameter	Units	70132491001 Result	Dup Result	RPD	Qualifiers
Nitrate-Nitrite (as N)	mg/L	<0.50	<0.50		

SAMPLE DUPLICATE: 782462

Parameter	Units	70132498001 Result	Dup Result	RPD	Qualifiers
Nitrate-Nitrite (as N)	mg/L	<0.50	<0.50		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163749 Analysis Method: EPA 420.1
QC Batch Method: EPA 420.1 Analysis Description: 420.1 Phenolics Macro
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 789780 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phenolics, Total Recoverable	ug/L	<5.0	5.0	06/09/20 11:39	

LABORATORY CONTROL SAMPLE: 789781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenolics, Total Recoverable	ug/L	100	110	110	90-110	

MATRIX SPIKE SAMPLE: 789782

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Phenolics, Total Recoverable	ug/L	<5.0	50	63.3	122	75-125	

SAMPLE DUPLICATE: 789783

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Phenolics, Total Recoverable	ug/L	<5.0	<5.0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 164272
QC Batch Method: SM22 4500 NH3 H
Analysis Method: SM22 4500 NH3 H
Analysis Description: 4500 Ammonia
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004

METHOD BLANK: 792754 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.10	0.10	06/11/20 12:41	

LABORATORY CONTROL SAMPLE: 792755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	0.97	97	90-110	

MATRIX SPIKE SAMPLE: 792756

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	11.4	10	21.3	99	75-125	

SAMPLE DUPLICATE: 792757

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Nitrogen, Ammonia	mg/L	11.4	11.3	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 164275
QC Batch Method: SM22 4500 NH3 H
Analysis Method: SM22 4500 NH3 H
Analysis Description: 4500 Ammonia
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491005

METHOD BLANK: 792768 Matrix: Water
Associated Lab Samples: 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.10	0.10	06/11/20 13:14	

LABORATORY CONTROL SAMPLE: 792769

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	0.97	97	90-110	

MATRIX SPIKE SAMPLE: 792770

Parameter	Units	70132689001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	23.5	10	32.1	86	75-125	

SAMPLE DUPLICATE: 792771

Parameter	Units	70132689001 Result	Dup Result	RPD	Qualifiers
Nitrogen, Ammonia	mg/L	23.5	22.8	3	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163670
QC Batch Method: EPA 9010C
Analysis Method: EPA 9014 Total Cyanide
Analysis Description: 9014 Cyanide, Total
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 789329 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	ug/L	<10.0	10.0	06/08/20 15:41	

LABORATORY CONTROL SAMPLE: 789330

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	ug/L	75	70.7	94	85-115	

MATRIX SPIKE SAMPLE: 789331

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	ug/L	<10.0	100	116	115	75-125	

SAMPLE DUPLICATE: 789332

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Cyanide	ug/L	<10.0	<10.0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

QC Batch: 163666
QC Batch Method: EPA 9060A
Analysis Method: EPA 9060A
Analysis Description: 9060 TOC
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

METHOD BLANK: 789321 Matrix: Water
Associated Lab Samples: 70132491001, 70132491002, 70132491003, 70132491004, 70132491005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/L	<1.0	1.0	06/08/20 20:40	
Total Organic Carbon	mg/L	<1.0	1.0	06/08/20 20:40	
Total Organic Carbon	mg/L	<1.0	1.0	06/08/20 20:40	
Total Organic Carbon	mg/L	<1.0	1.0	06/08/20 20:40	
Total Organic Carbon	mg/L	<1.0	1.0	06/08/20 20:40	

LABORATORY CONTROL SAMPLE: 789322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/L	10	9.4	94	85-115	
Total Organic Carbon	mg/L	10	9.4	94	85-115	
Total Organic Carbon	mg/L	10	9.4	94	85-115	
Total Organic Carbon	mg/L	10	9.4	94	85-115	
Total Organic Carbon	mg/L	10	9.4	94	85-115	

MATRIX SPIKE SAMPLE: 789324

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/L	8.2	10	18.1	99	75-125	
Total Organic Carbon	mg/L	8.2	10	18.1	98	75-125	
Total Organic Carbon	mg/L	8.0	10	18.2	102	75-125	
Total Organic Carbon	mg/L	8.4	10	18.2	98	75-125	
Total Organic Carbon	mg/L	8.2	10	17.9	97	75-125	

SAMPLE DUPLICATE: 789323

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Mean Total Organic Carbon	mg/L	8.2	8.0	3	
Total Organic Carbon	mg/L	8.4	7.9	6	
Total Organic Carbon	mg/L	8.2	8.0	3	
Total Organic Carbon	mg/L	8.2	8.0	3	
Total Organic Carbon	mg/L	8.0	7.9	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALIFIERS

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.
CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
IC	The initial calibration for this compound was outside of method control limits. The result is estimated.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
N	The reported TIC has an 85% or higher match on a mass spectral library search.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
70132491001	NNU PLCRS	EPA 3005A	163143	EPA 6010C	163146
70132491002	NNU SLCRS	EPA 3005A	163143	EPA 6010C	163146
70132491003	ONU SLCRS	EPA 3005A	163143	EPA 6010C	163146
70132491004	SA SLCRS	EPA 3005A	163143	EPA 6010C	163146
70132491005	EQUIPMENT BLANK	EPA 3005A	163143	EPA 6010C	163146
70132491001	NNU PLCRS	EPA 7470A	162815	EPA 7470A	162823
70132491002	NNU SLCRS	EPA 7470A	162815	EPA 7470A	162823
70132491003	ONU SLCRS	EPA 7470A	162815	EPA 7470A	162823
70132491004	SA SLCRS	EPA 7470A	162815	EPA 7470A	162823
70132491005	EQUIPMENT BLANK	EPA 7470A	162815	EPA 7470A	162823
70132491001	NNU PLCRS	EPA 8260C SIM/5030C	163001		
70132491002	NNU SLCRS	EPA 8260C SIM/5030C	163001		
70132491003	ONU SLCRS	EPA 8260C SIM/5030C	163001		
70132491004	SA SLCRS	EPA 8260C SIM/5030C	163001		
70132491005	EQUIPMENT BLANK	EPA 8260C SIM/5030C	163001		
70132491001	NNU PLCRS	EPA 8260C/5030C	163393		
70132491002	NNU SLCRS	EPA 8260C/5030C	163393		
70132491003	ONU SLCRS	EPA 8260C/5030C	163393		
70132491004	SA SLCRS	EPA 8260C/5030C	163393		
70132491005	EQUIPMENT BLANK	EPA 8260C/5030C	163393		
70132491006	TRIP BLANK	EPA 8260C/5030C	163393		
70132491007	STORAGE BLANK	EPA 8260C/5030C	163393		
70132491003	ONU SLCRS	EPA 8260			
70132491004	SA SLCRS	EPA 8260			
70132491005	EQUIPMENT BLANK	EPA 8260			
70132491006	TRIP BLANK	EPA 8260			
70132491007	STORAGE BLANK	EPA 8260			
70132491001	NNU PLCRS	SM22 2120B	162526		
70132491002	NNU SLCRS	SM22 2120B	162526		
70132491003	ONU SLCRS	SM22 2120B	162526		
70132491004	SA SLCRS	SM22 2120B	162526		
70132491005	EQUIPMENT BLANK	SM22 2120B	162526		
70132491001	NNU PLCRS	SM22 2320B	163705		
70132491002	NNU SLCRS	SM22 2320B	163705		
70132491003	ONU SLCRS	SM22 2320B	163705		
70132491004	SA SLCRS	SM22 2320B	163705		
70132491005	EQUIPMENT BLANK	SM22 2320B	163705		
70132491001	NNU PLCRS	SM22 2340C	164981		
70132491002	NNU SLCRS	SM22 2340C	164981		
70132491003	ONU SLCRS	SM22 2340C	164981		
70132491004	SA SLCRS	SM22 2340C	164981		
70132491005	EQUIPMENT BLANK	SM22 2340C	164981		
70132491001	NNU PLCRS	SM22 2540C	163053		
70132491002	NNU SLCRS	SM22 2540C	163053		
70132491003	ONU SLCRS	SM22 2540C	163053		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
70132491004	SA SLCRS	SM22 2540C	163053		
70132491005	EQUIPMENT BLANK	SM22 2540C	163053		
70132491001	NNU PLCRS	SM22 3500-Cr B	162457		
70132491002	NNU SLCRS	SM22 3500-Cr B	162457		
70132491003	ONU SLCRS	SM22 3500-Cr B	162457		
70132491004	SA SLCRS	SM22 3500-Cr B	162457		
70132491005	EQUIPMENT BLANK	SM22 3500-Cr B	162457		
70132491001	NNU PLCRS	EPA 410.4	163807	EPA 410.4	163853
70132491002	NNU SLCRS	EPA 410.4	163807	EPA 410.4	163853
70132491003	ONU SLCRS	EPA 410.4	163807	EPA 410.4	163853
70132491004	SA SLCRS	EPA 410.4	163807	EPA 410.4	163853
70132491005	EQUIPMENT BLANK	EPA 410.4	163807	EPA 410.4	163853
70132491001	NNU PLCRS	SM22 5210B	162564	SM22 5210B	163385
70132491002	NNU SLCRS	SM22 5210B	162564	SM22 5210B	163385
70132491003	ONU SLCRS	SM22 5210B	162564	SM22 5210B	163385
70132491004	SA SLCRS	SM22 5210B	162564	SM22 5210B	163385
70132491005	EQUIPMENT BLANK	SM22 5210B	162564	SM22 5210B	163385
70132491001	NNU PLCRS	EPA 9030B	163044	EPA 9034	163151
70132491002	NNU SLCRS	EPA 9030B	163044	EPA 9034	163151
70132491003	ONU SLCRS	EPA 9030B	163259	EPA 9034	163387
70132491004	SA SLCRS	EPA 9030B	163259	EPA 9034	163387
70132491005	EQUIPMENT BLANK	EPA 9030B	163259	EPA 9034	163387
70132491001	NNU PLCRS	EPA 300.0	163757		
70132491002	NNU SLCRS	EPA 300.0	163757		
70132491003	ONU SLCRS	EPA 300.0	163757		
70132491004	SA SLCRS	EPA 300.0	163757		
70132491005	EQUIPMENT BLANK	EPA 300.0	163757		
70132491001	NNU PLCRS	EPA 351.2	163792	EPA 351.2	163826
70132491002	NNU SLCRS	EPA 351.2	163792	EPA 351.2	163826
70132491003	ONU SLCRS	EPA 351.2	163792	EPA 351.2	163826
70132491004	SA SLCRS	EPA 351.2	163792	EPA 351.2	163826
70132491005	EQUIPMENT BLANK	EPA 351.2	163792	EPA 351.2	163826
70132491001	NNU PLCRS	EPA 353.2	162441		
70132491002	NNU SLCRS	EPA 353.2	162441		
70132491003	ONU SLCRS	EPA 353.2	162441		
70132491004	SA SLCRS	EPA 353.2	162441		
70132491005	EQUIPMENT BLANK	EPA 353.2	162441		
70132491001	NNU PLCRS	EPA 353.2	162438		
70132491002	NNU SLCRS	EPA 353.2	162438		
70132491003	ONU SLCRS	EPA 353.2	162438		
70132491004	SA SLCRS	EPA 353.2	162438		
70132491005	EQUIPMENT BLANK	EPA 353.2	162438		
70132491001	NNU PLCRS	EPA 420.1	163749	EPA 420.1	163842
70132491002	NNU SLCRS	EPA 420.1	163749	EPA 420.1	163842

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: LEACHATE BASELINE 5/28
Pace Project No.: 70132491

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
70132491003	**ONU SLCRS**	EPA 420.1	163749	EPA 420.1	163842
70132491004	**SA SLCRS**	EPA 420.1	163749	EPA 420.1	163842
70132491005	**EQUIPMENT BLANK**	EPA 420.1	163749	EPA 420.1	163842
70132491001	**NNU PLCRS**	SM22 4500 NH3 H	164272		
70132491002	**NNU SLCRS**	SM22 4500 NH3 H	164272		
70132491003	**ONU SLCRS**	SM22 4500 NH3 H	164272		
70132491004	**SA SLCRS**	SM22 4500 NH3 H	164272		
70132491005	**EQUIPMENT BLANK**	SM22 4500 NH3 H	164275		
70132491001	**NNU PLCRS**	EPA 9010C	163670	EPA 9014 Total Cyanide	163697
70132491002	**NNU SLCRS**	EPA 9010C	163670	EPA 9014 Total Cyanide	163697
70132491003	**ONU SLCRS**	EPA 9010C	163670	EPA 9014 Total Cyanide	163697
70132491004	**SA SLCRS**	EPA 9010C	163670	EPA 9014 Total Cyanide	163697
70132491005	**EQUIPMENT BLANK**	EPA 9010C	163670	EPA 9014 Total Cyanide	163697
70132491001	**NNU PLCRS**	EPA 9060A	163666		
70132491002	**NNU SLCRS**	EPA 9060A	163666		
70132491003	**ONU SLCRS**	EPA 9060A	163666		
70132491004	**SA SLCRS**	EPA 9060A	163666		
70132491005	**EQUIPMENT BLANK**	EPA 9060A	163666		

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Re

The Chain-of-Custody is a LEGAL DOCUMENT. All releva

WO# : 70132491

70132491

1

Section A	Section B	Section C
Required Client Information:	**Required Project Information:**	**Invoice Information:**
Company: Town of Babylon	Report To: Joe Guarino	Attention:
Address: 281 Phelps Lane	Copy To:	Company Name:
North Babylon, NY 11703		Address:
Email: jguarino@townofbabylon.com	Purchase Order #:	Pace Quote:
Phone: 631-422-7640 Fax	Project Name: Leachates Baseline 360	Pace Project Manager: jennifer.aracri@pacelabs.com,
Requested Due Date:	Project #:	Pace Profile #: 5271

Regulatory Agency
State / Location
NY

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Part 360 VOA	TAL Metals +B & Hardness	BOD,Br,Cl,SO4,Color,Cr+6	No2,ALK,TDS	COD,NH3,NO3,TKN,Phenols	TOC	Cyanide	Sulfide	1,4 Dioxane	PFAS by 537	Residual Chlorine (Y/N)
1	NNU PLCRS	WT				5/28/20	1320	N											X	X	X	X	X	X	X	X	X	X	
2	NNU SLCRS	WT					1340	N											X	X	X	X	X	X	X	X	X	X	
3	ONU SLCRS	WT					1350	N											X	X	X	X	X	X	X	X	X	X	
4	SA SLCRS	WT					1120	N											X	X	X	X	X	X	X	X	X	X	
5	Equipment Blank	WT					1130	N											X	X	X	X	X	X	X	X	X	X	
6	MSD ONU - SLCRS	WT					1352	2											X										
7	MS ONU - SLCRS	WT					1352	2											X										
8	Trip Blank	WT				5/28/20	LAB	2											X										
9																													
10																													
11																													
12																													

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Part 360 Baseline Leachates	Brian Nicholls / Zion	5/29/20	1500	Pace LI	5/29	1542	1.3 4C N Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Brian Nicholls

SIGNATURE of SAMPLER: [signature]

DATE Signed: 5/29/2020

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
1.3	4C	N	Y

Pace Analytical

Sample Condition Upon Receipt

WO# : 70132491

PM: JSA Due Date: 06/11/20

CLIENT: BAB-ECO

Client Name: TOWN OF BABYLON Proje

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☒ Client ☐ Commercial ☐ Pace ☐ Other

Tracking #:

Custody Seal on Cooler/Box Present: ☐ Yes ☒ No Seals intact: ☐ Yes ☑ No

Temperature Blank Present: ☐ Yes ☑ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ Ziploc ☑ None ☐ Other

Type of Ice: (Wet) Blue None

Thermometer Used: TH091 Correction Factor: +0.2

☐ Samples on ice, cooling process has begun

Cooler Temperature (°C): 1.3 Cooler Temperature Corrected (°C): 1.5

Date/Time 5035A kits placed in freezer

Temp should be above freezing to 6.0°C

USDA Regulated Soil (☐ N/A, water sample) Date and Initials of person examining contents: KW 5/28/20

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check map)? ☐ YES ☐ NO

Did samples orignate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-LI-C-010) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present:	☑Yes	☐No		1.
Chain of Custody Filled Out:	☑Yes	☐No		2.
Chain of Custody Relinquished:	☑Yes	☐No		3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No		5.
Short Hold Time Analysis (<72hr):	☑Yes	☐No		6.
Rush Turn Around Time Requested:	☐Yes	☑No		7.
Sufficient Volume: (Triple volume provided for MS/MSD)	☑Yes	☐No		8.
Correct Containers Used:	☑Yes	☐No		9.
-Pace Containers Used:	☑Yes	☐No		
Containers Intact:	☑Yes	☐No		10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix SL (WT) OIL	☑Yes	☐No		12.
All containers needing preservation have been checked pH paper Lot # HC495032	☑Yes	☐No	☐N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl, NaOH>9 Sulfide, NAOH>12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water). Per Method, VOA pH is checked after analysis	☑Yes	☐No	☐N/A	Initial when completed: / Lot # of added preservative: / Date/Time preservative added:
Samples checked for dechlorination: KI starch test strips Lot # Residual chlorine strips Lot #	☐Yes	☐No	☑N/A	14. Positive for Res. Chlorine? Y N
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blank Present:	☑Yes	☐No	☐N/A	16.
Trip Blank Custody Seals Present	☐Yes	☑No	☐N/A	
Pace Trip Blank Lot # (if applicable):				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

* PM (Project Manager) review is documented electronically in LIMS.

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-61353-1
Laboratory Sample Delivery Group: 70132491
Client Project/Site: LEACHATE BASELINE 5/28

For:
Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, New York 11747

Attn: Jennifer Aracri

Cesar C. Cortes

Authorized for release by:
6/10/2020 8:47:34 AM

Cesar Cortes, Project Manager I
(916)374-4316
cesar.cortes@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 320-61353-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Receipt

The samples were received on 6/2/2020 12:34 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.4º C and 2.8º C.

Method 537 (modified)

Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS: ONU SLCRS (320-61353-3). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-8:2 FTS: ONU SLCRS (320-61353-3) and SA SLCRS (320-61353-4). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 320-383172.

The following sample contained non-settable sediment/particulate which clogged the cartridge during extraction: NNU PLCRS (320-61353-1), preparation batch 320-383172.

The following sample was cloud-like in appearance after the final volume stage: SA SLCRS (320-61353-4), preparation batch 320-383172.

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

Detection Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Client Sample ID: NNU PLCRS — Lab Sample ID: 320-61353-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	270		1.7	0.30	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	130		1.7	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	190		1.7	0.51	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid	31		1.7	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	43		1.7	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	2.5		1.7	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.66	J	1.7	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	230		1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	14	B	1.7	0.15	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.29	J	1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	12		1.7	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.70	J B	1.7	0.30	ng/L	1		537 (modified)	Total/NA
6:2 FTS	4.3	J	17	1.7	ng/L	1		537 (modified)	Total/NA

Client Sample ID: NNU SLCRS — Lab Sample ID: 320-61353-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	270		2.0	0.35	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	130		2.0	0.48	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	190		2.0	0.57	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid	30		2.0	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	36		2.0	0.84	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.8	J	2.0	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.72	J	2.0	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	240		2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	12	B	2.0	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	9.1		2.0	0.53	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	3.1	B	2.0	0.35	ng/L	1		537 (modified)	Total/NA
6:2 FTS	3.5	J	20	2.0	ng/L	1		537 (modified)	Total/NA

Client Sample ID: ONU SLCRS — Lab Sample ID: 320-61353-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	73		2.0	0.35	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	43		2.0	0.50	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	60		2.0	0.59	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid	25		2.0	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	44		2.0	0.86	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	7.3		2.0	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.1		2.0	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	51		2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	13	B	2.0	0.17	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.42	J	2.0	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	32		2.0	0.55	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.76	J B	2.0	0.35	ng/L	1		537 (modified)	Total/NA

Client Sample ID: SA SLCRS — Lab Sample ID: 320-61353-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	76		2.0	0.35	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	82		2.0	0.49	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SA SLCRS (Continued) — Lab Sample ID: 320-61353-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	130		2.0	0.58	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid	44		2.0	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	110		2.0	0.85	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	11		2.0	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	19		2.0	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.95	J	2.0	0.55	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	36		2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	46	B	2.0	0.17	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	2.8		2.0	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	110		2.0	0.54	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.38	J B	2.0	0.35	ng/L	1		537 (modified)	Total/NA
6:2 FTS	11	J	20	2.0	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EQUIPMENT BLANK — Lab Sample ID: 320-61353-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	0.44	J	1.8	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.27	J B	1.8	0.15	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Client Sample ID: NNU PLCRS
Date Collected: 05/28/20 13:20
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-1
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**270**		1.7	0.30	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluoropentanoic acid (PFPeA)	**130**		1.7	0.43	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorohexanoic acid (PFHxA)	**190**		1.7	0.51	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluoroheptanoic acid	**31**		1.7	0.22	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorooctanoic acid (PFOA)	**43**		1.7	0.74	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorononanoic acid (PFNA)	**2.5**		1.7	0.24	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorodecanoic acid (PFDA)	**0.66**	**J**	1.7	0.27	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.96	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.25	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorobutanesulfonic acid (PFBS)	**230**		1.7	0.17	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorohexanesulfonic acid (PFHxS)	**14**	**B**	1.7	0.15	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.29**	**J**	1.7	0.17	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorooctanesulfonic acid (PFOS)	**12**		1.7	0.47	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.28	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorooctanesulfonamide (FOSA)	**0.70**	**J B**	1.7	0.30	ng/L		06/03/20 18:42	06/05/20 06:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	2.7	ng/L		06/03/20 18:42	06/05/20 06:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	1.7	ng/L		06/03/20 18:42	06/05/20 06:22	1
6:2 FTS	**4.3**	**J**	17	1.7	ng/L		06/03/20 18:42	06/05/20 06:22	1
8:2 FTS	ND		17	1.7	ng/L		06/03/20 18:42	06/05/20 06:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*47*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C5 PFPeA	*74*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C2 PFHxA	*79*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C4 PFHpA	*85*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C4 PFOA	*86*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C5 PFNA	*88*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C2 PFDA	*75*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C2 PFUnA	*54*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C2 PFDoA	*57*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C2 PFTeDA	*42*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C3 PFBS	*80*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
18O2 PFHxS	*85*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C4 PFOS	*71*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C8 FOSA	*66*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
d3-NMeFOSAA	*53*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
d5-NEtFOSAA	*53*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
M2-6:2 FTS	*102*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
M2-8:2 FTS	*65*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Client Sample ID: NNU SLCRS

Date Collected: 05/28/20 13:40
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-2

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**270**		2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluoropentanoic acid (PFPeA)	**130**		2.0	0.48	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorohexanoic acid (PFHxA)	**190**		2.0	0.57	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluoroheptanoic acid	**30**		2.0	0.25	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorooctanoic acid (PFOA)	**36**		2.0	0.84	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorononanoic acid (PFNA)	**1.8**	**J**	2.0	0.27	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorodecanoic acid (PFDA)	**0.72**	**J**	2.0	0.31	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorobutanesulfonic acid (PFBS)	**240**		2.0	0.20	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorohexanesulfonic acid (PFHxS)	**12**	**B**	2.0	0.17	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorooctanesulfonic acid (PFOS)	**9.1**		2.0	0.53	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorooctanesulfonamide (FOSA)	**3.1**	**B**	2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		06/03/20 18:42	06/05/20 06:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		06/03/20 18:42	06/05/20 06:31	1
6:2 FTS	**3.5**	**J**	20	2.0	ng/L		06/03/20 18:42	06/05/20 06:31	1
8:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 06:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*54*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C5 PFPeA	*85*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C2 PFHxA	*94*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C4 PFHpA	*99*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C4 PFOA	*98*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C5 PFNA	*101*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C2 PFDA	*89*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C2 PFUnA	*88*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C2 PFDoA	*98*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C2 PFTeDA	*40*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C3 PFBS	*91*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
18O2 PFHxS	*103*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C4 PFOS	*92*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C8 FOSA	*81*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
d3-NMeFOSAA	*64*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
d5-NEtFOSAA	*69*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
M2-6:2 FTS	*112*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
M2-8:2 FTS	*75*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Client Sample ID: ONU SLCRS
Date Collected: 05/28/20 13:50
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-3
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**73**		2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluoropentanoic acid (PFPeA)	**43**		2.0	0.50	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorohexanoic acid (PFHxA)	**60**		2.0	0.59	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluoroheptanoic acid	**25**		2.0	0.25	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorooctanoic acid (PFOA)	**44**		2.0	0.86	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorononanoic acid (PFNA)	**7.3**		2.0	0.27	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorodecanoic acid (PFDA)	**2.1**		2.0	0.31	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.56	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorobutanesulfonic acid (PFBS)	**51**		2.0	0.20	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorohexanesulfonic acid (PFHxS)	**13**	**B**	2.0	0.17	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.42**	**J**	2.0	0.19	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorooctanesulfonic acid (PFOS)	**32**		2.0	0.55	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorooctanesulfonamide (FOSA)	**0.76**	**J B**	2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		06/03/20 18:42	06/05/20 06:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		06/03/20 18:42	06/05/20 06:41	1
6:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 06:41	1
8:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 06:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*43*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C5 PFPeA	*65*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C2 PFHxA	*83*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C4 PFHpA	*92*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C4 PFOA	*96*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C5 PFNA	*100*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C2 PFDA	*104*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C2 PFUnA	*94*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C2 PFDoA	*86*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C2 PFTeDA	*77*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C3 PFBS	*79*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
18O2 PFHxS	*93*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C4 PFOS	*87*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C8 FOSA	*59*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
d3-NMeFOSAA	*88*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
d5-NEtFOSAA	*98*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
M2-6:2 FTS	*186*	**5*	*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
M2-8:2 FTS	*153*	**5*	*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Client Sample ID: SA SLCRS
Date Collected: 05/28/20 11:20
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-4
Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**76**		2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluoropentanoic acid (PFPeA)	**82**		2.0	0.49	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorohexanoic acid (PFHxA)	**130**		2.0	0.58	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluoroheptanoic acid	**44**		2.0	0.25	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorooctanoic acid (PFOA)	**110**		2.0	0.85	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorononanoic acid (PFNA)	**11**		2.0	0.27	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorodecanoic acid (PFDA)	**19**		2.0	0.31	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorododecanoic acid (PFDoA)	**0.95**	**J**	2.0	0.55	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorobutanesulfonic acid (PFBS)	**36**		2.0	0.20	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorohexanesulfonic acid (PFHxS)	**46**	**B**	2.0	0.17	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.8**		2.0	0.19	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorooctanesulfonic acid (PFOS)	**110**		2.0	0.54	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorooctanesulfonamide (FOSA)	**0.38**	**J B**	2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		06/03/20 18:42	06/05/20 06:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		06/03/20 18:42	06/05/20 06:50	1
6:2 FTS	**11**	**J**	20	2.0	ng/L		06/03/20 18:42	06/05/20 06:50	1
8:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 06:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*44*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C5 PFPeA	*57*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C2 PFHxA	*64*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C4 PFHpA	*75*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C4 PFOA	*78*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C5 PFNA	*87*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C2 PFDA	*93*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C2 PFUnA	*98*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C2 PFDoA	*95*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C2 PFTeDA	*81*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C3 PFBS	*62*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
18O2 PFHxS	*75*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C4 PFOS	*68*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C8 FOSA	*61*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
d3-NMeFOSAA	*139*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
d5-NEtFOSAA	*149*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
M2-6:2 FTS	*132*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
M2-8:2 FTS	*280*	**5*	*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Client Sample ID: EQUIPMENT BLANK

Date Collected: 05/28/20 11:30
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-5

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**0.44**	**J**	1.8	0.31	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.44	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluoroheptanoic acid	ND		1.8	0.22	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorohexanesulfonic acid (PFHxS)	**0.27**	**J B**	1.8	0.15	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.31	ng/L		06/03/20 18:42	06/05/20 06:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8	ng/L		06/03/20 18:42	06/05/20 06:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.7	ng/L		06/03/20 18:42	06/05/20 06:59	1
6:2 FTS	ND		18	1.8	ng/L		06/03/20 18:42	06/05/20 06:59	1
8:2 FTS	ND		18	1.8	ng/L		06/03/20 18:42	06/05/20 06:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*117*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C5 PFPeA	*124*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C2 PFHxA	*126*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C4 PFHpA	*124*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C4 PFOA	*133*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C5 PFNA	*132*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C2 PFDA	*133*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C2 PFUnA	*116*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C2 PFDoA	*125*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C2 PFTeDA	*103*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C3 PFBS	*118*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
18O2 PFHxS	*121*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C4 PFOS	*117*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C8 FOSA	*107*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
d3-NMeFOSAA	*99*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
d5-NEtFOSAA	*105*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
M2-6:2 FTS	*129*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
M2-8:2 FTS	*120*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

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)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-61353-1	NNU PLCRS	47	74	79	85	86	88	75	54
320-61353-2	NNU SLCRS	54	85	94	99	98	101	89	88
320-61353-3	ONU SLCRS	43	65	83	92	96	100	104	94
320-61353-4	SA SLCRS	44	57	64	75	78	87	93	98
320-61353-5	EQUIPMENT BLANK	117	124	126	124	133	132	133	116
LCS 320-383172/2-A	Lab Control Sample	82	91	97	95	99	104	107	103
LCSD 320-383172/3-A	Lab Control Sample Dup	85	91	93	90	97	97	98	95
MB 320-383172/1-A	Method Blank	78	85	87	87	89	99	90	79

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
320-61353-1	NNU PLCRS	57	42	80	85	71	66	53	53
320-61353-2	NNU SLCRS	98	40	91	103	92	81	64	69
320-61353-3	ONU SLCRS	86	77	79	93	87	59	88	98
320-61353-4	SA SLCRS	95	81	62	75	68	61	139	149
320-61353-5	EQUIPMENT BLANK	125	103	118	121	117	107	99	105
LCS 320-383172/2-A	Lab Control Sample	112	109	92	105	105	102	99	112
LCSD 320-383172/3-A	Lab Control Sample Dup	89	77	92	90	89	83	81	80
MB 320-383172/1-A	Method Blank	102	88	81	85	83	81	73	81

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
320-61353-1	NNU PLCRS	102	65
320-61353-2	NNU SLCRS	112	75
320-61353-3	ONU SLCRS	186 *5	153 *5
320-61353-4	SA SLCRS	132	280 *5
320-61353-5	EQUIPMENT BLANK	129	120
LCS 320-383172/2-A	Lab Control Sample	100	117
LCSD 320-383172/3-A	Lab Control Sample Dup	92	92
MB 320-383172/1-A	Method Blank	86	90

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M262FTS = M2-6:2 FTS

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

M282FTS = M2-8:2 FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-383172/1-A
Matrix: Water
Analysis Batch: 383803

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 383172

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	ND		2.0	0.35	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluoroheptanoic acid	ND		2.0	0.25	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorohexanesulfonic acid (PFHxS)	0.299	J	2.0	0.17	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorooctanesulfonamide (FOSA)	0.409	J	2.0	0.35	ng/L		06/03/20 18:42	06/05/20 05:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		06/03/20 18:42	06/05/20 05:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		06/03/20 18:42	06/05/20 05:55	1
6:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 05:55	1
8:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 05:55	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*78*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C5 PFPeA	*85*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C2 PFHxA	*87*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C4 PFHpA	*87*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C4 PFOA	*89*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C5 PFNA	*99*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C2 PFDA	*90*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C2 PFUnA	*79*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C2 PFDoA	*102*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C2 PFTeDA	*88*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C3 PFBS	*81*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
18O2 PFHxS	*85*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C4 PFOS	*83*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C8 FOSA	*81*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
d3-NMeFOSAA	*73*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
d5-NEtFOSAA	*81*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
M2-6:2 FTS	*86*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
M2-8:2 FTS	*90*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*

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

Lab Sample ID: LCS 320-383172/2-A
Matrix: Water
Analysis Batch: 384478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 383172

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid	40.0	41.6		ng/L		104	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	36.7		ng/L		92	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	36.2		ng/L		90	73 - 133
Perfluoroheptanoic acid	40.0	39.4		ng/L		99	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	35.6		ng/L		89	70 - 130
Perfluorononanoic acid (PFNA)	40.0	37.7		ng/L		94	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	38.9		ng/L		97	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	40.3		ng/L		101	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	36.1		ng/L		90	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	39.0		ng/L		97	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	34.9		ng/L		87	70 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	35.6		ng/L		101	67 - 127
Perfluorohexanesulfonic acid (PFHxS)	36.4	29.2		ng/L		80	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	35.6		ng/L		94	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	33.8		ng/L		91	70 - 130
Perfluorodecanesulfonic acid (PFDS)	38.6	33.5		ng/L		87	71 - 131
Perfluorooctanesulfonamide (FOSA)	40.0	37.2		ng/L		93	73 - 133
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	37.4		ng/L		94	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	35.5		ng/L		89	76 - 136
6:2 FTS	37.9	37.1		ng/L		98	59 - 175
8:2 FTS	38.3	34.4		ng/L		90	75 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*82*		*25 - 150*
13C5 PFPeA	*91*		*25 - 150*
13C2 PFHxA	*97*		*25 - 150*
13C4 PFHpA	*95*		*25 - 150*
13C4 PFOA	*99*		*25 - 150*
13C5 PFNA	*104*		*25 - 150*
13C2 PFDA	*107*		*25 - 150*
13C2 PFUnA	*103*		*25 - 150*
13C2 PFDoA	*112*		*25 - 150*
13C2 PFTeDA	*109*		*25 - 150*
13C3 PFBS	*92*		*25 - 150*
18O2 PFHxS	*105*		*25 - 150*
13C4 PFOS	*105*		*25 - 150*
13C8 FOSA	*102*		*25 - 150*
d3-NMeFOSAA	*99*		*25 - 150*
d5-NEtFOSAA	*112*		*25 - 150*

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

Lab Sample ID: LCS 320-383172/2-A
Matrix: Water
Analysis Batch: 384478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 383172

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-6:2 FTS	*100*		*25 - 150*
M2-8:2 FTS	*117*		*25 - 150*

Lab Sample ID: LCSD 320-383172/3-A
Matrix: Water
Analysis Batch: 383803

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 383172

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid			40.0	44.4		ng/L		111	76 - 136	6	30
Perfluoropentanoic acid (PFPeA)			40.0	39.7		ng/L		99	71 - 131	8	30
Perfluorohexanoic acid (PFHxA)			40.0	39.3		ng/L		98	73 - 133	8	30
Perfluoroheptanoic acid			40.0	43.6		ng/L		109	72 - 132	10	30
Perfluorooctanoic acid (PFOA)			40.0	39.0		ng/L		98	70 - 130	9	30
Perfluorononanoic acid (PFNA)			40.0	39.0		ng/L		98	75 - 135	3	30
Perfluorodecanoic acid (PFDA)			40.0	38.7		ng/L		97	76 - 136	0	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.8		ng/L		100	68 - 128	1	30
Perfluorododecanoic acid (PFDoA)			40.0	36.0		ng/L		90	71 - 131	0	30
Perfluorotridecanoic acid (PFTriA)			40.0	38.8		ng/L		97	71 - 131	0	30
Perfluorotetradecanoic acid (PFTeA)			40.0	44.5		ng/L		111	70 - 130	24	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.1		ng/L		105	67 - 127	4	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.6		ng/L		90	59 - 119	11	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.0		ng/L		102	76 - 136	9	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.5		ng/L		104	70 - 130	13	30
Perfluorodecanesulfonic acid (PFDS)			38.6	35.4		ng/L		92	71 - 131	6	30
Perfluorooctanesulfonamide (FOSA)			40.0	41.9		ng/L		105	73 - 133	12	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	41.3		ng/L		103	76 - 136	10	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			40.0	38.0		ng/L		95	76 - 136	7	30
6:2 FTS			37.9	40.8		ng/L		107	59 - 175	9	30
8:2 FTS			38.3	40.5		ng/L		106	75 - 135	16	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFBA	*85*		*25 - 150*
13C5 PFPeA	*91*		*25 - 150*
13C2 PFHxA	*93*		*25 - 150*
13C4 PFHpA	*90*		*25 - 150*
13C4 PFOA	*97*		*25 - 150*
13C5 PFNA	*97*		*25 - 150*
13C2 PFDA	*98*		*25 - 150*
13C2 PFUnA	*95*		*25 - 150*
13C2 PFDoA	*89*		*25 - 150*

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

Lab Sample ID: LCSD 320-383172/3-A
Matrix: Water
Analysis Batch: 383803

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 383172

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C2 PFTeDA	77		25 - 150
13C3 PFBS	92		25 - 150
18O2 PFHxS	90		25 - 150
13C4 PFOS	89		25 - 150
13C8 FOSA	83		25 - 150
d3-NMeFOSAA	81		25 - 150
d5-NEtFOSAA	80		25 - 150
M2-6:2 FTS	92		25 - 150
M2-8:2 FTS	92		25 - 150

QC Association Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

LCMS

Prep Batch: 383172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-61353-1	NNU PLCRS	Total/NA	Water	3535	
320-61353-2	NNU SLCRS	Total/NA	Water	3535	
320-61353-3	ONU SLCRS	Total/NA	Water	3535	
320-61353-4	SA SLCRS	Total/NA	Water	3535	
320-61353-5	EQUIPMENT BLANK	Total/NA	Water	3535	
MB 320-383172/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-383172/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-383172/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 383803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-61353-1	NNU PLCRS	Total/NA	Water	537 (modified)	383172
320-61353-2	NNU SLCRS	Total/NA	Water	537 (modified)	383172
320-61353-3	ONU SLCRS	Total/NA	Water	537 (modified)	383172
320-61353-4	SA SLCRS	Total/NA	Water	537 (modified)	383172
320-61353-5	EQUIPMENT BLANK	Total/NA	Water	537 (modified)	383172
MB 320-383172/1-A	Method Blank	Total/NA	Water	537 (modified)	383172
LCSD 320-383172/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	383172

Analysis Batch: 384478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-383172/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	383172

Lab Chronicle

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Client Sample ID: NNU PLCRS
Date Collected: 05/28/20 13:20
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			286.9 mL	10.00 mL	383172	06/03/20 18:42	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			383803	06/05/20 06:22	D1R	TAL SAC

Client Sample ID: NNU SLCRS
Date Collected: 05/28/20 13:40
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253.6 mL	10.00 mL	383172	06/03/20 18:42	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			383803	06/05/20 06:31	D1R	TAL SAC

Client Sample ID: ONU SLCRS
Date Collected: 05/28/20 13:50
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			247.4 mL	10.00 mL	383172	06/03/20 18:42	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			383803	06/05/20 06:41	D1R	TAL SAC

Client Sample ID: SA SLCRS
Date Collected: 05/28/20 11:20
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251.3 mL	10.00 mL	383172	06/03/20 18:42	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			383803	06/05/20 06:50	D1R	TAL SAC

Client Sample ID: EQUIPMENT BLANK
Date Collected: 05/28/20 11:30
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			279.8 mL	10.00 mL	383172	06/03/20 18:42	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			383803	06/05/20 06:59	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	01-20-21
Arizona	State	AZ0708	08-11-20
Arkansas DEQ	State	19-042-0	06-17-20
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	07-01-21
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Illinois	NELAP	200060	03-17-21
Kansas	NELAP	E-10375	10-31-20
Louisiana	NELAP	01944	06-30-20
Maine	State	2018009	04-14-22
Michigan	State	9947	01-31-22
Nevada	State	CA000442020-1	07-31-20
New Hampshire	NELAP	2997	04-18-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-21
Oregon	NELAP	4040	01-29-21
Pennsylvania	NELAP	68-01272	03-31-21
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-21
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-20 *
West Virginia (DW)	State	9930C	12-31-20
Wyoming	State Program	8TMS-L	01-28-19 *

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

Method Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

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

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-61353-1	NNU PLCRS	Water	05/28/20 13:20	06/02/20 12:34	
320-61353-2	NNU SLCRS	Water	05/28/20 13:40	06/02/20 12:34	
320-61353-3	ONU SLCRS	Water	05/28/20 13:50	06/02/20 12:34	
320-61353-4	SA SLCRS	Water	05/28/20 11:20	06/02/20 12:34	
320-61353-5	EQUIPMENT BLANK	Water	05/28/20 11:30	06/02/20 12:34	

Chain of Custody

PASI New York Laboratory

Pace Analytical®
www.pacelabs.com

Workorder: 70132491 **Workorder Name:** LEACHATE BASELINE 5/28 **Results Requested By:** 6/11/2020

Report / Invoice To	Subcontract To
Jennifer Aracri Pace Analytical Melville 575 Broad Hollow Road Melville, NY 11747 Phone (631)694-3040 Email: jennifer.aracri@pacelabs.com	TA Eurofins-Sacramento 880 Riverside Pkwy West Sacramento, CA 95605 P.O. 70132491JSA

State of Sample Origin: NY

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	PFAS by 537	LAB USE ONLY
1	NNU PLCRS	5/28/2020 13:20	70132491001	Water		X	
2	NNU SLCRS	5/28/2020 13:40	70132491002	Water		X	
3	ONU SLCRS	5/28/2020 13:50	70132491003	Water		X	
4	SA SLCRS	5/28/2020 11:20	70132491004	Water		X	
5	EQUIPMENT BLANK	5/28/2020 11:30	70132491005	Water		X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	6/1/20 [illegible]	eta sac	06/02/20 925
2				
3				

Comments

Needs a Category B package with EQuIS EDDs

Cooler Temperature on Receipt 2-8 °C 2.4°C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

320-61353 Chain of Custody

Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 320-61353-1
SDG Number: 70132491

Login Number: 61353
List Number: 1
Creator: Guzman, Juan

List Source: Eurofins TestAmerica, Sacramento

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

eurofins | Environment Testing America

ANALYTICAL REPORT

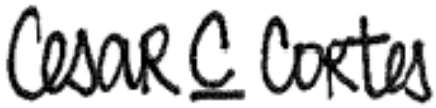
Job Number: 320-61353-1

SDG Number: 70132491

Job Description: LEACHATE BASELINE 5/28

For:
Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747

Attention: Jennifer Aracri



Approved for release.
Cesar C Cortes
Project Manager I
6/10/2020 8:49 AM

Cesar C Cortes, Project Manager I
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4316
cesar.cortes@testamericainc.com
06/10/2020

Table of Contents

Table of Contents

Receipt
The samples were received on 6/2/2020 12:34 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.4º C and 2.8º C.

Method 537 (modified)
Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-6:2 FTS: ONU SLCRS (320-61353-3). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for M2-8:2 FTS: ONU SLCRS (320-61353-3) and SA SLCRS (320-61353-4). Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with preparation batch 320-383172.

The following sample contained non-settable sediment/particulate which clogged the cartridge during extraction: NNU PLCRS (320-61353-1), preparation batch 320-383172.

The following sample was cloud-like in appearance after the final volume stage: SA SLCRS (320-61353-4), preparation batch 320-383172.

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

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-61353-1	NNU PLCRS	Water	05/28/20 13:20	06/02/20 12:34	
320-61353-2	NNU SLCRS	Water	05/28/20 13:40	06/02/20 12:34	
320-61353-3	ONU SLCRS	Water	05/28/20 13:50	06/02/20 12:34	
320-61353-4	SA SLCRS	Water	05/28/20 11:20	06/02/20 12:34	
320-61353-5	EQUIPMENT BLANK	Water	05/28/20 11:30	06/02/20 12:34	

Detection Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Client Sample ID: NNU PLCRS — Lab Sample ID: 320-61353-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	270		1.7	0.30	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	130		1.7	0.43	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	190		1.7	0.51	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid	31		1.7	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	43		1.7	0.74	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	2.5		1.7	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.66	J	1.7	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	230		1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	14	B	1.7	0.15	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.29	J	1.7	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	12		1.7	0.47	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.70	J B	1.7	0.30	ng/L	1		537 (modified)	Total/NA
6:2 FTS	4.3	J	17	1.7	ng/L	1		537 (modified)	Total/NA

Client Sample ID: NNU SLCRS — Lab Sample ID: 320-61353-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	270		2.0	0.35	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	130		2.0	0.48	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	190		2.0	0.57	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid	30		2.0	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	36		2.0	0.84	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	1.8	J	2.0	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	0.72	J	2.0	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	240		2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	12	B	2.0	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	9.1		2.0	0.53	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	3.1	B	2.0	0.35	ng/L	1		537 (modified)	Total/NA
6:2 FTS	3.5	J	20	2.0	ng/L	1		537 (modified)	Total/NA

Client Sample ID: ONU SLCRS — Lab Sample ID: 320-61353-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	73		2.0	0.35	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	43		2.0	0.50	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA)	60		2.0	0.59	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid	25		2.0	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	44		2.0	0.86	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	7.3		2.0	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	2.1		2.0	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	51		2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	13	B	2.0	0.17	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.42	J	2.0	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	32		2.0	0.55	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.76	J B	2.0	0.35	ng/L	1		537 (modified)	Total/NA

Client Sample ID: SA SLCRS — Lab Sample ID: 320-61353-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	76		2.0	0.35	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	82		2.0	0.49	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SA SLCRS (Continued)

Lab Sample ID: 320-61353-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorohexanoic acid (PFHxA)	130		2.0	0.58	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid	44		2.0	0.25	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	110		2.0	0.85	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	11		2.0	0.27	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	19		2.0	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorododecanoic acid (PFDoA)	0.95	J	2.0	0.55	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	36		2.0	0.20	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	46	B	2.0	0.17	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	2.8		2.0	0.19	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	110		2.0	0.54	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	0.38	J B	2.0	0.35	ng/L	1		537 (modified)	Total/NA
6:2 FTS	11	J	20	2.0	ng/L	1		537 (modified)	Total/NA

Client Sample ID: EQUIPMENT BLANK

Lab Sample ID: 320-61353-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	0.44	J	1.8	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	0.27	J B	1.8	0.15	ng/L	1		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

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

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Client Sample ID: NNU PLCRS

Date Collected: 05/28/20 13:20
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**270**		1.7	0.30	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluoropentanoic acid (PFPeA)	**130**		1.7	0.43	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorohexanoic acid (PFHxA)	**190**		1.7	0.51	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluoroheptanoic acid	**31**		1.7	0.22	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorooctanoic acid (PFOA)	**43**		1.7	0.74	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorononanoic acid (PFNA)	**2.5**		1.7	0.24	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorodecanoic acid (PFDA)	**0.66**	**J**	1.7	0.27	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.96	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.25	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorobutanesulfonic acid (PFBS)	**230**		1.7	0.17	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorohexanesulfonic acid (PFHxS)	**14**	**B**	1.7	0.15	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.29**	**J**	1.7	0.17	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorooctanesulfonic acid (PFOS)	**12**		1.7	0.47	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.28	ng/L		06/03/20 18:42	06/05/20 06:22	1
Perfluorooctanesulfonamide (FOSA)	**0.70**	**J B**	1.7	0.30	ng/L		06/03/20 18:42	06/05/20 06:22	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	2.7	ng/L		06/03/20 18:42	06/05/20 06:22	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	1.7	ng/L		06/03/20 18:42	06/05/20 06:22	1
6:2 FTS	**4.3**	**J**	17	1.7	ng/L		06/03/20 18:42	06/05/20 06:22	1
8:2 FTS	ND		17	1.7	ng/L		06/03/20 18:42	06/05/20 06:22	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*47*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C5 PFPeA	*74*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C2 PFHxA	*79*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C4 PFHpA	*85*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C4 PFOA	*86*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C5 PFNA	*88*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C2 PFDA	*75*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C2 PFUnA	*54*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C2 PFDoA	*57*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C2 PFTeDA	*42*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C3 PFBS	*80*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
18O2 PFHxS	*85*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C4 PFOS	*71*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
13C8 FOSA	*66*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
d3-NMeFOSAA	*53*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
d5-NEtFOSAA	*53*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
M2-6:2 FTS	*102*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*
M2-8:2 FTS	*65*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:22*	*1*

Client Sample ID: NNU SLCRS

Date Collected: 05/28/20 13:40
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-2

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**270**		2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluoropentanoic acid (PFPeA)	**130**		2.0	0.48	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorohexanoic acid (PFHxA)	**190**		2.0	0.57	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluoroheptanoic acid	**30**		2.0	0.25	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorooctanoic acid (PFOA)	**36**		2.0	0.84	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorononanoic acid (PFNA)	**1.8**	**J**	2.0	0.27	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorodecanoic acid (PFDA)	**0.72**	**J**	2.0	0.31	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorobutanesulfonic acid (PFBS)	**240**		2.0	0.20	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorohexanesulfonic acid (PFHxS)	**12**	**B**	2.0	0.17	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorooctanesulfonic acid (PFOS)	**9.1**		2.0	0.53	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/03/20 18:42	06/05/20 06:31	1
Perfluorooctanesulfonamide (FOSA)	**3.1**	**B**	2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:31	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		06/03/20 18:42	06/05/20 06:31	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		06/03/20 18:42	06/05/20 06:31	1
6:2 FTS	**3.5**	**J**	20	2.0	ng/L		06/03/20 18:42	06/05/20 06:31	1
8:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 06:31	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*54*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C5 PFPeA	*85*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C2 PFHxA	*94*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C4 PFHpA	*99*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C4 PFOA	*98*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C5 PFNA	*101*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C2 PFDA	*89*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C2 PFUnA	*88*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C2 PFDoA	*98*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C2 PFTeDA	*40*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C3 PFBS	*91*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
18O2 PFHxS	*103*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C4 PFOS	*92*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
13C8 FOSA	*81*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
d3-NMeFOSAA	*64*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
d5-NEtFOSAA	*69*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
M2-6:2 FTS	*112*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*
M2-8:2 FTS	*75*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:31*	*1*

Client Sample ID: ONU SLCRS

Date Collected: 05/28/20 13:50
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-3

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**73**		2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluoropentanoic acid (PFPeA)	**43**		2.0	0.50	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorohexanoic acid (PFHxA)	**60**		2.0	0.59	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluoroheptanoic acid	**25**		2.0	0.25	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorooctanoic acid (PFOA)	**44**		2.0	0.86	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorononanoic acid (PFNA)	**7.3**		2.0	0.27	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorodecanoic acid (PFDA)	**2.1**		2.0	0.31	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.56	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorobutanesulfonic acid (PFBS)	**51**		2.0	0.20	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorohexanesulfonic acid (PFHxS)	**13**	**B**	2.0	0.17	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.42**	**J**	2.0	0.19	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorooctanesulfonic acid (PFOS)	**32**		2.0	0.55	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/03/20 18:42	06/05/20 06:41	1
Perfluorooctanesulfonamide (FOSA)	**0.76**	**J B**	2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:41	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		06/03/20 18:42	06/05/20 06:41	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		06/03/20 18:42	06/05/20 06:41	1
6:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 06:41	1
8:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 06:41	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*43*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C5 PFPeA	*65*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C2 PFHxA	*83*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C4 PFHpA	*92*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C4 PFOA	*96*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C5 PFNA	*100*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C2 PFDA	*104*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C2 PFUnA	*94*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C2 PFDoA	*86*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C2 PFTeDA	*77*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C3 PFBS	*79*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
18O2 PFHxS	*93*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C4 PFOS	*87*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
13C8 FOSA	*59*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
d3-NMeFOSAA	*88*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
d5-NEtFOSAA	*98*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
M2-6:2 FTS	*186*	**5*	*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*
M2-8:2 FTS	*153*	**5*	*25 - 150*	*06/03/20 18:42*	*06/05/20 06:41*	*1*

Client Sample ID: SA SLCRS

Date Collected: 05/28/20 11:20
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-4

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**76**		2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluoropentanoic acid (PFPeA)	**82**		2.0	0.49	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorohexanoic acid (PFHxA)	**130**		2.0	0.58	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluoroheptanoic acid	**44**		2.0	0.25	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorooctanoic acid (PFOA)	**110**		2.0	0.85	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorononanoic acid (PFNA)	**11**		2.0	0.27	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorodecanoic acid (PFDA)	**19**		2.0	0.31	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorododecanoic acid (PFDoA)	**0.95**	**J**	2.0	0.55	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorobutanesulfonic acid (PFBS)	**36**		2.0	0.20	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorohexanesulfonic acid (PFHxS)	**46**	**B**	2.0	0.17	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluoroheptanesulfonic Acid (PFHpS)	**2.8**		2.0	0.19	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorooctanesulfonic acid (PFOS)	**110**		2.0	0.54	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/03/20 18:42	06/05/20 06:50	1
Perfluorooctanesulfonamide (FOSA)	**0.38**	**J B**	2.0	0.35	ng/L		06/03/20 18:42	06/05/20 06:50	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		06/03/20 18:42	06/05/20 06:50	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		06/03/20 18:42	06/05/20 06:50	1
6:2 FTS	**11**	**J**	20	2.0	ng/L		06/03/20 18:42	06/05/20 06:50	1
8:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 06:50	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*44*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C5 PFPeA	*57*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C2 PFHxA	*64*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C4 PFHpA	*75*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C4 PFOA	*78*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C5 PFNA	*87*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C2 PFDA	*93*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C2 PFUnA	*98*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C2 PFDoA	*95*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C2 PFTeDA	*81*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C3 PFBS	*62*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
18O2 PFHxS	*75*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C4 PFOS	*68*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
13C8 FOSA	*61*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
d3-NMeFOSAA	*139*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
d5-NEtFOSAA	*149*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
M2-6:2 FTS	*132*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*
M2-8:2 FTS	*280*	**5*	*25 - 150*	*06/03/20 18:42*	*06/05/20 06:50*	*1*

Client Sample ID: EQUIPMENT BLANK

Date Collected: 05/28/20 11:30
Date Received: 06/02/20 12:34

Lab Sample ID: 320-61353-5

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**0.44**	**J**	1.8	0.31	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluoropentanoic acid (PFPeA)	ND		1.8	0.44	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluoroheptanoic acid	ND		1.8	0.22	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorooctanoic acid (PFOA)	ND		1.8	0.76	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorononanoic acid (PFNA)	ND		1.8	0.24	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorodecanoic acid (PFDA)	ND		1.8	0.28	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorohexanesulfonic acid (PFHxS)	**0.27**	**J B**	1.8	0.15	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29	ng/L		06/03/20 18:42	06/05/20 06:59	1
Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.31	ng/L		06/03/20 18:42	06/05/20 06:59	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8	ng/L		06/03/20 18:42	06/05/20 06:59	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.7	ng/L		06/03/20 18:42	06/05/20 06:59	1
6:2 FTS	ND		18	1.8	ng/L		06/03/20 18:42	06/05/20 06:59	1
8:2 FTS	ND		18	1.8	ng/L		06/03/20 18:42	06/05/20 06:59	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*117*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C5 PFPeA	*124*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C2 PFHxA	*126*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C4 PFHpA	*124*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C4 PFOA	*133*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C5 PFNA	*132*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C2 PFDA	*133*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C2 PFUnA	*116*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C2 PFDoA	*125*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C2 PFTeDA	*103*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C3 PFBS	*118*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
18O2 PFHxS	*121*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C4 PFOS	*117*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
13C8 FOSA	*107*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
d3-NMeFOSAA	*99*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
d5-NEtFOSAA	*105*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
M2-6:2 FTS	*129*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*
M2-8:2 FTS	*120*		*25 - 150*	*06/03/20 18:42*	*06/05/20 06:59*	*1*

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Method: 537 (modified) - Fluorinated Alkyl Substances

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-61353-1	NNU PLCRS	47	74	79	85	86	88	75	54
320-61353-2	NNU SLCRS	54	85	94	99	98	101	89	88
320-61353-3	ONU SLCRS	43	65	83	92	96	100	104	94
320-61353-4	SA SLCRS	44	57	64	75	78	87	93	98
320-61353-5	EQUIPMENT BLANK	117	124	126	124	133	132	133	116
LCS 320-383172/2-A	Lab Control Sample	82	91	97	95	99	104	107	103
LCSD 320-383172/3-A	Lab Control Sample Dup	85	91	93	90	97	97	98	95
MB 320-383172/1-A	Method Blank	78	85	87	87	89	99	90	79

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	C3PFBS	PFHxS	PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-61353-1	NNU PLCRS	57	42	80	85	71	66	53	53
320-61353-2	NNU SLCRS	98	40	91	103	92	81	64	69
320-61353-3	ONU SLCRS	86	77	79	93	87	59	88	98
320-61353-4	SA SLCRS	95	81	62	75	68	61	139	149
320-61353-5	EQUIPMENT BLANK	125	103	118	121	117	107	99	105
LCS 320-383172/2-A	Lab Control Sample	112	109	92	105	105	102	99	112
LCSD 320-383172/3-A	Lab Control Sample Dup	89	77	92	90	89	83	81	80
MB 320-383172/1-A	Method Blank	102	88	81	85	83	81	73	81

		Percent Isotope Dilution Recovery (Acceptance Limits)	
		M262FTS	M282FTS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)
320-61353-1	NNU PLCRS	102	65
320-61353-2	NNU SLCRS	112	75
320-61353-3	ONU SLCRS	186 *5	153 *5
320-61353-4	SA SLCRS	132	280 *5
320-61353-5	EQUIPMENT BLANK	129	120
LCS 320-383172/2-A	Lab Control Sample	100	117
LCSD 320-383172/3-A	Lab Control Sample Dup	92	92
MB 320-383172/1-A	Method Blank	86	90

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M262FTS = M2-6:2 FTS

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

M282FTS = M2-8:2 FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-383172/1-A
Matrix: Water
Analysis Batch: 383803

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 383172

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	ND		2.0	0.35	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluoroheptanoic acid	ND		2.0	0.25	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorohexanesulfonic acid (PFHxS)	0.299	J	2.0	0.17	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/03/20 18:42	06/05/20 05:55	1
Perfluorooctanesulfonamide (FOSA)	0.409	J	2.0	0.35	ng/L		06/03/20 18:42	06/05/20 05:55	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		06/03/20 18:42	06/05/20 05:55	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		06/03/20 18:42	06/05/20 05:55	1
6:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 05:55	1
8:2 FTS	ND		20	2.0	ng/L		06/03/20 18:42	06/05/20 05:55	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*78*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C5 PFPeA	*85*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C2 PFHxA	*87*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C4 PFHpA	*87*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C4 PFOA	*89*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C5 PFNA	*99*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C2 PFDA	*90*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C2 PFUnA	*79*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C2 PFDoA	*102*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C2 PFTeDA	*88*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C3 PFBS	*81*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
18O2 PFHxS	*85*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C4 PFOS	*83*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
13C8 FOSA	*81*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
d3-NMeFOSAA	*73*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
d5-NEtFOSAA	*81*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
M2-6:2 FTS	*86*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*
M2-8:2 FTS	*90*		*25 - 150*	*06/03/20 18:42*	*06/05/20 05:55*	*1*

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

Lab Sample ID: LCS 320-383172/2-A
Matrix: Water
Analysis Batch: 384478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 383172

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluorobutanoic acid			40.0	41.6		ng/L		104	76 - 136		
Perfluoropentanoic acid (PFPeA)			40.0	36.7		ng/L		92	71 - 131		
Perfluorohexanoic acid (PFHxA)			40.0	36.2		ng/L		90	73 - 133		
Perfluoroheptanoic acid			40.0	39.4		ng/L		99	72 - 132		
Perfluorooctanoic acid (PFOA)			40.0	35.6		ng/L		89	70 - 130		
Perfluorononanoic acid (PFNA)			40.0	37.7		ng/L		94	75 - 135		
Perfluorodecanoic acid (PFDA)			40.0	38.9		ng/L		97	76 - 136		
Perfluoroundecanoic acid (PFUnA)			40.0	40.3		ng/L		101	68 - 128		
Perfluorododecanoic acid (PFDoA)			40.0	36.1		ng/L		90	71 - 131		
Perfluorotridecanoic acid (PFTriA)			40.0	39.0		ng/L		97	71 - 131		
Perfluorotetradecanoic acid (PFTeA)			40.0	34.9		ng/L		87	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			35.4	35.6		ng/L		101	67 - 127		
Perfluorohexanesulfonic acid (PFHxS)			36.4	29.2		ng/L		80	59 - 119		
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	35.6		ng/L		94	76 - 136		
Perfluorooctanesulfonic acid (PFOS)			37.1	33.8		ng/L		91	70 - 130		
Perfluorodecanesulfonic acid (PFDS)			38.6	33.5		ng/L		87	71 - 131		
Perfluorooctanesulfonamide (FOSA)			40.0	37.2		ng/L		93	73 - 133		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	37.4		ng/L		94	76 - 136		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			40.0	35.5		ng/L		89	76 - 136		
6:2 FTS			37.9	37.1		ng/L		98	59 - 175		
8:2 FTS			38.3	34.4		ng/L		90	75 - 135		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*82*		*25 - 150*
13C5 PFPeA	*91*		*25 - 150*
13C2 PFHxA	*97*		*25 - 150*
13C4 PFHpA	*95*		*25 - 150*
13C4 PFOA	*99*		*25 - 150*
13C5 PFNA	*104*		*25 - 150*
13C2 PFDA	*107*		*25 - 150*
13C2 PFUnA	*103*		*25 - 150*
13C2 PFDoA	*112*		*25 - 150*
13C2 PFTeDA	*109*		*25 - 150*
13C3 PFBS	*92*		*25 - 150*
18O2 PFHxS	*105*		*25 - 150*
13C4 PFOS	*105*		*25 - 150*
13C8 FOSA	*102*		*25 - 150*
d3-NMeFOSAA	*99*		*25 - 150*
d5-NEtFOSAA	*112*		*25 - 150*

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

Lab Sample ID: LCS 320-383172/2-A
Matrix: Water
Analysis Batch: 384478

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 383172

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-6:2 FTS	100		25 - 150
M2-8:2 FTS	117		25 - 150

Lab Sample ID: LCSD 320-383172/3-A
Matrix: Water
Analysis Batch: 383803

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 383172

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid			40.0	44.4		ng/L		111	76 - 136	6	30
Perfluoropentanoic acid (PFPeA)			40.0	39.7		ng/L		99	71 - 131	8	30
Perfluorohexanoic acid (PFHxA)			40.0	39.3		ng/L		98	73 - 133	8	30
Perfluoroheptanoic acid			40.0	43.6		ng/L		109	72 - 132	10	30
Perfluorooctanoic acid (PFOA)			40.0	39.0		ng/L		98	70 - 130	9	30
Perfluorononanoic acid (PFNA)			40.0	39.0		ng/L		98	75 - 135	3	30
Perfluorodecanoic acid (PFDA)			40.0	38.7		ng/L		97	76 - 136	0	30
Perfluoroundecanoic acid (PFUnA)			40.0	39.8		ng/L		100	68 - 128	1	30
Perfluorododecanoic acid (PFDoA)			40.0	36.0		ng/L		90	71 - 131	0	30
Perfluorotridecanoic acid (PFTriA)			40.0	38.8		ng/L		97	71 - 131	0	30
Perfluorotetradecanoic acid (PFTeA)			40.0	44.5		ng/L		111	70 - 130	24	30
Perfluorobutanesulfonic acid (PFBS)			35.4	37.1		ng/L		105	67 - 127	4	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.6		ng/L		90	59 - 119	11	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.0		ng/L		102	76 - 136	9	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.5		ng/L		104	70 - 130	13	30
Perfluorodecanesulfonic acid (PFDS)			38.6	35.4		ng/L		92	71 - 131	6	30
Perfluorooctanesulfonamide (FOSA)			40.0	41.9		ng/L		105	73 - 133	12	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	41.3		ng/L		103	76 - 136	10	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			40.0	38.0		ng/L		95	76 - 136	7	30
6:2 FTS			37.9	40.8		ng/L		107	59 - 175	9	30
8:2 FTS			38.3	40.5		ng/L		106	75 - 135	16	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFBA	85		25 - 150
13C5 PFPeA	91		25 - 150
13C2 PFHxA	93		25 - 150
13C4 PFHpA	90		25 - 150
13C4 PFOA	97		25 - 150
13C5 PFNA	97		25 - 150
13C2 PFDA	98		25 - 150
13C2 PFUnA	95		25 - 150
13C2 PFDoA	89		25 - 150

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

Lab Sample ID: LCSD 320-383172/3-A
Matrix: Water
Analysis Batch: 383803

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 383172

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C2 PFTeDA	77		25 - 150
13C3 PFBS	92		25 - 150
18O2 PFHxS	90		25 - 150
13C4 PFOS	89		25 - 150
13C8 FOSA	83		25 - 150
d3-NMeFOSAA	81		25 - 150
d5-NEtFOSAA	80		25 - 150
M2-6:2 FTS	92		25 - 150
M2-8:2 FTS	92		25 - 150

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

LCMS

Prep Batch: 383172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-61353-1	NNU PLCRS	Total/NA	Water	3535	
320-61353-2	NNU SLCRS	Total/NA	Water	3535	
320-61353-3	ONU SLCRS	Total/NA	Water	3535	
320-61353-4	SA SLCRS	Total/NA	Water	3535	
320-61353-5	EQUIPMENT BLANK	Total/NA	Water	3535	
MB 320-383172/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-383172/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-383172/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 383803

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-61353-1	NNU PLCRS	Total/NA	Water	537 (modified)	383172
320-61353-2	NNU SLCRS	Total/NA	Water	537 (modified)	383172
320-61353-3	ONU SLCRS	Total/NA	Water	537 (modified)	383172
320-61353-4	SA SLCRS	Total/NA	Water	537 (modified)	383172
320-61353-5	EQUIPMENT BLANK	Total/NA	Water	537 (modified)	383172
MB 320-383172/1-A	Method Blank	Total/NA	Water	537 (modified)	383172
LCSD 320-383172/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	383172

Analysis Batch: 384478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-383172/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	383172

Lab Chronicle

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Client Sample ID: NNU PLCRS — Lab Sample ID: 320-61353-1

Date Collected: 05/28/20 13:20 — **Matrix: Water**
Date Received: 06/02/20 12:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			383172	06/03/20 18:42	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1	383803	06/05/20 06:22	D1R	TAL SAC

Client Sample ID: NNU SLCRS — Lab Sample ID: 320-61353-2

Date Collected: 05/28/20 13:40 — **Matrix: Water**
Date Received: 06/02/20 12:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			383172	06/03/20 18:42	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1	383803	06/05/20 06:31	D1R	TAL SAC

Client Sample ID: ONU SLCRS — Lab Sample ID: 320-61353-3

Date Collected: 05/28/20 13:50 — **Matrix: Water**
Date Received: 06/02/20 12:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			383172	06/03/20 18:42	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1	383803	06/05/20 06:41	D1R	TAL SAC

Client Sample ID: SA SLCRS — Lab Sample ID: 320-61353-4

Date Collected: 05/28/20 11:20 — **Matrix: Water**
Date Received: 06/02/20 12:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			383172	06/03/20 18:42	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1	383803	06/05/20 06:50	D1R	TAL SAC

Client Sample ID: EQUIPMENT BLANK — Lab Sample ID: 320-61353-5

Date Collected: 05/28/20 11:30 — **Matrix: Water**
Date Received: 06/02/20 12:34

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			383172	06/03/20 18:42	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1	383803	06/05/20 06:59	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: Pace Analytical Services, LLC
Project/Site: LEACHATE BASELINE 5/28

Job ID: 320-61353-1
SDG: 70132491

Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	01-20-21
Arizona	State	AZ0708	08-11-20
Arkansas DEQ	State	19-042-0	06-17-20
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	07-01-21
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Illinois	NELAP	200060	03-17-21
Kansas	NELAP	E-10375	10-31-20
Louisiana	NELAP	01944	06-30-20
Maine	State	2018009	04-14-22
Michigan	State	9947	01-31-22
Nevada	State	CA000442020-1	07-31-20
New Hampshire	NELAP	2997	04-18-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-21
Oregon	NELAP	4040	01-29-21
Pennsylvania	NELAP	68-01272	03-31-21
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-21
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-20 *
West Virginia (DW)	State	9930C	12-31-20
Wyoming	State Program	8TMS-L	01-28-19 *

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

Method PFC IDA

Fluorinated Hydrocarbons by Method PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	C3PFBS #	PFHxA #	C4PFHA #	PFHxS #	M262FTS #	PFOA #
NNU PLCRS	320-61353-1	47	74	80	79	85	85	102	86
NNU SLCRS	320-61353-2	54	85	91	94	99	103	112	98
ONU SLCRS	320-61353-3	43	65	79	83	92	93	186 *5	96
SA SLCRS	320-61353-4	44	57	62	64	75	75	132	78
EQUIPMENT BLANK	320-61353-5	117	124	118	126	124	121	129	133
	MB 320-383172/1-A	78	85	81	87	87	85	86	89
	LCS 320-383172/2-A	82	91	92	97	95	105	100	99
	LCSD 320-383172/3-A	85	91	92	93	90	90	92	97

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
C3PFBS = 13C3 PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
C4PFHA = 13C4 PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
M262FTS = M2-6:2 FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFNA #	M282FTS #	PFDA #	PFOSA #	d3NMFOS #	PFUnA #	d5NEFOS #
NNU PLCRS	320-61353-1	71	88	65	75	66	53	54	53
NNU SLCRS	320-61353-2	92	101	75	89	81	64	88	69
ONU SLCRS	320-61353-3	87	100	153 *5	104	59	88	94	98
SA SLCRS	320-61353-4	68	87	280 *5	93	61	139	98	149
EQUIPMENT BLANK	320-61353-5	117	132	120	133	107	99	116	105
	MB 320-383172/1-A	83	99	90	90	81	73	79	81
	LCS 320-383172/2-A	105	104	117	107	102	99	103	112
	LCSD 320-383172/3-A	89	97	92	98	83	81	95	80

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

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
NNU PLCRS	320-61353-1	57	42
NNU SLCRS	320-61353-2	98	40
ONU SLCRS	320-61353-3	86	77
SA SLCRS	320-61353-4	95	81
EQUIPMENT BLANK	320-61353-5	125	103
	MB 320-383172/1-A	102	88
	LCS 320-383172/2-A	112	109
	LCSD 320-383172/3-A	89	77

	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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Matrix: Water Level: Low Lab File ID: 2020.06.08_A9_PFC.B_010.d

Lab ID: LCS 320-383172/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid	40.0	41.6	104	76-136	
Perfluoropentanoic acid (PFPeA)	40.0	36.7	92	71-131	
Perfluorohexanoic acid (PFHxA)	40.0	36.2	90	73-133	
Perfluoroheptanoic acid	40.0	39.4	99	72-132	
Perfluorooctanoic acid (PFOA)	40.0	35.6	89	70-130	
Perfluorononanoic acid (PFNA)	40.0	37.7	94	75-135	
Perfluorodecanoic acid (PFDA)	40.0	38.9	97	76-136	
Perfluoroundecanoic acid (PFUnA)	40.0	40.3	101	68-128	
Perfluorododecanoic acid (PFDoA)	40.0	36.1	90	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	39.0	97	71-131	
Perfluorotetradecanoic acid (PFTeA)	40.0	34.9	87	70-130	
Perfluorobutanesulfonic acid (PFBS)	35.4	35.6	101	67-127	
Perfluorohexanesulfonic acid (PFHxS)	36.4	29.2	80	59-119	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	35.6	94	76-136	
Perfluorooctanesulfonic acid (PFOS)	37.1	33.8	91	70-130	
Perfluorodecanesulfonic acid (PFDS)	38.6	33.5	87	71-131	
Perfluorooctanesulfonamide (FOSA)	40.0	37.2	93	73-133	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	37.4	94	76-136	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	35.5	89	76-136	
6:2 FTS	37.9	37.1	98	59-175	
8:2 FTS	38.3	34.4	90	75-135	
13C4 PFBA	100	82.0	82	25-150	
13C5 PFPeA	100	90.5	91	25-150	
13C2 PFHxA	100	97.0	97	25-150	
13C4 PFHpA	100	94.6	95	25-150	
13C4 PFOA	100	98.9	99	25-150	
13C5 PFNA	100	104	104	25-150	
13C2 PFDA	100	107	107	25-150	
13C2 PFUnA	100	103	103	25-150	
13C2 PFDoA	100	112	112	25-150	
13C2 PFTeDA	100	109	109	25-150	
13C3 PFBS	93.0	85.4	92	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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Matrix: Water Level: Low Lab File ID: 2020.06.08_A9_PFC.B_010.d

Lab ID: LCS 320-383172/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
18O2 PFHxS	94.6	98.9	105	25-150	
13C4 PFOS	95.6	100	105	25-150	
13C8 FOSA	100	102	102	25-150	
d3-NMeFOSAA	100	98.5	99	25-150	
d5-NEtFOSAA	100	112	112	25-150	
M2-6:2 FTS	95.0	94.7	100	25-150	
M2-8:2 FTS	95.8	112	117	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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Matrix: Water Level: Low Lab File ID: 2020.06.04_A15_PFC_B_042.d

Lab ID: LCSD 320-383172/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid	40.0	44.4	111	6	30	76-136	
Perfluoropentanoic acid (PFPeA)	40.0	39.7	99	8	30	71-131	
Perfluorohexanoic acid (PFHxA)	40.0	39.3	98	8	30	73-133	
Perfluoroheptanoic acid	40.0	43.6	109	10	30	72-132	
Perfluorooctanoic acid (PFOA)	40.0	39.0	98	9	30	70-130	
Perfluorononanoic acid (PFNA)	40.0	39.0	98	3	30	75-135	
Perfluorodecanoic acid (PFDA)	40.0	38.7	97	0	30	76-136	
Perfluoroundecanoic acid (PFUnA)	40.0	39.8	100	1	30	68-128	
Perfluorododecanoic acid (PFDoA)	40.0	36.0	90	0	30	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	38.8	97	0	30	71-131	
Perfluorotetradecanoic acid (PFTeA)	40.0	44.5	111	24	30	70-130	
Perfluorobutanesulfonic acid (PFBS)	35.4	37.1	105	4	30	67-127	
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.6	90	11	30	59-119	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.0	102	9	30	76-136	
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5	104	13	30	70-130	
Perfluorodecanesulfonic acid (PFDS)	38.6	35.4	92	6	30	71-131	
Perfluorooctanesulfonamide (FOSA)	40.0	41.9	105	12	30	73-133	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	41.3	103	10	30	76-136	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	38.0	95	7	30	76-136	
6:2 FTS	37.9	40.8	107	9	30	59-175	
8:2 FTS	38.3	40.5	106	16	30	75-135	
13C4 PFBA	100	85.0	85			25-150	
13C5 PFPeA	100	90.8	91			25-150	
13C2 PFHxA	100	93.5	93			25-150	
13C4 PFHpA	100	89.9	90			25-150	
13C4 PFOA	100	96.7	97			25-150	
13C5 PFNA	100	97.0	97			25-150	
13C2 PFDA	100	98.5	98			25-150	
13C2 PFUnA	100	94.9	95			25-150	
13C2 PFDoA	100	89.5	89			25-150	
13C2 PFTeDA	100	77.2	77			25-150	
13C3 PFBS	93.0	85.6	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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Matrix: Water Level: Low Lab File ID: 2020.06.04_A15_PFC_B_042.d

Lab ID: LCSD 320-383172/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
18O2 PFHxS	94.6	85.0	90			25-150	
13C4 PFOS	95.6	84.9	89			25-150	
13C8 FOSA	100	83.3	83			25-150	
d3-NMeFOSAA	100	80.8	81			25-150	
d5-NEtFOSAA	100	80.2	80			25-150	
M2-6:2 FTS	95.0	87.4	92			25-150	
M2-8:2 FTS	95.8	88.1	92			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab File ID: 2020.06.04_A15_PFC_B_040.d Lab Sample ID: MB 320-383172/1-A

Matrix: Water Date Extracted: 06/03/2020 18:42

Instrument ID: A15 Date Analyzed: 06/05/2020 05:55

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCSD 320-383172/3-A	2020.06.04_A15_PFC_B_042.d	06/05/2020 06:13
NNU PLCRS	320-61353-1	2020.06.04_A15_PFC_B_043.d	06/05/2020 06:22
NNU SLCRS	320-61353-2	2020.06.04_A15_PFC_B_044.d	06/05/2020 06:31
ONU SLCRS	320-61353-3	2020.06.04_A15_PFC_B_045.d	06/05/2020 06:41
SA SLCRS	320-61353-4	2020.06.04_A15_PFC_B_046.d	06/05/2020 06:50
EQUIPMENT BLANK	320-61353-5	2020.06.04_A15_PFC_B_047.d	06/05/2020 06:59
	LCS 320-383172/2-A	2020.06.08_A9_PFC.B_010.d	06/08/2020 15:57

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Sample No.: IC 320-383313/5 Date Analyzed: 06/04/2020 12:24

Instrument ID: A15 GC Column: Gemini C18 3x50 ID: 3(mm)

Lab File ID (Standard): 2020.06.04_A15_PFC_ Heated Purge: (Y/N) N

Calibration ID: 50360

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		6096629	4.05				
UPPER LIMIT		9144944	4.25				
LOWER LIMIT		3048315	3.85				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-383313/9		6358610	4.04				
ICV 320-383313/10		5679046	4.05				
CCV 320-383791/3 CCVIS		6527372	4.06				

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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Sample No.: CCV 320-383791/3 Date Analyzed: 06/05/2020 00:45

Instrument ID: A15 GC Column: Gemini C18 3x50 ID: 3(mm)

Lab File ID (Standard): 2020.06.04_A15_PFC_ Heated Purge: (Y/N) N

Calibration ID: 50360

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		6527372	4.06				
UPPER LIMIT		9791058	4.26				
LOWER LIMIT		3263686	3.86				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-383791/1		7368308	4.05				
CCVL 320-383791/2		6789088	4.05				
CCV 320-383803/1		6137389	4.05				
MB 320-383172/1-A		6363256	4.06				
LCSD 320-383172/3-A		6475625	4.06				
320-61353-1	NNU PLCRS	6176833	4.06				
320-61353-2	NNU SLCRS	5723579	4.06				
320-61353-3	ONU SLCRS	6312964	4.04				
320-61353-4	SA SLCRS	6709788	4.02				
320-61353-5	EQUIPMENT BLANK	5151290	4.05				
CCV 320-383803/13		6537728	4.06				

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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Sample No.: IC 320-382530/5 Date Analyzed: 06/02/2020 15:52

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm)

Lab File ID (Standard): 2020.06.02_A9_PFC_I Heated Purge: (Y/N) N

Calibration ID: 50293

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		3929125	3.34				
UPPER LIMIT		5893688	3.54				
LOWER LIMIT		1964563	3.14				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-382530/10		3980757	3.34				
ICV 320-382530/11		3784278	3.34				
CCV 320-384406/3 CCVIS		4543376	3.33				

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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Sample No.: CCV 320-384406/3 Date Analyzed: 06/08/2020 08:28

Instrument ID: A9 GC Column: Acquity ID: 2.1(mm)

Lab File ID (Standard): 2020.06.08_A9_PFC.L Heated Purge: (Y/N) N

Calibration ID: 50293

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		4543376	3.33				
UPPER LIMIT		6815064	3.53				
LOWER LIMIT		2271688	3.13				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-384406/1		4160725	3.33				
CCVL 320-384406/2		4198830	3.34				
CCV 320-384478/1		5031184	3.33				
LCS 320-383172/2-A		4161309	3.33				
CCV 320-384478/12		4102538	3.34				

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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: NNU PLCRS Lab Sample ID: 320-61353-1

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_043.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 13:20

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 286.9(mL) Date Analyzed: 06/05/2020 06:22

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	270		1.7	0.30
2706-90-3	Perfluoropentanoic acid (PFPeA)	130		1.7	0.43
307-24-4	Perfluorohexanoic acid (PFHxA)	190		1.7	0.51
375-85-9	Perfluoroheptanoic acid	31		1.7	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	43		1.7	0.74
375-95-1	Perfluorononanoic acid (PFNA)	2.5		1.7	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	0.66	J	1.7	0.27
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.7	0.96
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.7	0.48
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.7	1.1
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.7	0.25
375-73-5	Perfluorobutanesulfonic acid (PFBS)	230		1.7	0.17
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	14	B	1.7	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.29	J	1.7	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	12		1.7	0.47
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.7	0.28
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.70	J B	1.7	0.30
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		17	2.7
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		17	1.7
27619-97-2	6:2 FTS	4.3	J	17	1.7
39108-34-4	8:2 FTS	ND		17	1.7

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: NNU PLCRS Lab Sample ID: 320-61353-1

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_043.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 13:20

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 286.9(mL) Date Analyzed: 06/05/2020 06:22

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	47		25-150
STL01893	13C5 PFPeA	74		25-150
STL00993	13C2 PFHxA	79		25-150
STL01892	13C4 PFHpA	85		25-150
STL00990	13C4 PFOA	86		25-150
STL00995	13C5 PFNA	88		25-150
STL00996	13C2 PFDA	75		25-150
STL00997	13C2 PFUnA	54		25-150
STL00998	13C2 PFDoA	57		25-150
STL02116	13C2 PFTeDA	42		25-150
STL02337	13C3 PFBS	80		25-150
STL00994	18O2 PFHxS	85		25-150
STL00991	13C4 PFOS	71		25-150
STL01056	13C8 FOSA	66		25-150
STL02118	d3-NMeFOSAA	53		25-150
STL02117	d5-NEtFOSAA	53		25-150
STL02279	M2-6:2 FTS	102		25-150
STL02280	M2-8:2 FTS	65		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_043.d
Lims ID: 320-61353-A-1-A
Client ID: NNU PLCRS
Sample Type: Client
Inject. Date: 05-Jun-2020 06:22:50 ALS Bottle#: 30 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 320-61353-a-1-a
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 09:49:19 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: ruangyotsakuld Date: 08-Jun-2020 09:49:19
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

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	2.552	2.549	0.003	0.629	4641610	1.19		47.5	3943	
2 Perfluorobutanoic acid										M
212.90 > 169.00	2.552	2.557	-0.005	1.000	13391496	7.79			160	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.892	2.899	-0.007	0.713	6474417	1.85		74.1	2485	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.892	2.899	-0.007	1.000	9692172	3.72			72.9	M
D 9 13C3 PFBS										
301.90 > 80.00	2.934	2.940	-0.006	0.723	4532785	1.87		80.5	215	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.934	2.940	-0.006	1.000	12550585	6.60	Target=2.12		161	
298.90 > 99.00	2.934	2.940	-0.006	1.000	5595278		2.24(1.06-3.19)		763	
D 11 13C2 PFHxA										
315.00 > 270.00	3.266	3.278	-0.012	0.805	6667199	1.96		78.6	10162	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.266	3.278	-0.012	1.000	13346755	5.34	Target=15.31		657	
313.00 > 119.00	3.266	3.278	-0.012	1.000	851993		15.67(7.66-22.97)		674	
D 18 13C4 PFHpA										
367.00 > 322.00	3.667	3.672	-0.005	0.904	5721962	2.12		85.0	11711	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.667	3.672	-0.005	1.000	2088000	0.9025	Target=3.85		184	
363.00 > 169.00	3.667	3.672	-0.005	1.000	529029		3.95(1.93-5.78)		227	
D 17 18O2 PFHxS										
403.00 > 84.00	3.667	3.682	-0.015	0.904	2333363	2.00		84.7	9772	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.667	3.682	-0.015	1.000	430204	0.3883	Target=2.99		51.8	M
399.00 > 99.00	3.667	3.682	-0.015	1.000	159800		2.69(1.49-4.48)		139	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 20 M2-6:2 FTS										
429.00 > 81.00	4.039	4.042	-0.003	0.996	863083	2.43		102	110	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.039	4.042	-0.003	1.000	88735	0.1242			912	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.048	4.051	-0.003	0.919	5915	0.008434	Target=3.81		2.3	
449.00 > 99.00	4.039	4.051	-0.012	0.917	1069		5.53(1.91-5.72)		4.0	
D 25 13C4 PFOA										
417.00 > 372.00	4.056	4.059	-0.003	1.000	5212310	2.14		85.6	9586	
* 23 13C2 PFOA										
415.00 > 370.00	4.056	4.059	-0.003		6176833	2.50			10658	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.056	4.059	-0.003	1.000	2686785	1.22	Target=2.79		193	
413.00 > 169.00	4.056	4.059	-0.003	1.000	942397		2.85(1.39-4.18)		1687	
D 27 13C4 PFOS										
503.00 > 80.00	4.404	4.405	-0.001	1.086	1536615	1.70		71.1	145	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.404	4.405	-0.001	1.000	226964	0.3568	Target=5.06		66.5	
499.00 > 99.00	4.404	4.405	-0.001	1.000	40708		5.58(2.53-7.59)		144	M
D 30 13C5 PFNA										
468.00 > 423.00	4.420	4.420	0.0	1.090	4080416	2.19		87.6	10428	
31 Perfluorononanoic acid										
463.00 > 419.00	4.420	4.420	0.0	1.000	118859	0.0718	Target=7.17		28.4	
463.00 > 169.00	4.420	4.420	0.0	1.000	15132		7.85(3.58-10.75)		62.3	
D 33 13C8 FOSA										
506.00 > 78.00	4.752	4.752	0.0	1.172	2960268	1.65		65.8	7385	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.752	4.752	0.0	1.000	20906	0.0201			73.5	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.752	4.752	0.0	1.000	24422	0.0189	Target=10.38		10.1	
513.00 > 169.00	4.744	4.752	-0.008	0.998	3087		7.91(5.19-15.57)		22.0	
D 39 13C2 PFDA										
515.00 > 470.00	4.752	4.752	0.0	1.172	3345458	1.88		75.3	15496	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.752	4.761	-0.009	1.000	6392	0.0143			112	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.752	4.761	-0.009	1.172	657699	1.55		64.7	1227	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.907	4.907	0.0	1.210	884992	1.33		53.4	1756	
41 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.907	4.917	-0.010	1.000	3578	0.0139			11.2	M
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.057	5.057	0.0	1.000	5852	0.0100	Target=7.52		3.4	
563.00 > 169.00	5.057	5.057	0.0	1.000	1182		4.95(3.76-11.28)		11.9	
D 43 13C2 PFUnA										
565.00 > 520.00	5.057	5.066	-0.009	1.247	2036855	1.34		53.8	7034	

Report Date: 08-Jun-2020 09:49:20 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_043.d
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.066	5.066	0.0	1.249	902588	1.34		53.5	1660	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.075	5.075	0.0	1.002	3326	0.0130			18.9	
D 56 13C2 PFDoA										
615.00 > 570.00	5.330	5.340	-0.010	1.314	1927735	1.44		57.4	6459	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.821	5.830	-0.009	1.435	920613	1.05		42.0	4845	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 08-Jun-2020 09:49:20 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_043.d

Injection Date: 05-Jun-2020 06:22:50 Instrument ID: A15

Lims ID: 320-61353-A-1-A Lab Sample ID: 320-61353-1

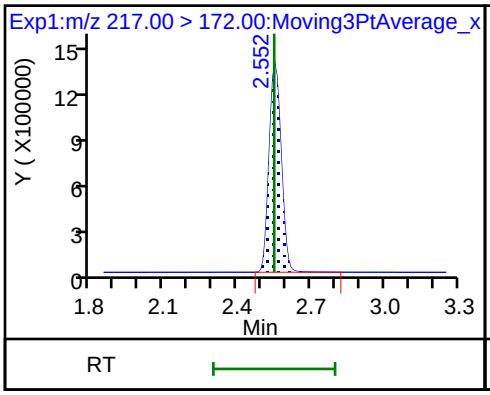
Client ID: NNU PLCRS

Operator ID: SACINSTA15 ALS Bottle#: 30 Worklist Smp#: 5

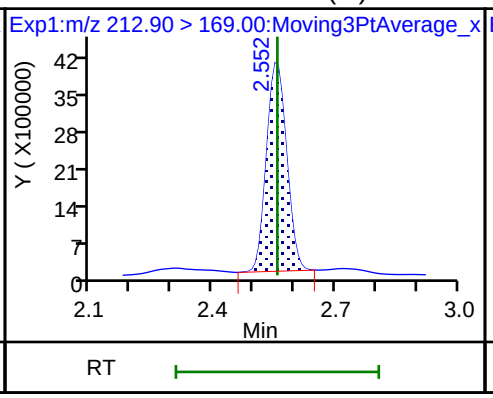
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

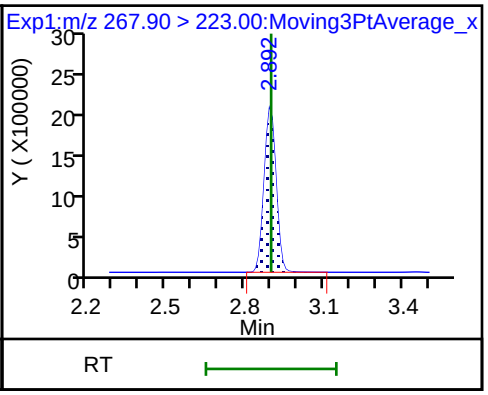
D 1 13C4 PFBA



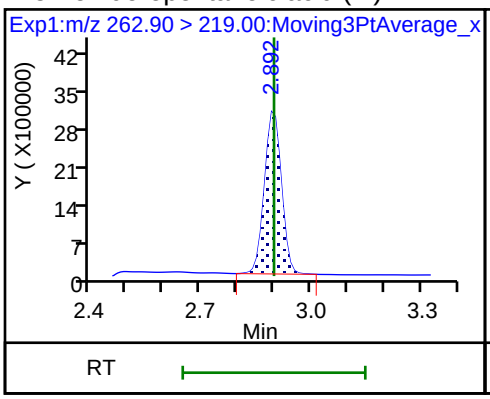
2 Perfluorobutanoic acid (M)



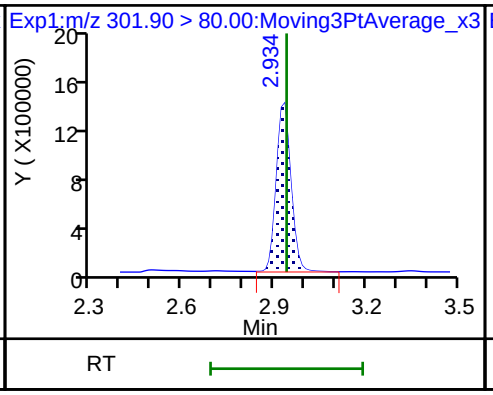
D 4 13C5 PFPeA



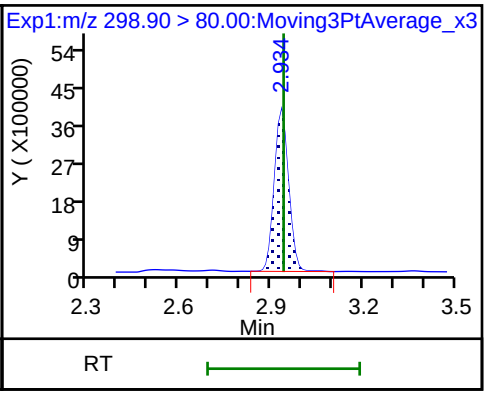
5 Perfluoropentanoic acid (M)



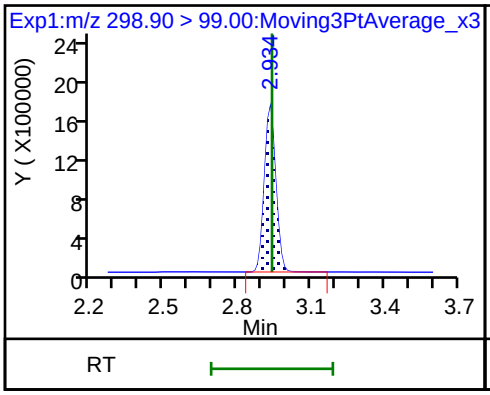
D 9 13C3 PFBS



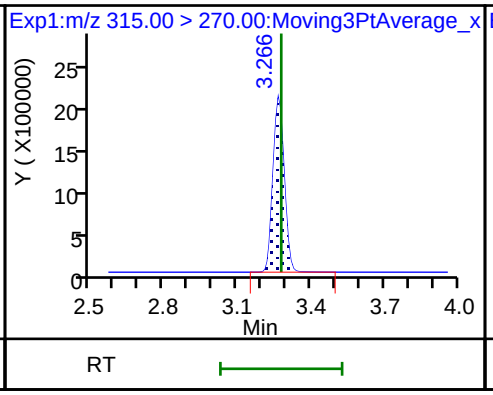
6 Perfluorobutanesulfonic acid



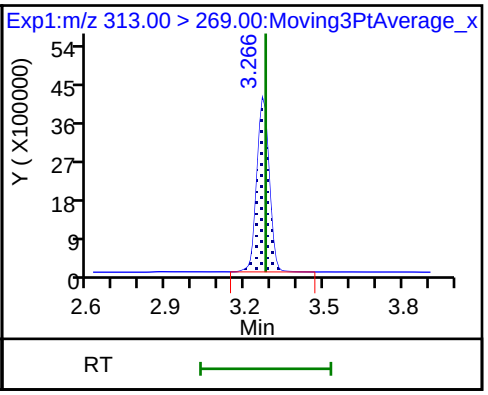
6 Perfluorobutanesulfonic acid



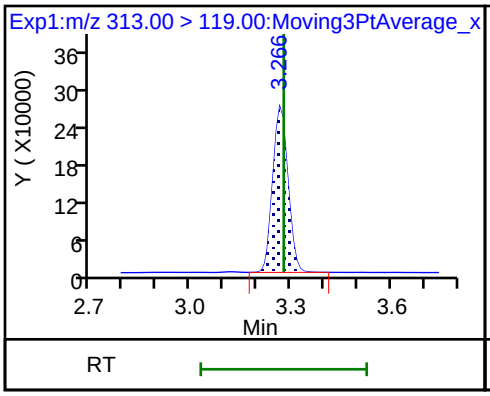
D 11 13C2 PFHxA



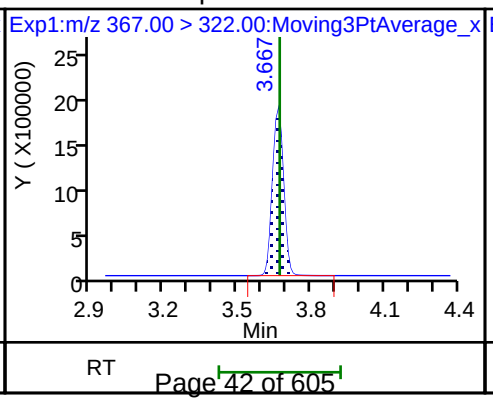
10 Perfluorohexanoic acid



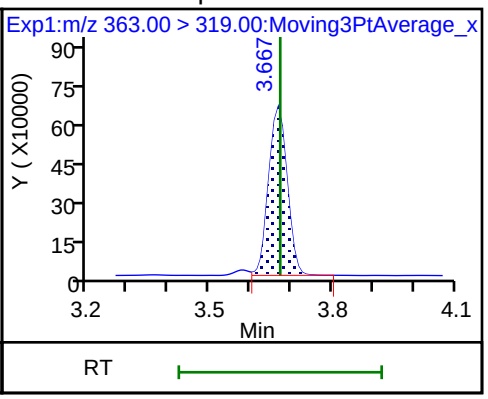
10 Perfluorohexanoic acid



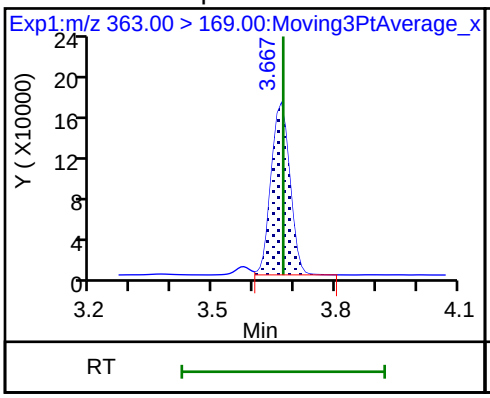
D 18 13C4 PFHpA



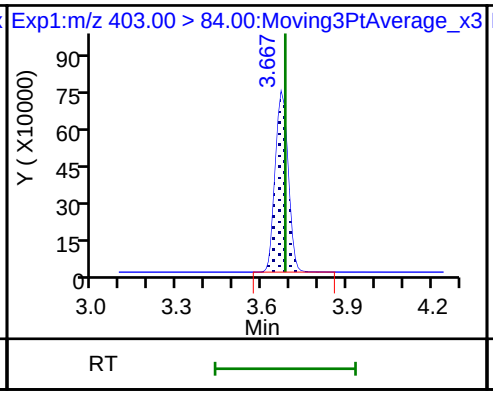
16 Perfluoroheptanoic acid



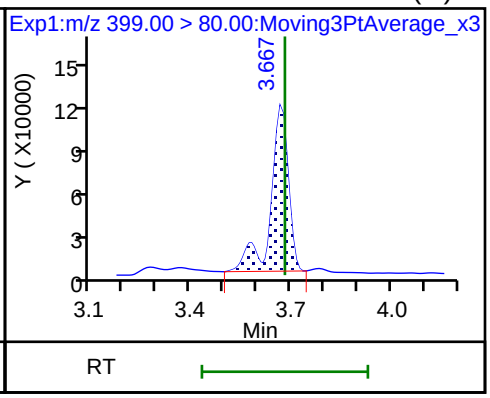
16 Perfluoroheptanoic acid



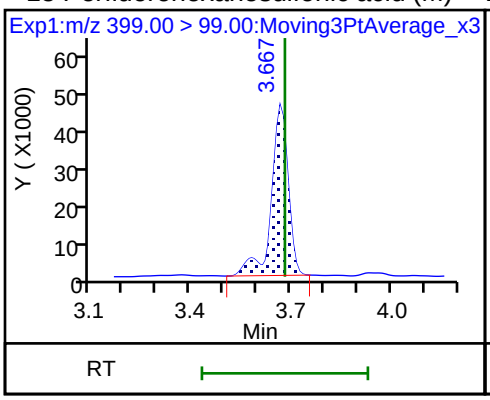
D 17 18O2 PFHxS



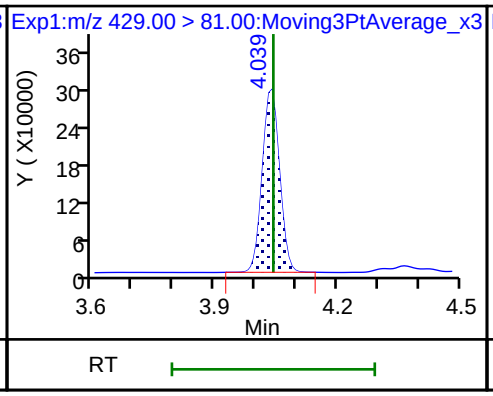
15 Perfluorohexanesulfonic acid (M)



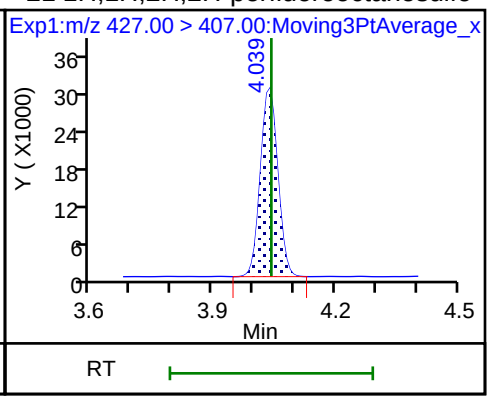
15 Perfluorohexanesulfonic acid (M)



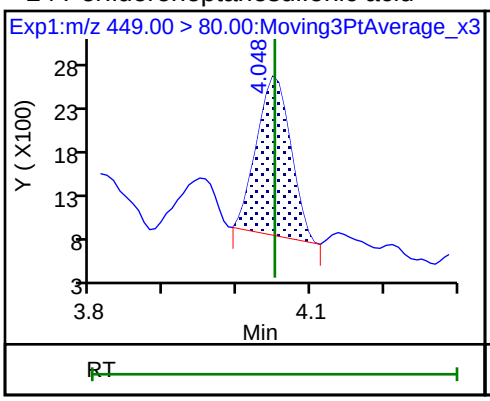
D 20 M2-6:2 FTS



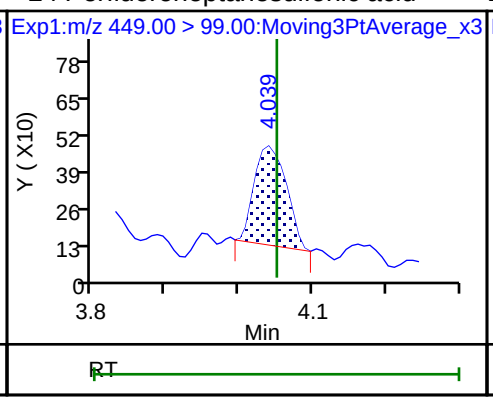
21 1H,1H,2H,2H-perfluorooctanesulfo



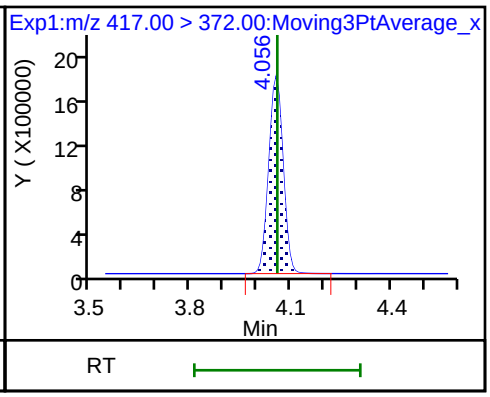
24 Perfluoroheptanesulfonic acid



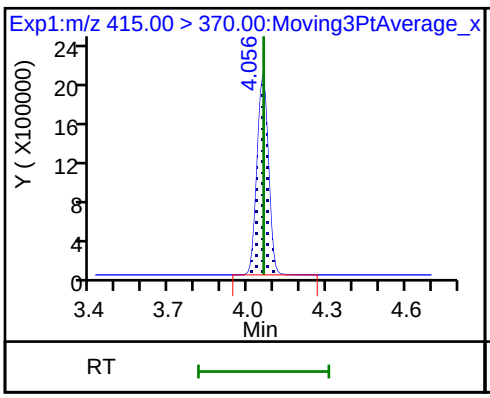
24 Perfluoroheptanesulfonic acid



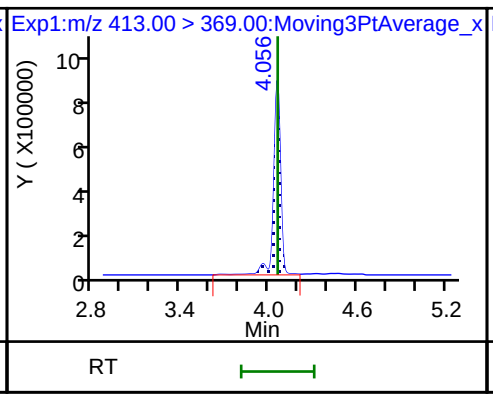
D 25 13C4 PFOA



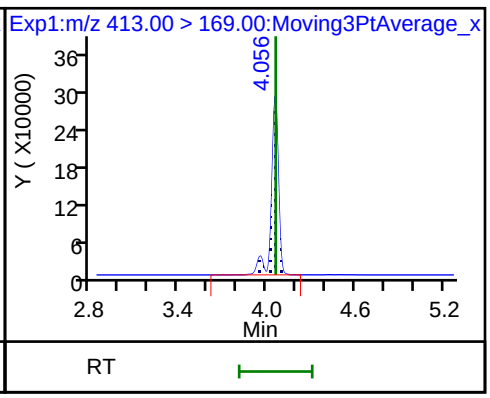
* 23 13C2 PFOA



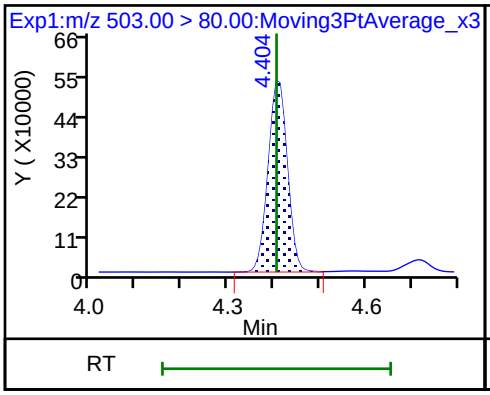
22 Perfluorooctanoic acid



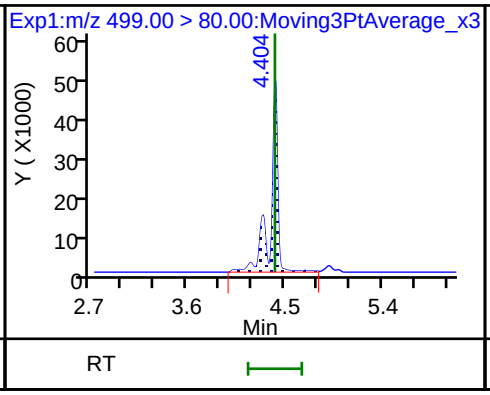
22 Perfluorooctanoic acid



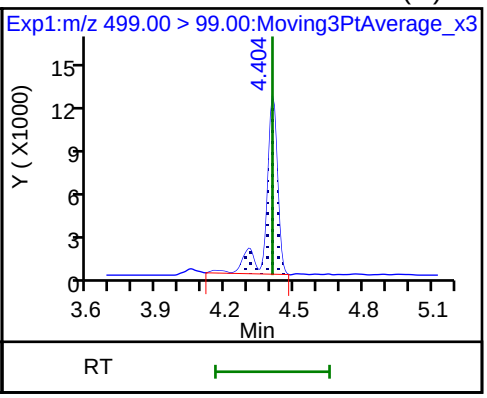
D 27 13C4 PFOS



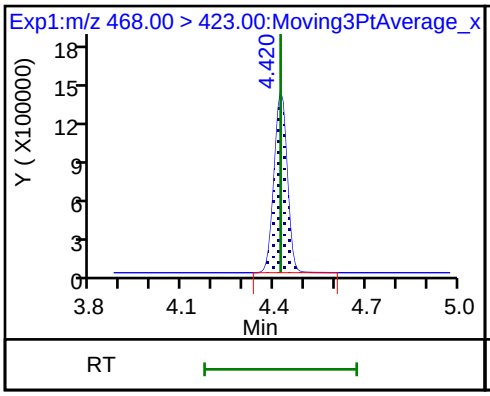
29 Perfluorooctanesulfonic acid



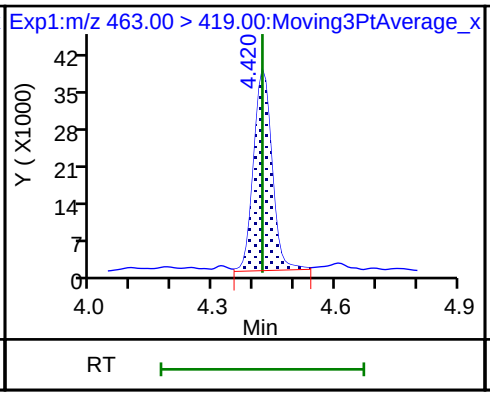
29 Perfluorooctanesulfonic acid (M)



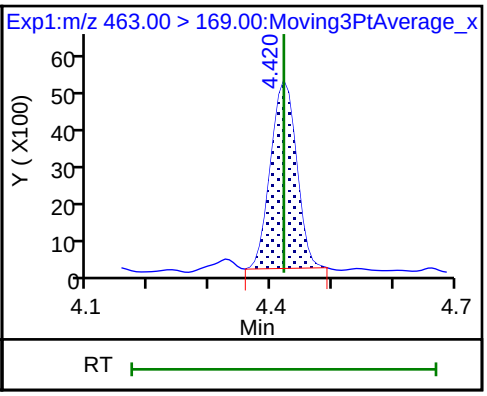
D 30 13C5 PFNA



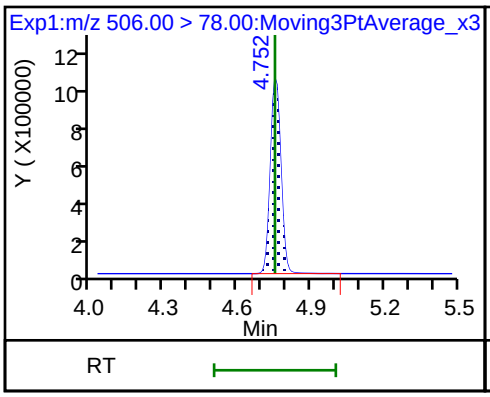
31 Perfluorononanoic acid



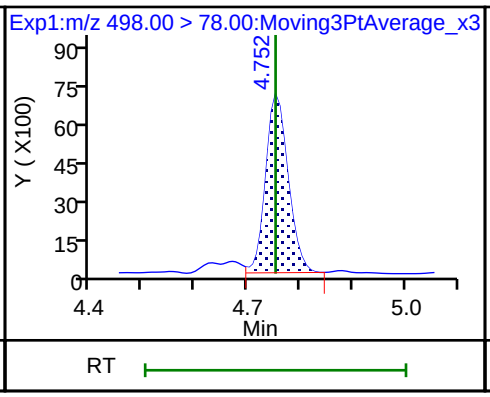
31 Perfluorononanoic acid



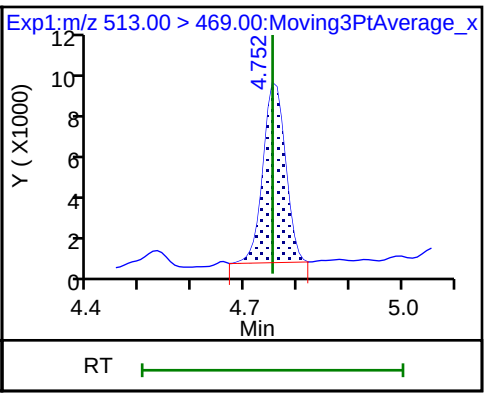
D 33 13C8 FOSA



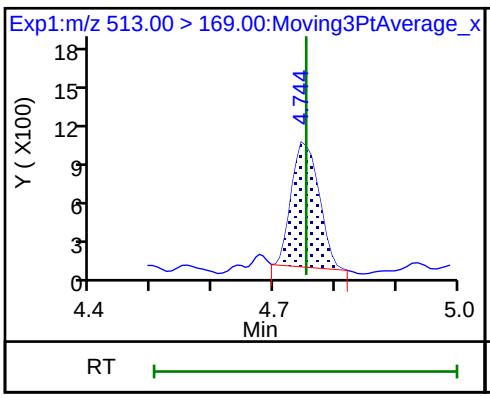
34 Perfluorooctanesulfonamide



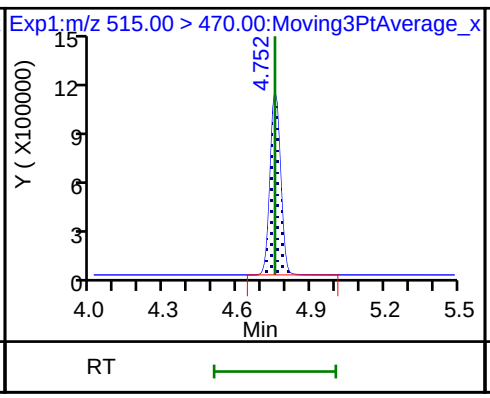
37 Perfluorodecanoic acid



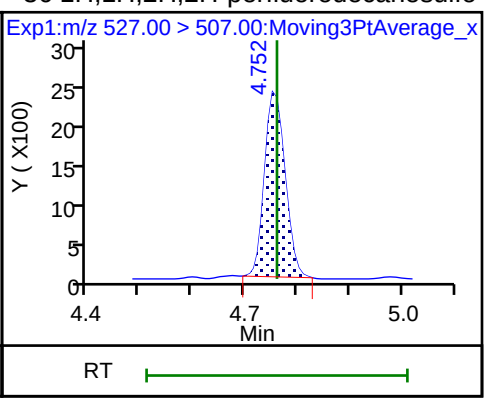
37 Perfluorodecanoic acid



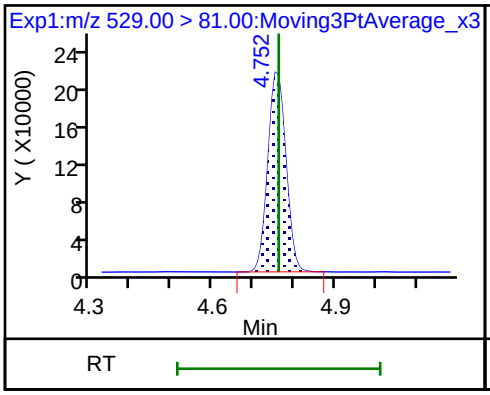
D 39 13C2 PFDA



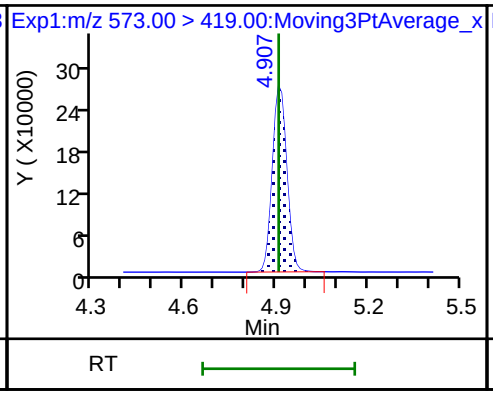
36 1H,1H,2H,2H-perfluorodecanesulfo



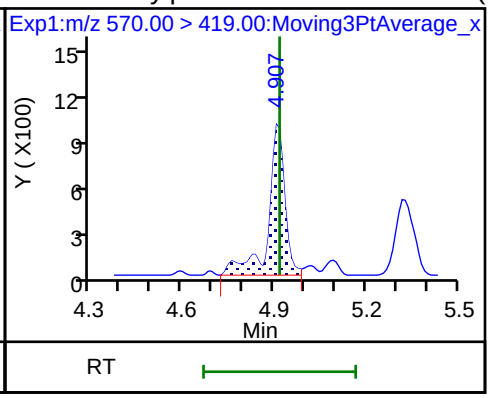
D 38 M2-8:2 FTS



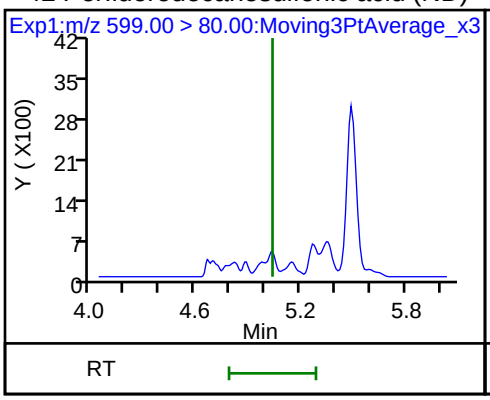
D 40 d3-NMeFOSAA



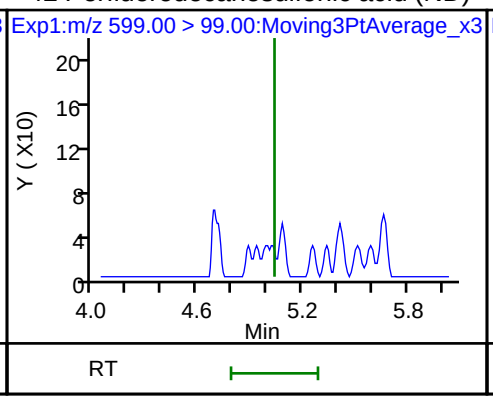
41 N-methylperfluorooctanesulfonami (M)



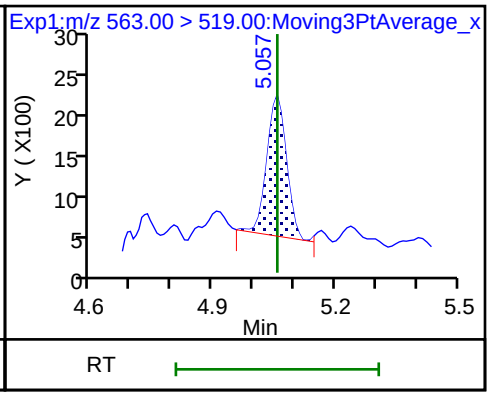
42 Perfluorodecanesulfonic acid (ND)



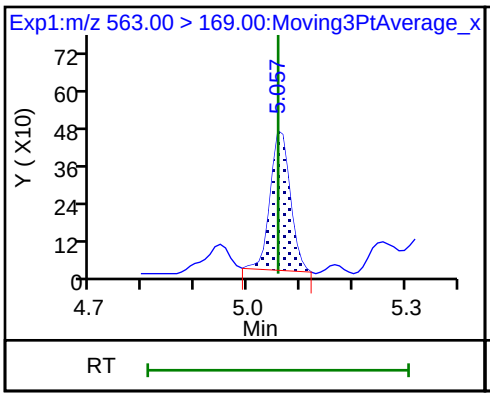
42 Perfluorodecanesulfonic acid (ND)



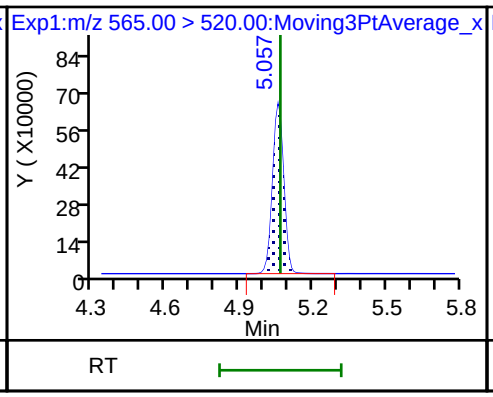
45 Perfluoroundecanoic acid



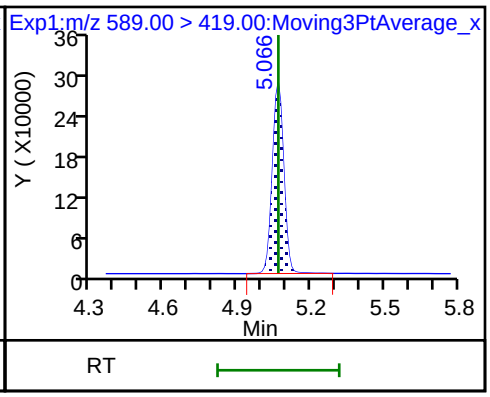
45 Perfluoroundecanoic acid



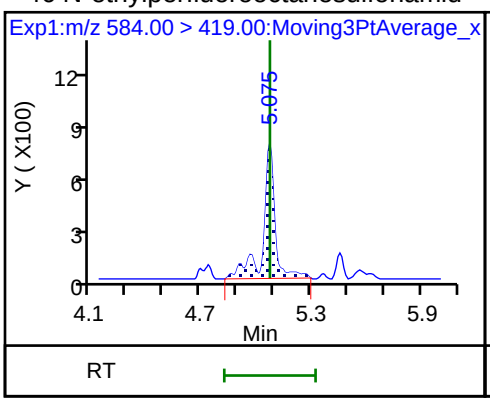
D 43 13C2 PFUnA



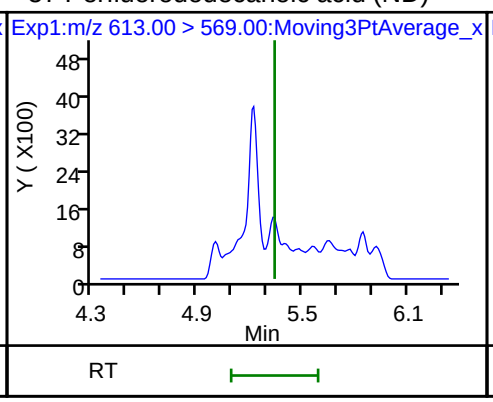
D 44 d5-NEtFOSAA



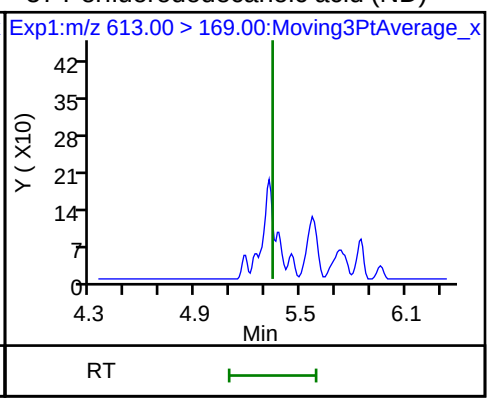
46 N-ethylperfluorooctanesulfonamid



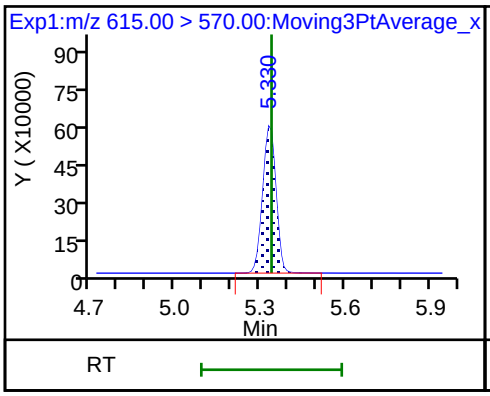
57 Perfluorododecanoic acid (ND)



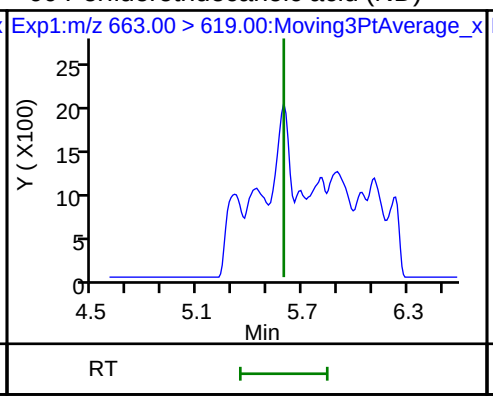
57 Perfluorododecanoic acid (ND)



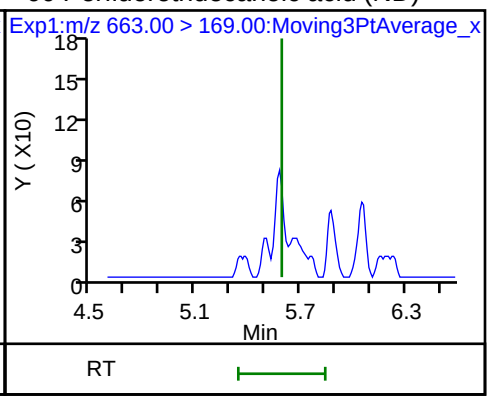
D 56 13C2 PFDoA



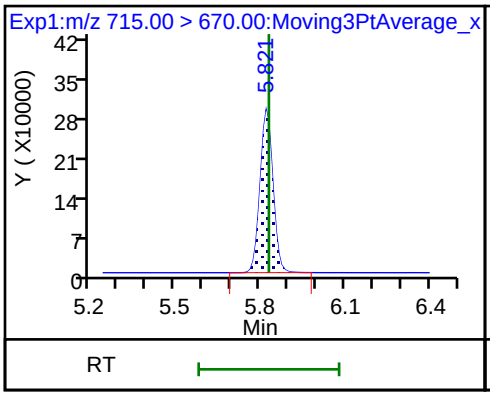
60 Perfluorotridecanoic acid (ND)



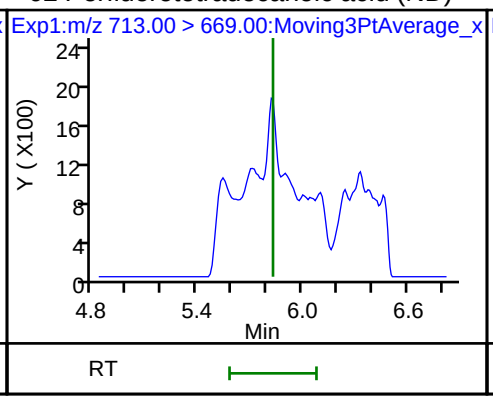
60 Perfluorotridecanoic acid (ND)



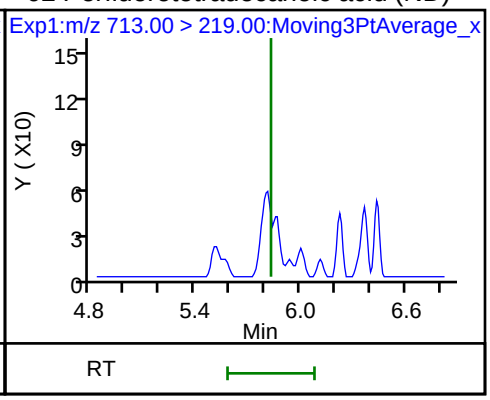
D 61 13C2 PFTeDA



62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

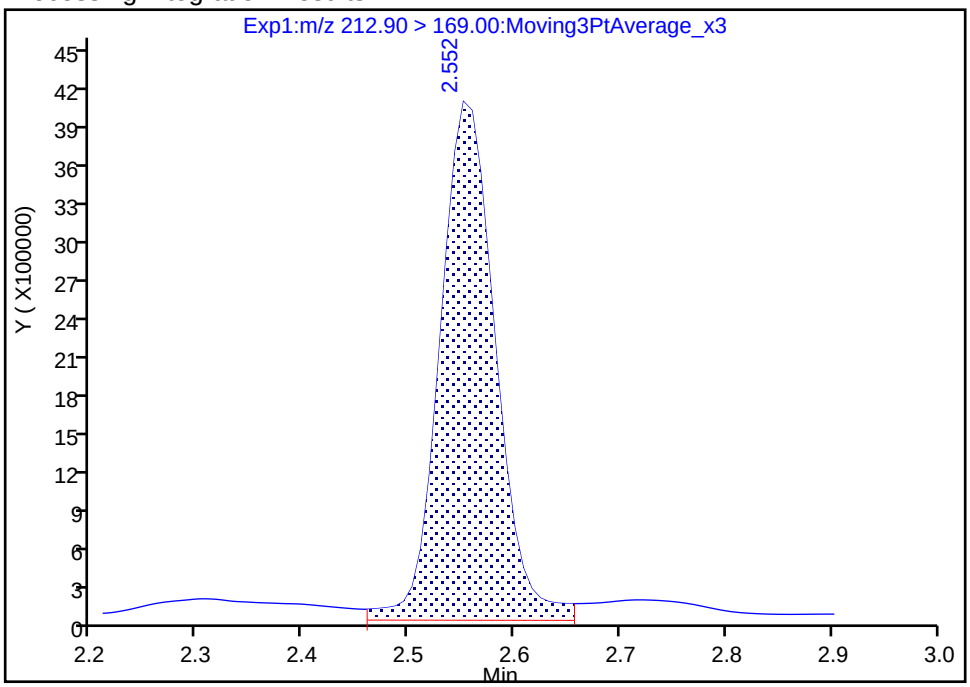
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_043.d				
Injection Date:	05-Jun-2020 06:22:50	Instrument ID:	A15		
Lims ID:	320-61353-A-1-A	Lab Sample ID:	320-61353-1		
Client ID:	NNU PLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	30	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

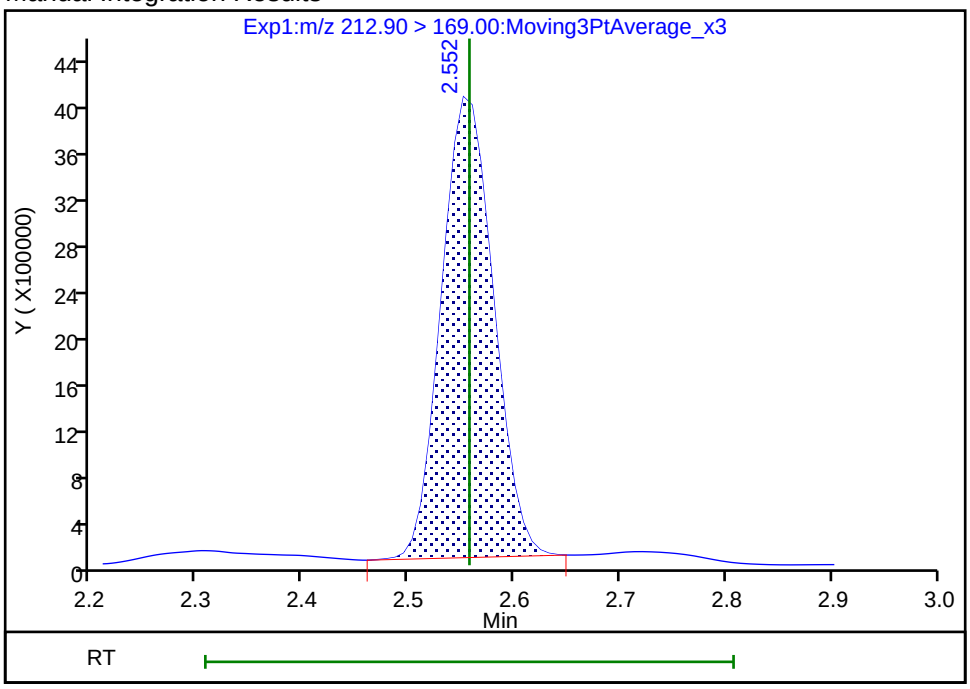
Processing Integration Results

RT: 2.55
Area: 14659117
Amount: 8.526858
Amount Units: ng/ml



Manual Integration Results

RT: 2.55
Area: 13391496
Amount: 7.789513
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:48:08

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

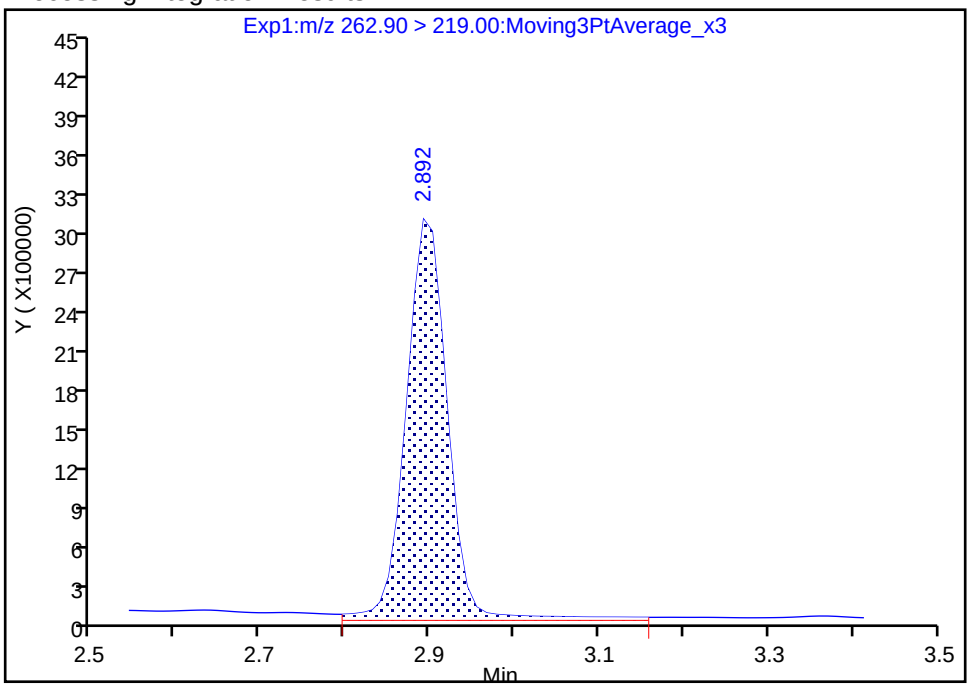
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_043.d				
Injection Date:	05-Jun-2020 06:22:50	Instrument ID:	A15		
Lims ID:	320-61353-A-1-A	Lab Sample ID:	320-61353-1		
Client ID:	NNU PLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	30	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

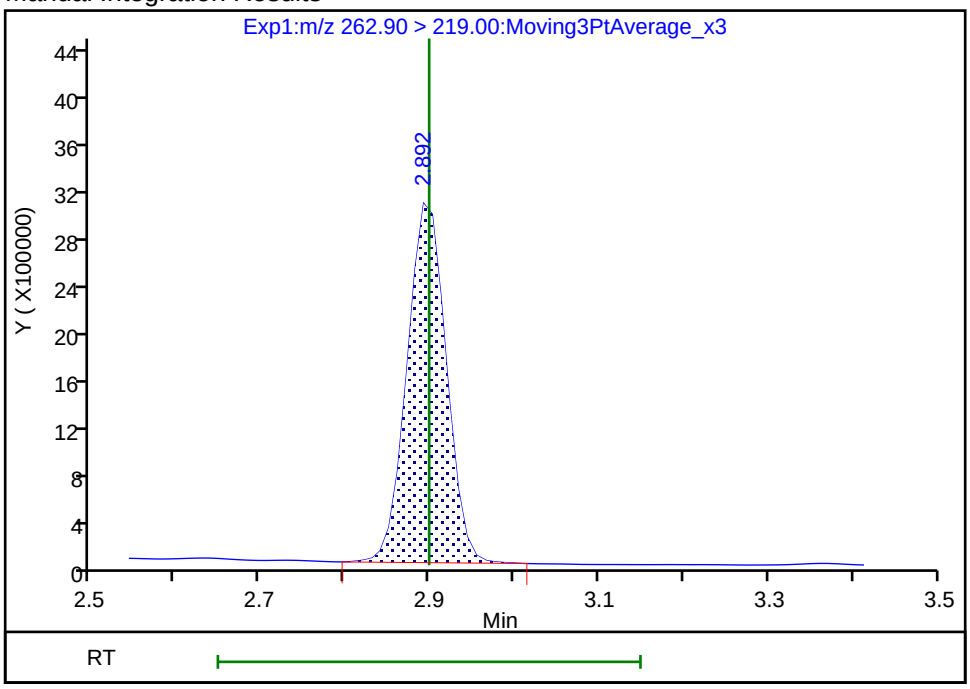
Processing Integration Results

RT: 2.89
Area: 10431008
Amount: 3.998203
Amount Units: ng/ml



Manual Integration Results

RT: 2.89
Area: 9692172
Amount: 3.715007
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:48:17
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

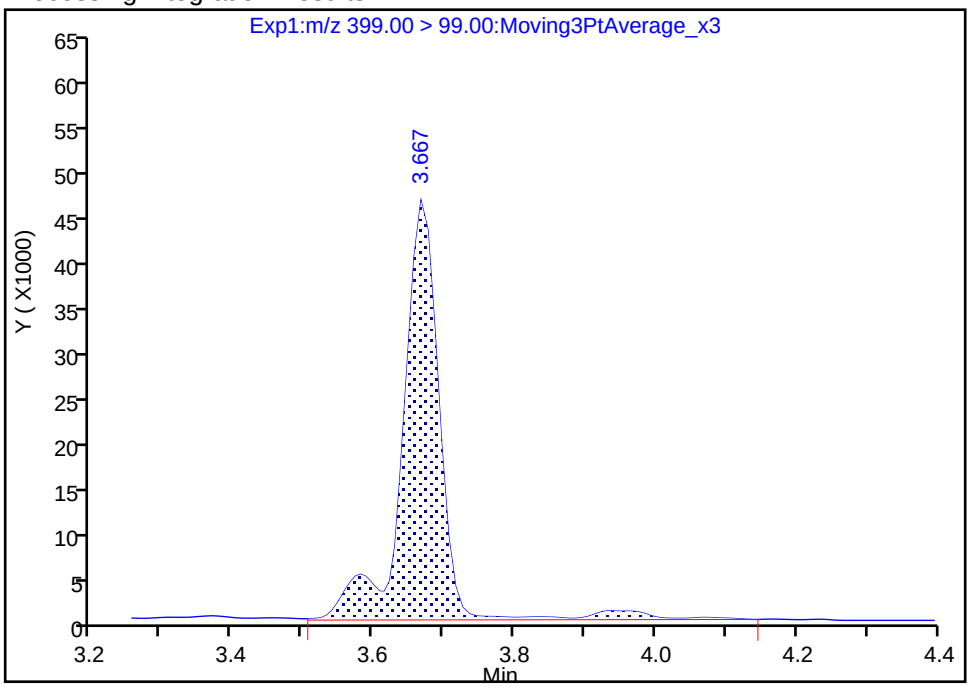
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_043.d				
Injection Date:	05-Jun-2020 06:22:50	Instrument ID:	A15		
Lims ID:	320-61353-A-1-A	Lab Sample ID:	320-61353-1		
Client ID:	NNU PLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	30	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

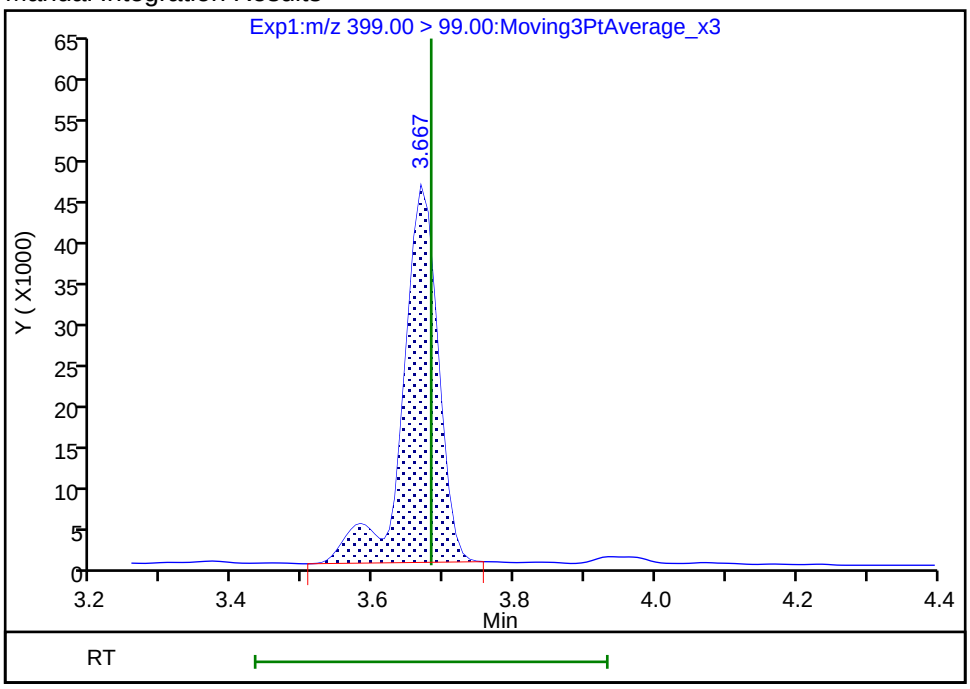
Processing Integration Results

RT: 3.67
Area: 171853
Amount: 0.428875
Amount Units: ng/ml



Manual Integration Results

RT: 3.67
Area: 159800
Amount: 0.388284
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:48:29

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

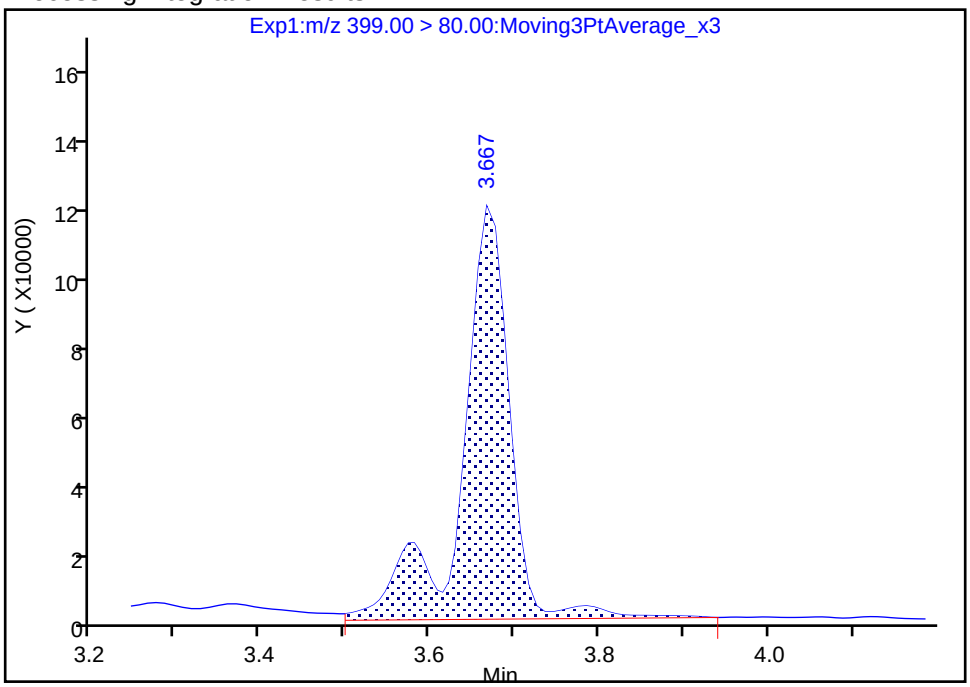
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_043.d				
Injection Date:	05-Jun-2020 06:22:50	Instrument ID:	A15		
Lims ID:	320-61353-A-1-A	Lab Sample ID:	320-61353-1		
Client ID:	NNU PLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	30	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

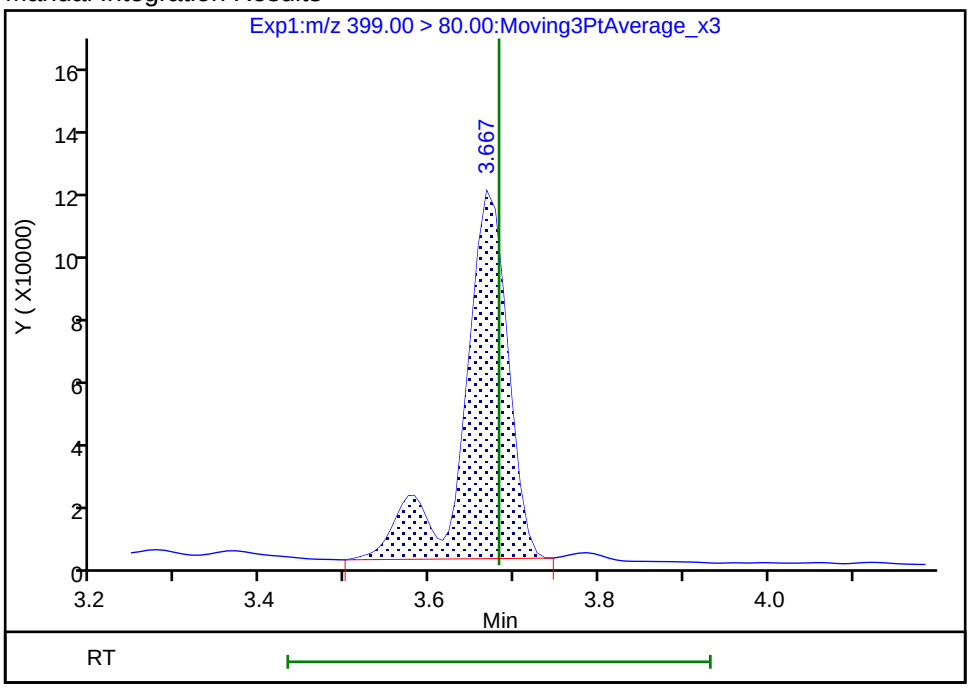
Processing Integration Results

RT: 3.67
Area: 475177
Amount: 0.428875
Amount Units: ng/ml



Manual Integration Results

RT: 3.67
Area: 430204
Amount: 0.388284
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:48:34

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

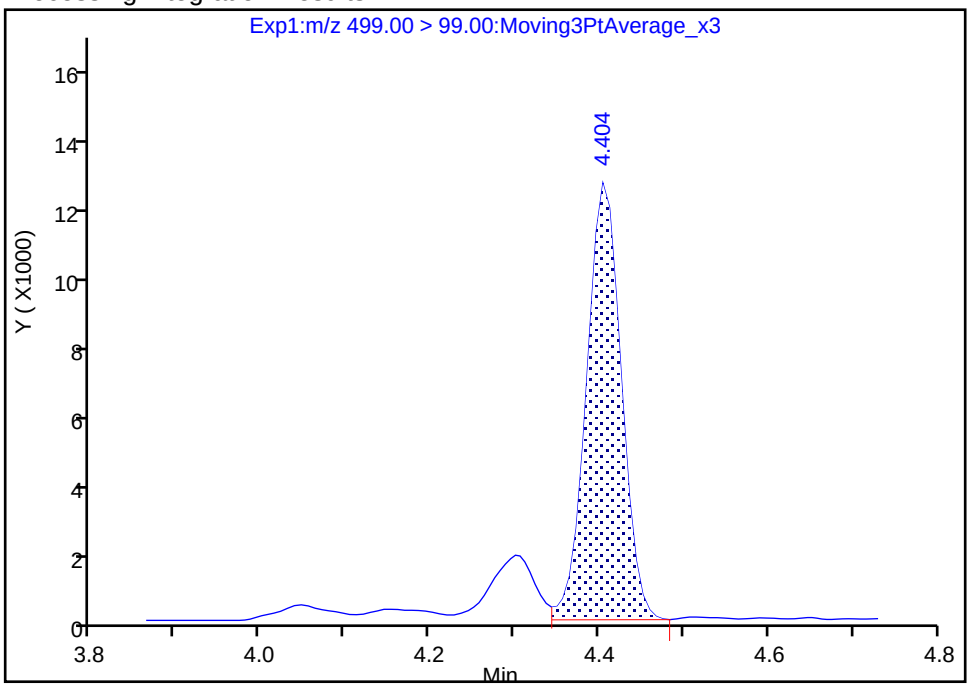
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_043.d				
Injection Date:	05-Jun-2020 06:22:50	Instrument ID:	A15		
Lims ID:	320-61353-A-1-A	Lab Sample ID:	320-61353-1		
Client ID:	NNU PLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	30	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

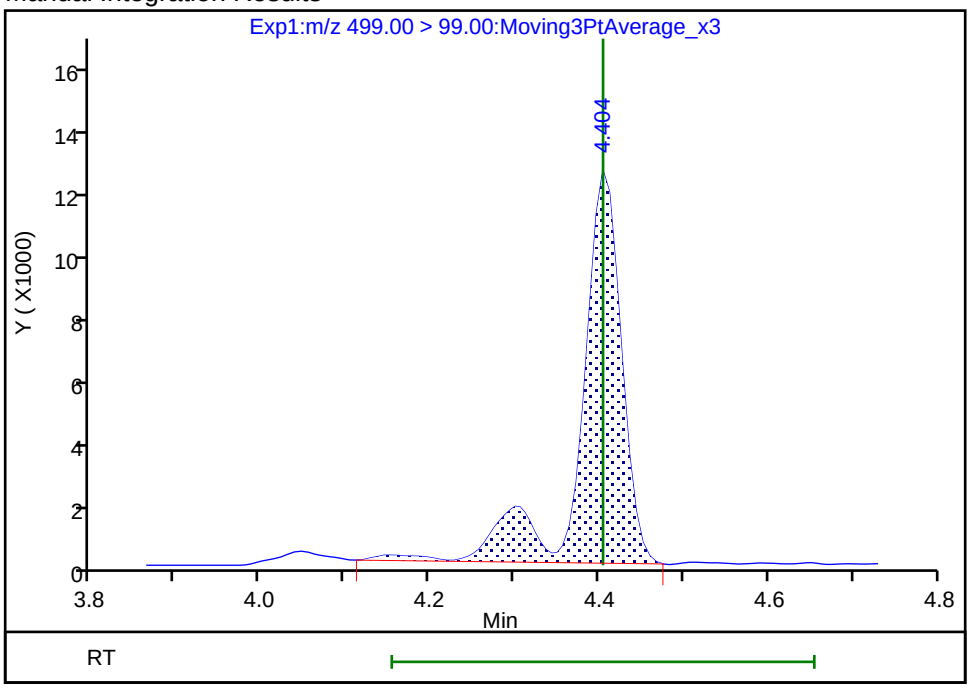
Processing Integration Results

RT: 4.40
Area: 34549
Amount: 0.356789
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 40708
Amount: 0.356789
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:48:50
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento

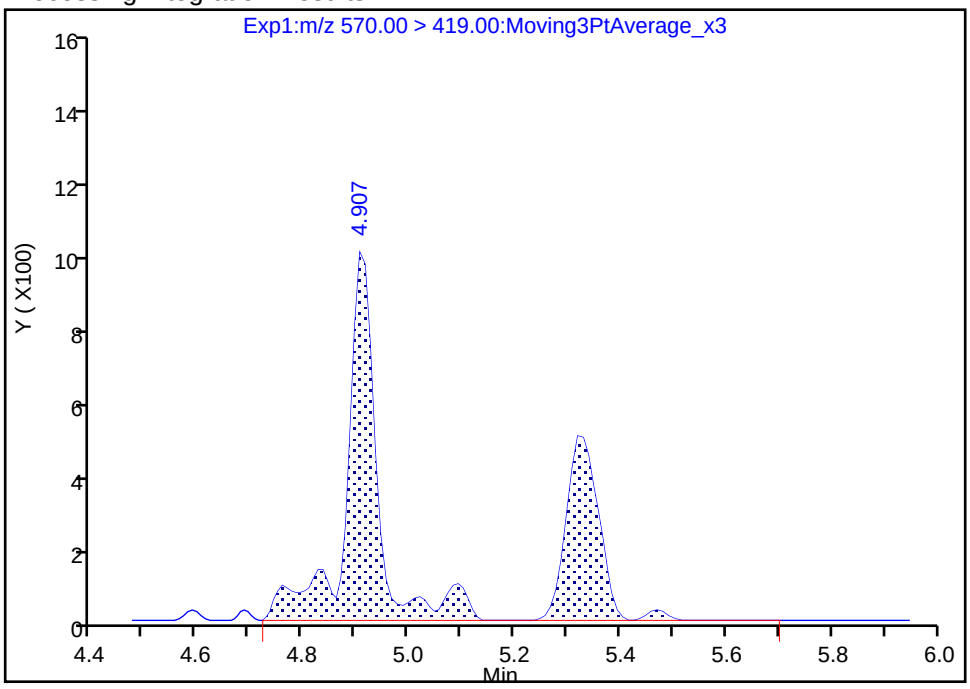
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_043.d				
Injection Date:	05-Jun-2020 06:22:50	Instrument ID:	A15		
Lims ID:	320-61353-A-1-A	Lab Sample ID:	320-61353-1		
Client ID:	NNU PLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	30	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

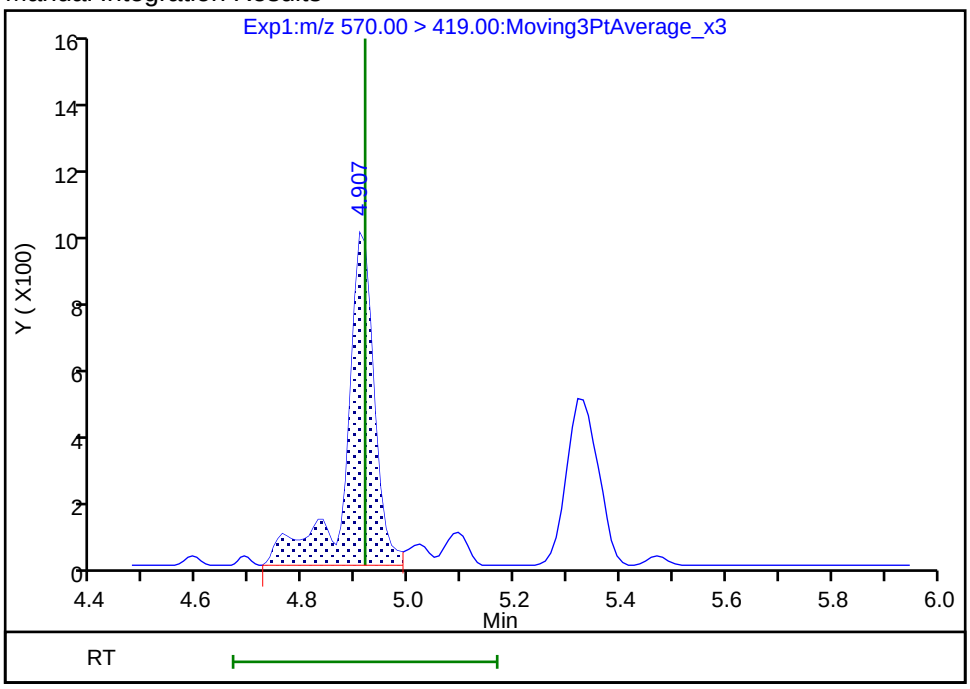
Processing Integration Results

RT: 4.91
Area: 6116
Amount: 0.023677
Amount Units: ng/ml



Manual Integration Results

RT: 4.91
Area: 3578
Amount: 0.013851
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:49:05
Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: NNU SLCRS Lab Sample ID: 320-61353-2

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_044.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 13:40

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 253.6(mL) Date Analyzed: 06/05/2020 06:31

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	270		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	130		2.0	0.48
307-24-4	Perfluorohexanoic acid (PFHxA)	190		2.0	0.57
375-85-9	Perfluoroheptanoic acid	30		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	36		2.0	0.84
375-95-1	Perfluorononanoic acid (PFNA)	1.8	J	2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	0.72	J	2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.54
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	240		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	12	B	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	9.1		2.0	0.53
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	3.1	B	2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9
27619-97-2	6:2 FTS	3.5	J	20	2.0
39108-34-4	8:2 FTS	ND		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: NNU SLCRS Lab Sample ID: 320-61353-2

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_044.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 13:40

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 253.6(mL) Date Analyzed: 06/05/2020 06:31

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	54		25-150
STL01893	13C5 PFPeA	85		25-150
STL00993	13C2 PFHxA	94		25-150
STL01892	13C4 PFHpA	99		25-150
STL00990	13C4 PFOA	98		25-150
STL00995	13C5 PFNA	101		25-150
STL00996	13C2 PFDA	89		25-150
STL00997	13C2 PFUnA	88		25-150
STL00998	13C2 PFDoA	98		25-150
STL02116	13C2 PFTeDA	40		25-150
STL02337	13C3 PFBS	91		25-150
STL00994	18O2 PFHxS	103		25-150
STL00991	13C4 PFOS	92		25-150
STL01056	13C8 FOSA	81		25-150
STL02118	d3-NMeFOSAA	64		25-150
STL02117	d5-NEtFOSAA	69		25-150
STL02279	M2-6:2 FTS	112		25-150
STL02280	M2-8:2 FTS	75		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_044.d
Lims ID: 320-61353-A-2-A
Client ID: NNU SLCRS
Sample Type: Client
Inject. Date: 05-Jun-2020 06:31:56 ALS Bottle#: 31 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 320-61353-a-2-a
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 09:50:51 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: ruangyotsakuld Date: 08-Jun-2020 09:50:51
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

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	2.539	2.549	-0.010	0.626	4847425	1.34		53.5	3775	
2 Perfluorobutanoic acid										M
212.90 > 169.00	2.539	2.557	-0.018	1.000	12453253	6.94			133	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.886	2.899	-0.013	0.712	6907319	2.13		85.3	3682	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.886	2.899	-0.013	1.000	8891055	3.19			62.0	M
D 9 13C3 PFBS										
301.90 > 80.00	2.917	2.940	-0.023	0.719	4760550	2.12		91.2	277	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.927	2.940	-0.013	1.004	11953523	5.99	Target=2.12		189	
298.90 > 99.00	2.917	2.940	-0.023	1.000	5301811		2.25(1.06-3.19)		759	
D 11 13C2 PFHxA										
315.00 > 270.00	3.256	3.278	-0.022	0.803	7380343	2.35		93.8	11714	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.256	3.278	-0.022	1.000	13000996	4.70	Target=15.31		603	
313.00 > 119.00	3.256	3.278	-0.022	1.000	838455		15.51(7.66-22.97)		630	
D 18 13C4 PFHpA										
367.00 > 322.00	3.657	3.672	-0.015	0.902	6158746	2.47		98.7	11939	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.657	3.672	-0.015	1.000	1905913	0.7654	Target=3.85		158	
363.00 > 169.00	3.657	3.672	-0.015	1.000	472812		4.03(1.93-5.78)		221	
D 17 18O2 PFHxS										
403.00 > 84.00	3.667	3.682	-0.015	0.904	2634899	2.44		103	13653	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.667	3.682	-0.015	1.000	383173	0.3063	Target=2.99		67.9	M
399.00 > 99.00	3.657	3.682	-0.025	0.997	142374		2.69(1.49-4.48)		148	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 20 M2-6:2 FTS										
429.00 > 81.00	4.031	4.042	-0.011	0.994	874564	2.65		112	246	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.031	4.042	-0.011	1.000	63904	0.0883			581	
D 25 13C4 PFOA										
417.00 > 372.00	4.055	4.059	-0.004	1.000	5550449	2.46		98.4	11595	
* 23 13C2 PFOA										
415.00 > 370.00	4.055	4.059	-0.004		5723579	2.50			13791	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.055	4.059	-0.004	1.000	2122001	0.9046	Target=2.79		203	
413.00 > 169.00	4.055	4.059	-0.004	1.000	758222		2.80(1.39-4.18)		1206	
D 27 13C4 PFOS										
503.00 > 80.00	4.412	4.405	0.007	1.088	1841280	2.20		92.0	1314	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.412	4.405	0.007	1.000	175789	0.2306	Target=5.06		245	
499.00 > 99.00	4.412	4.405	0.007	1.000	36747		4.78(2.53-7.59)		91.4	M
D 30 13C5 PFNA										
468.00 > 423.00	4.420	4.420	0.0	1.090	4361819	2.53		101	10096	
31 Perfluorononanoic acid										
463.00 > 419.00	4.420	4.420	0.0	1.000	80448	0.0455	Target=7.17		22.1	
463.00 > 169.00	4.420	4.420	0.0	1.000	10068		7.99(3.58-10.75)		49.3	
D 33 13C8 FOSA										
506.00 > 78.00	4.758	4.752	0.006	1.173	3374275	2.02		81.0	7185	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.767	4.752	0.015	1.002	92723	0.0782			299	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.758	4.752	0.006	1.000	25877	0.0182	Target=10.38		10.4	
513.00 > 169.00	4.758	4.752	0.006	1.000	1840		14.06(5.19-15.57)		12.0	
D 39 13C2 PFDA										
515.00 > 470.00	4.758	4.752	0.006	1.173	3677212	2.23		89.3	12737	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.767	4.761	0.006	1.000	4460	0.009280			65.1	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.767	4.761	0.006	1.175	705540	1.80		75.0	1680	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.924	4.907	0.017	1.214	986945	1.61		64.2	2647	
41 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.924	4.917	0.007	1.000	3106	0.0108			5.8	M
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.074	5.057	0.017	1.000	8269	0.009314	Target=7.52		5.8	
563.00 > 169.00	5.064	5.057	0.007	0.998	1494		5.53(3.76-11.28)		23.6	
D 43 13C2 PFUnA										
565.00 > 520.00	5.074	5.066	0.008	1.251	3076537	2.19		87.7	13653	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.074	5.066	0.008	1.251	1077751	1.72		68.9	2623	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.083	5.075	0.008	1.002	2413	0.007921			15.7	

Report Date: 08-Jun-2020 09:50:51 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_044.d
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 56 13C2 PFDoA										
615.00 > 570.00	5.347	5.340	0.007	1.319	3036415	2.44		97.7	13847	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.830	5.830	0.0	1.438	815926	1.00		40.1	4336	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 08-Jun-2020 09:50:51 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_044.d

Injection Date: 05-Jun-2020 06:31:56 Instrument ID: A15

Lims ID: 320-61353-A-2-A Lab Sample ID: 320-61353-2

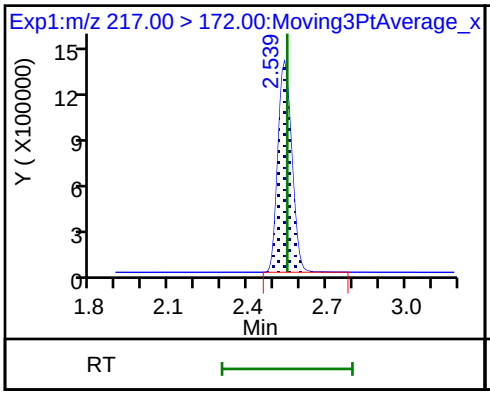
Client ID: NNU SLCRS

Operator ID: SACINSTA15 ALS Bottle#: 31 Worklist Smp#: 6

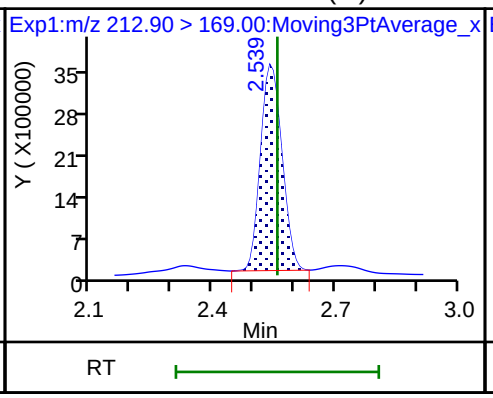
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

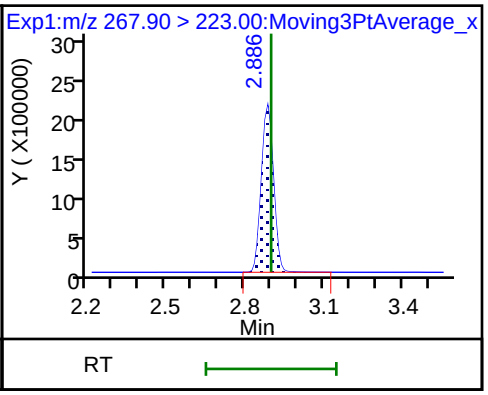
D 1 13C4 PFBA



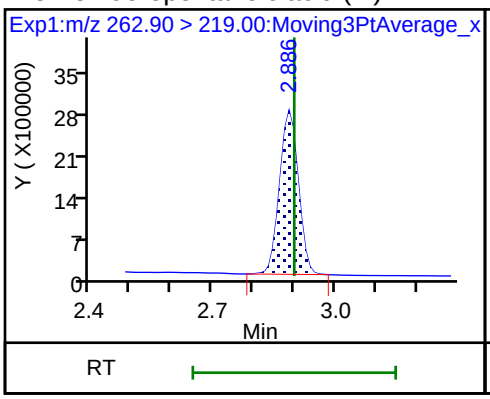
2 Perfluorobutanoic acid (M)



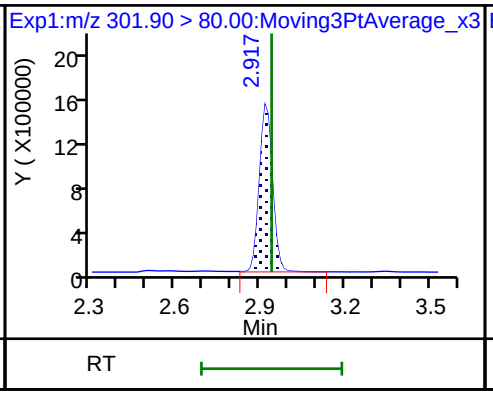
D 4 13C5 PFPeA



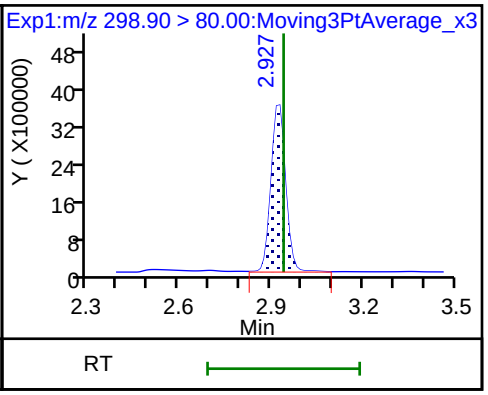
5 Perfluoropentanoic acid (M)



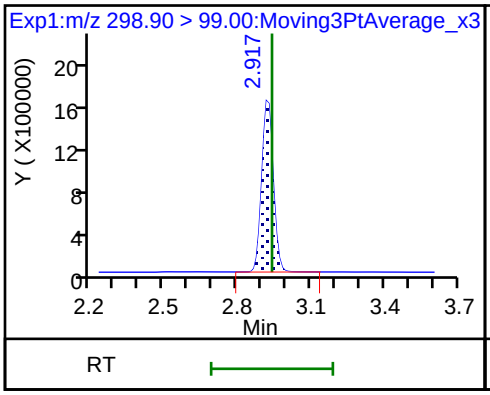
D 9 13C3 PFBS



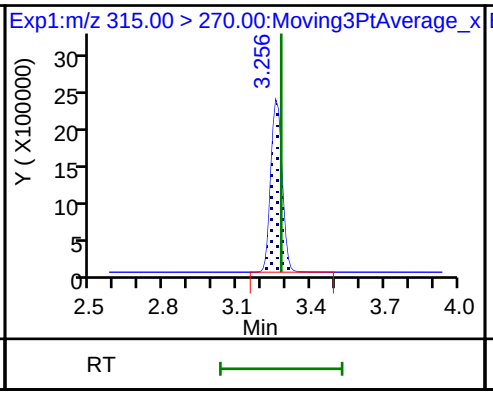
6 Perfluorobutanesulfonic acid



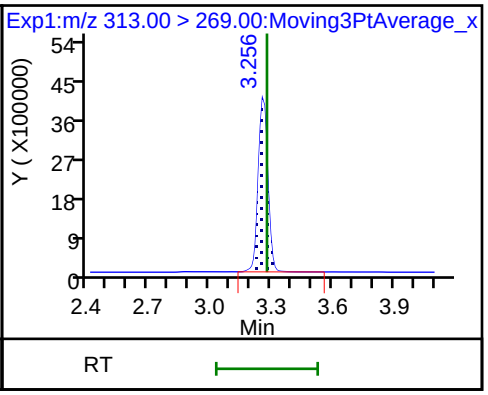
6 Perfluorobutanesulfonic acid



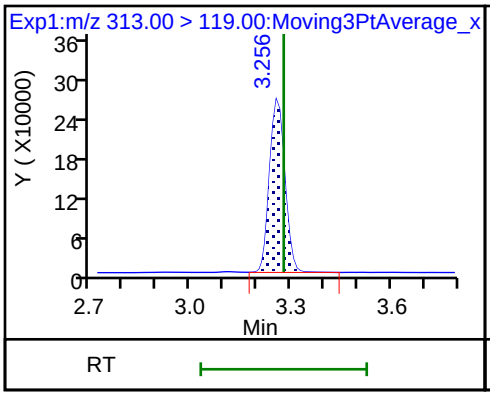
D 11 13C2 PFHxA



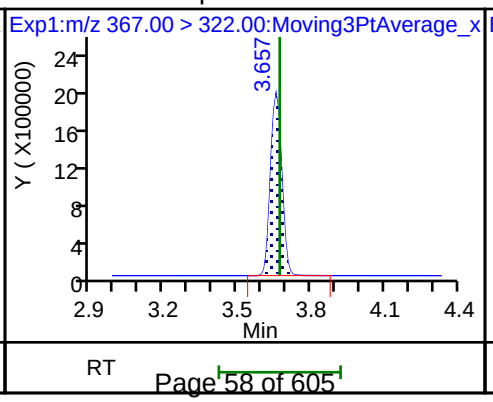
10 Perfluorohexanoic acid



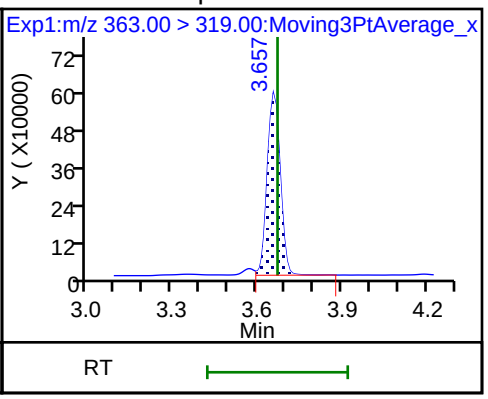
10 Perfluorohexanoic acid



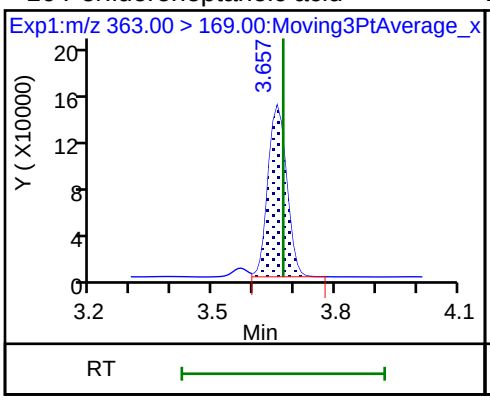
D 18 13C4 PFHpA



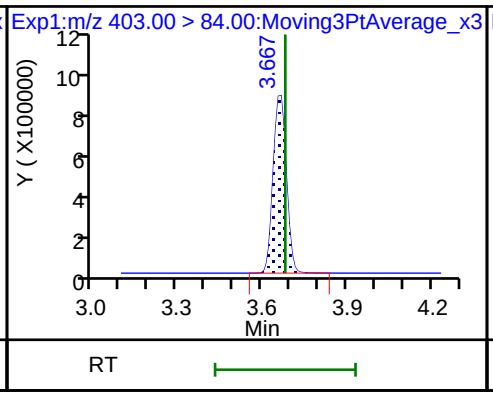
16 Perfluoroheptanoic acid



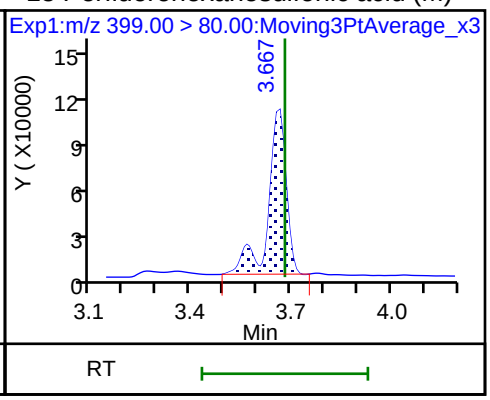
16 Perfluoroheptanoic acid



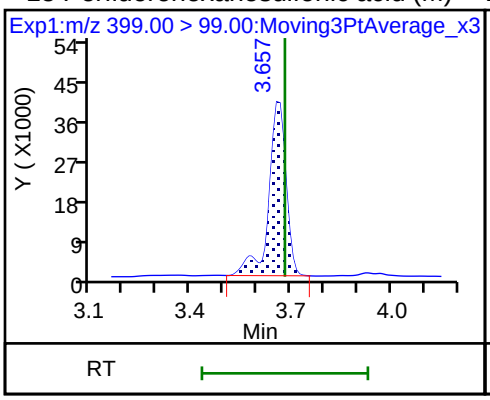
D 17 18O2 PFHxS



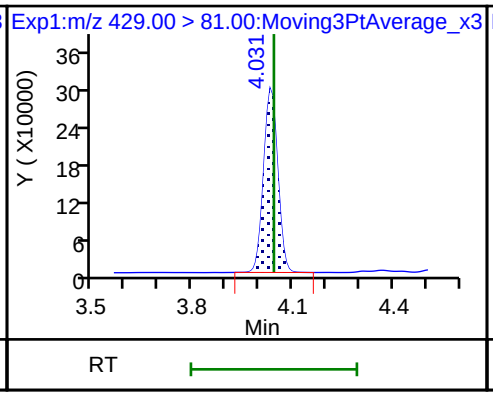
15 Perfluorohexanesulfonic acid (M)



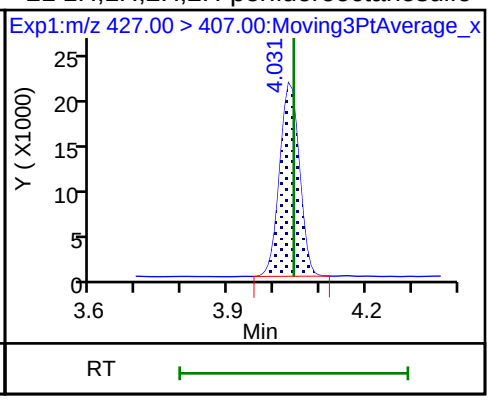
15 Perfluorohexanesulfonic acid (M)



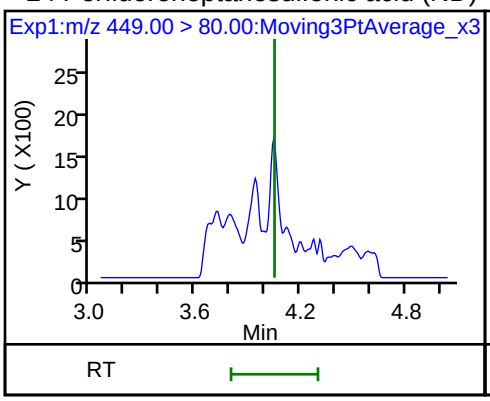
D 20 M2-6:2 FTS



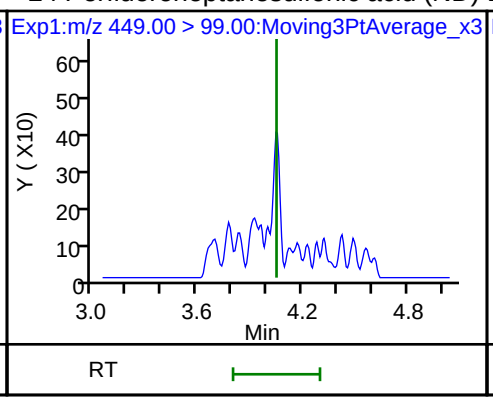
21 1H,1H,2H,2H-perfluorooctanesulfo



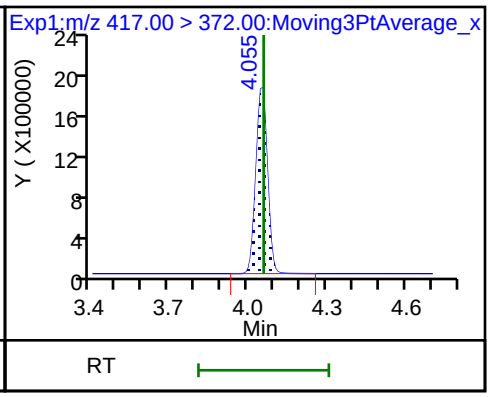
24 Perfluoroheptanesulfonic acid (ND)



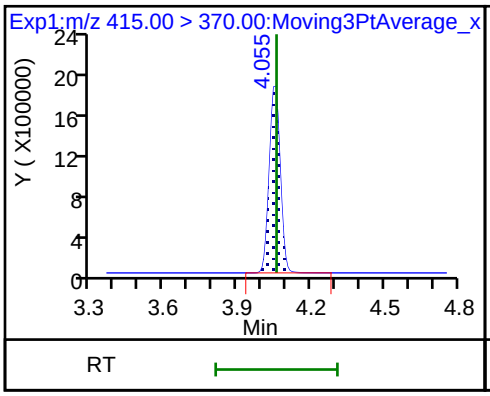
24 Perfluoroheptanesulfonic acid (ND)



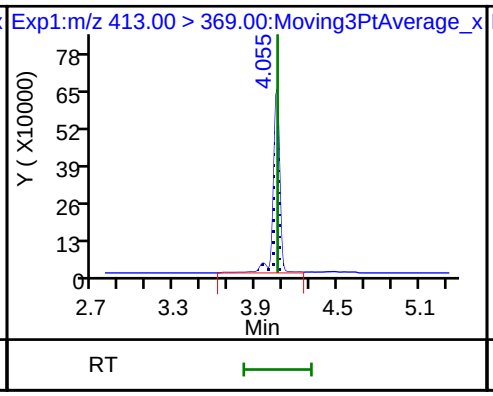
D 25 13C4 PFOA



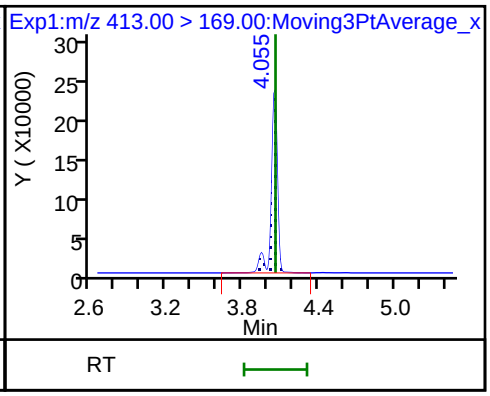
* 23 13C2 PFOA



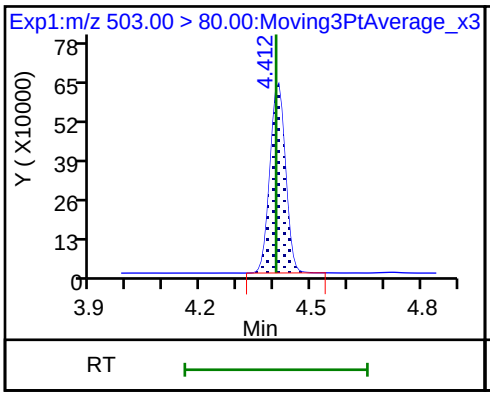
22 Perfluorooctanoic acid



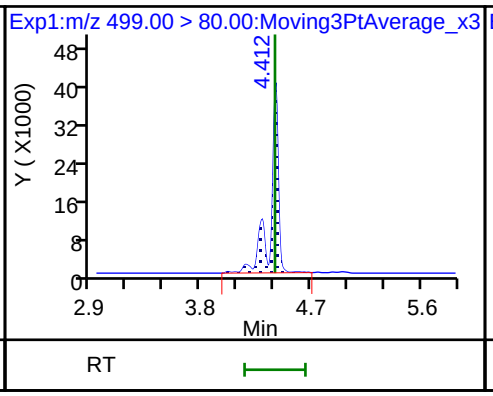
22 Perfluorooctanoic acid



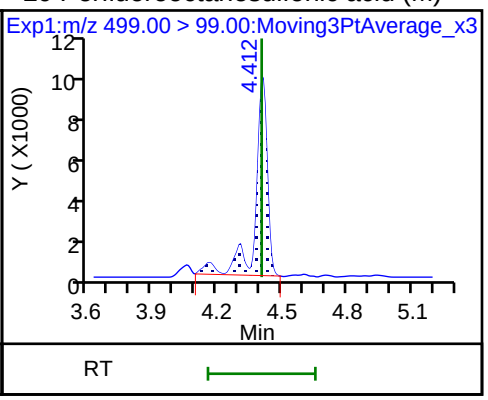
D 27 13C4 PFOS



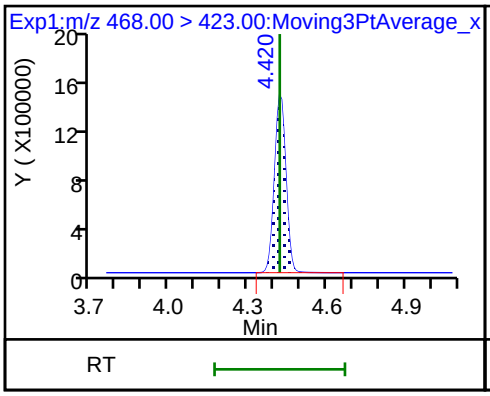
29 Perfluorooctanesulfonic acid



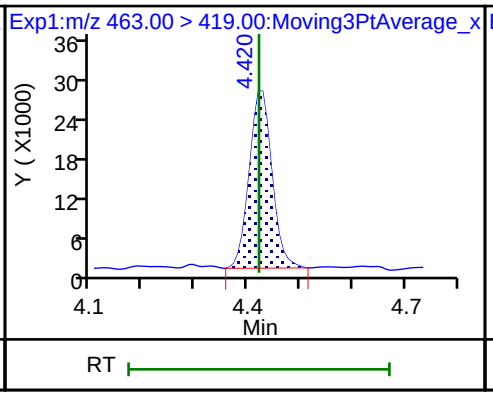
29 Perfluorooctanesulfonic acid (M)



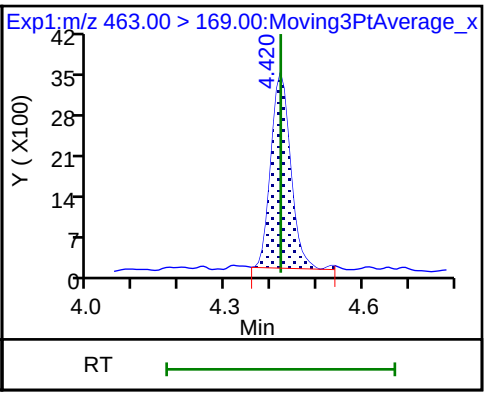
D 30 13C5 PFNA



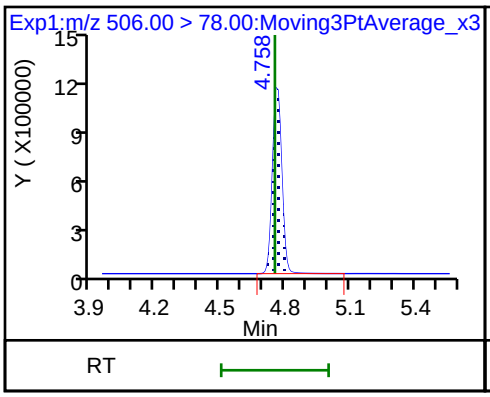
31 Perfluorononanoic acid



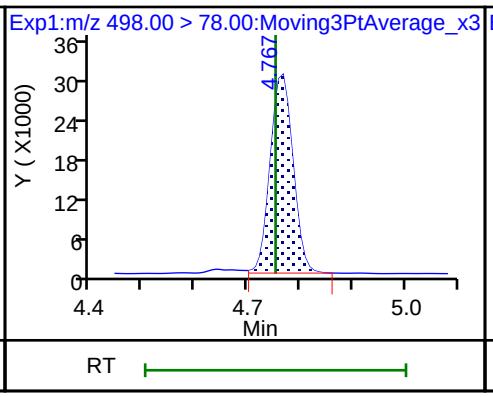
31 Perfluorononanoic acid



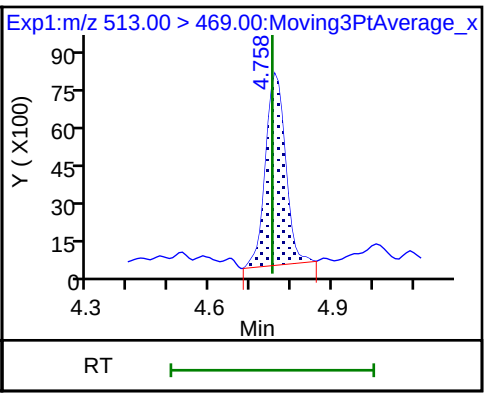
D 33 13C8 FOSA



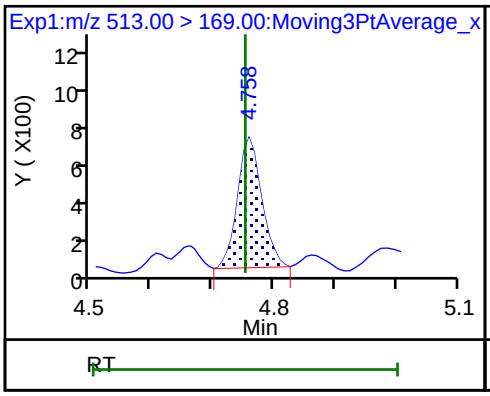
34 Perfluorooctanesulfonamide



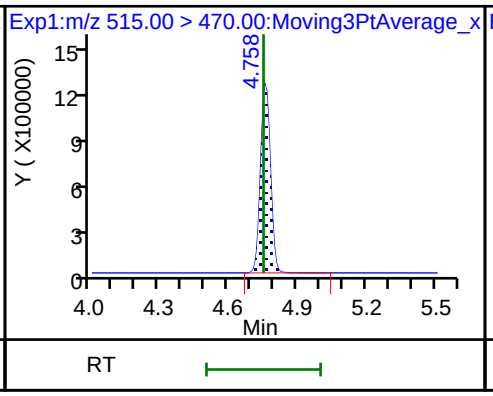
37 Perfluorodecanoic acid



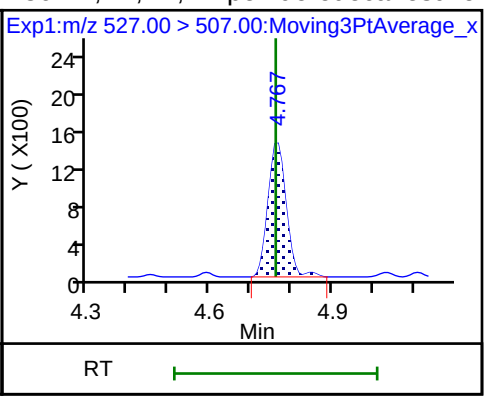
37 Perfluorodecanoic acid



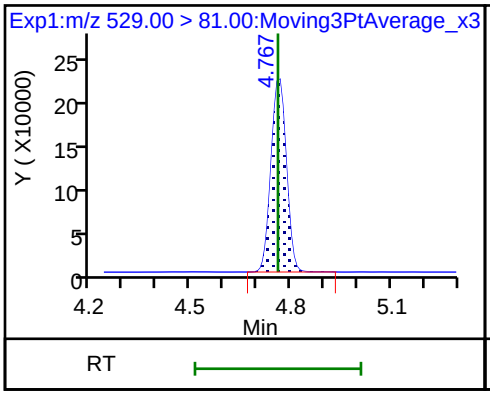
D 39 13C2 PFDA



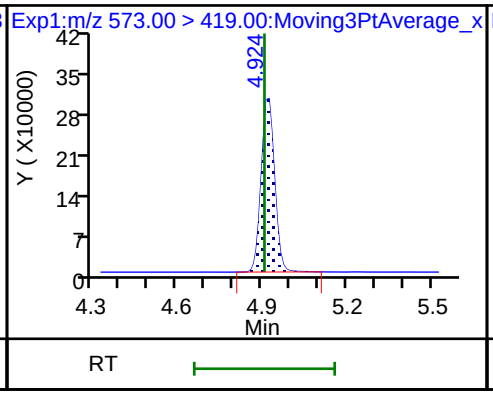
36 1H,1H,2H,2H-perfluorodecanesulfo



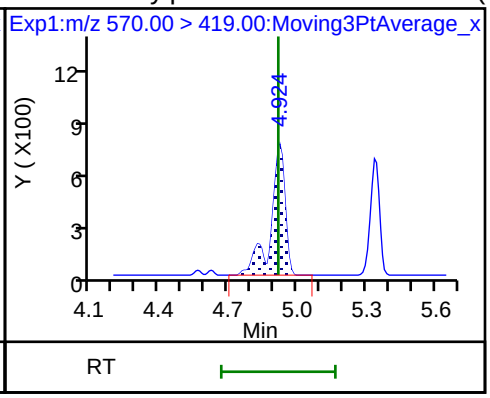
D 38 M2-8:2 FTS



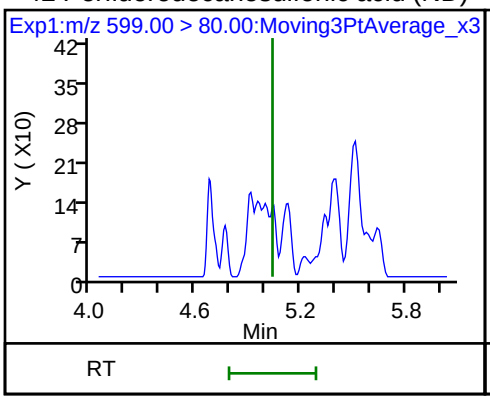
D 40 d3-NMeFOSAA



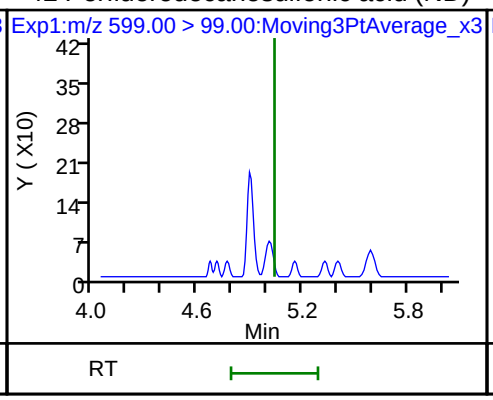
41 N-methylperfluorooctanesulfonami (M)



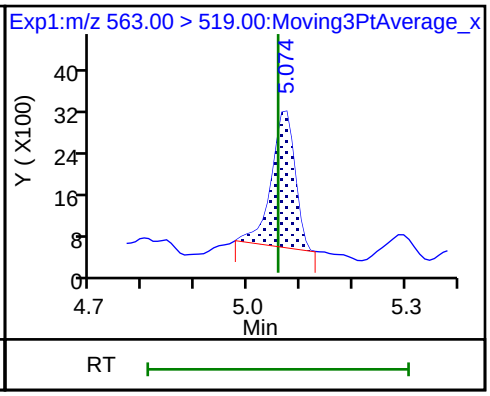
42 Perfluorodecanesulfonic acid (ND)



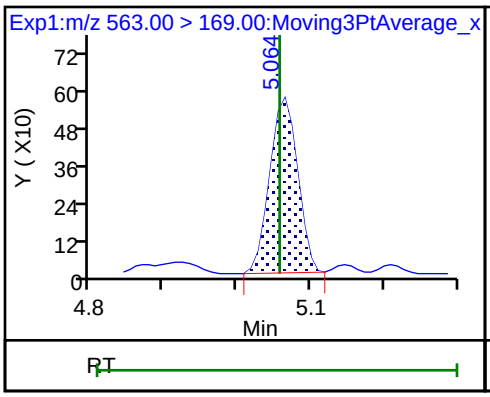
42 Perfluorodecanesulfonic acid (ND)



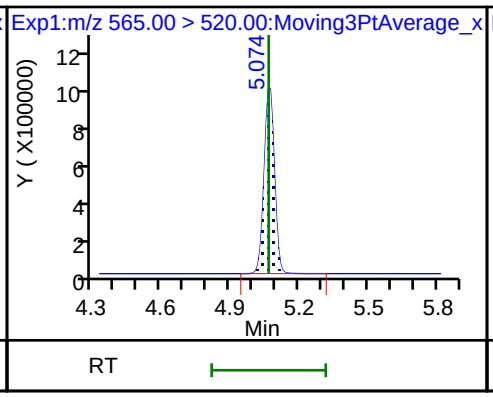
45 Perfluoroundecanoic acid



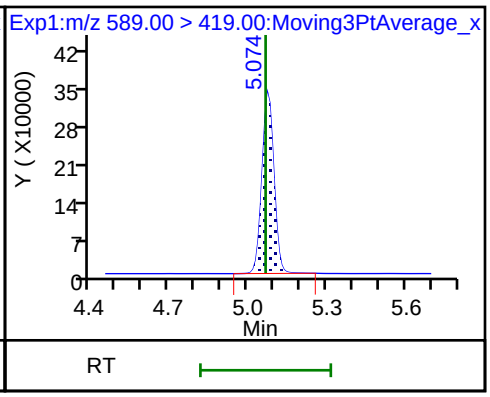
45 Perfluoroundecanoic acid



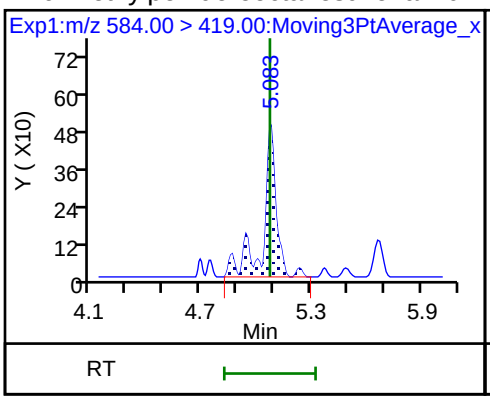
D 43 13C2 PFUnA



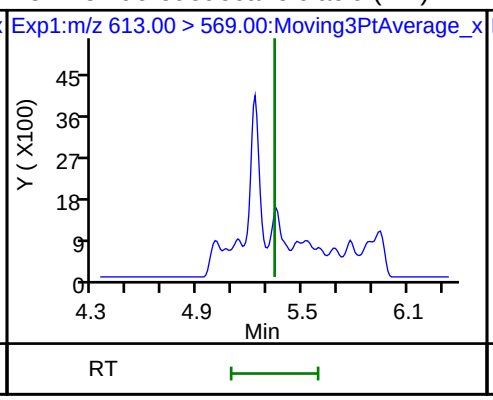
D 44 d5-NEtFOSAA



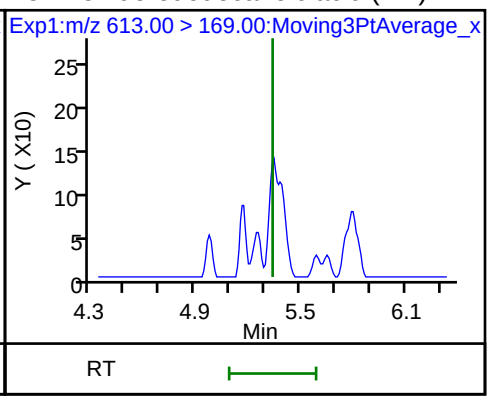
46 N-ethylperfluorooctanesulfonamid



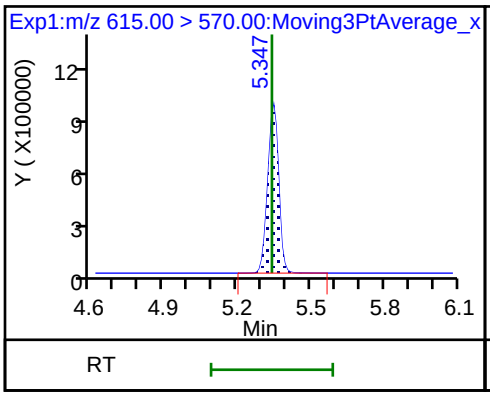
57 Perfluorododecanoic acid (ND)



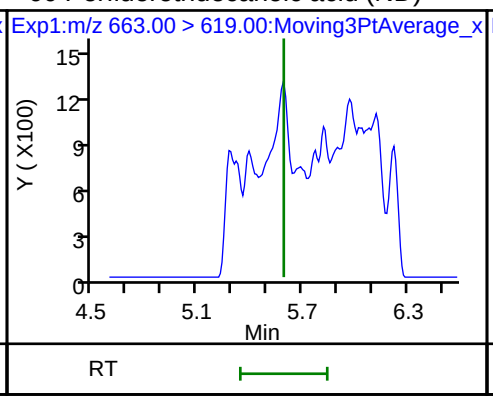
57 Perfluorododecanoic acid (ND)



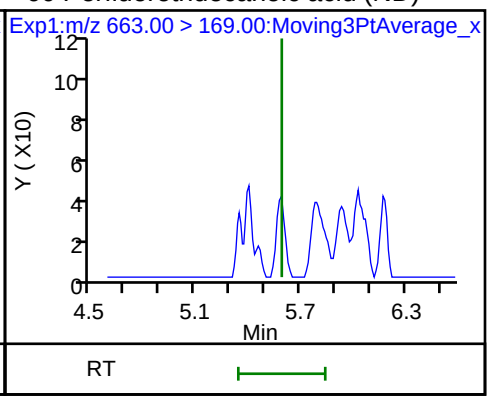
D 56 13C2 PFDoA



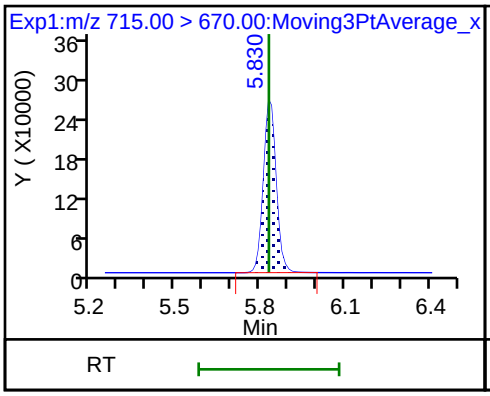
60 Perfluorotridecanoic acid (ND)



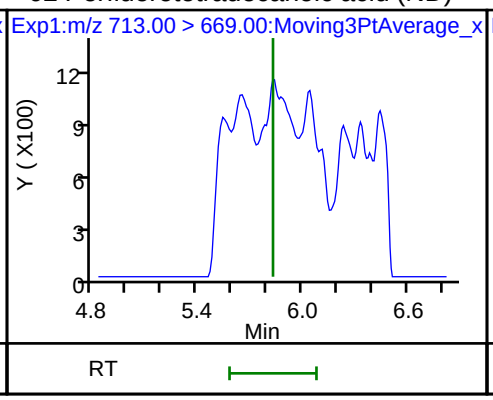
60 Perfluorotridecanoic acid (ND)



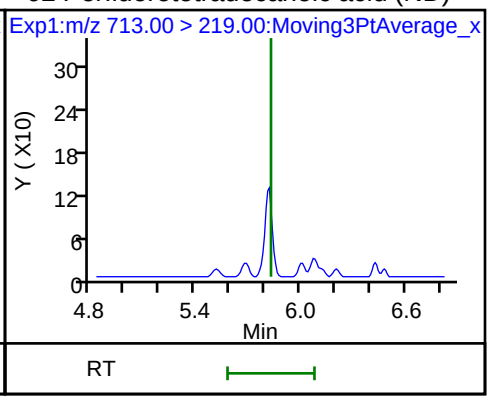
D 61 13C2 PFTeDA



62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



Eurofins TestAmerica, Sacramento

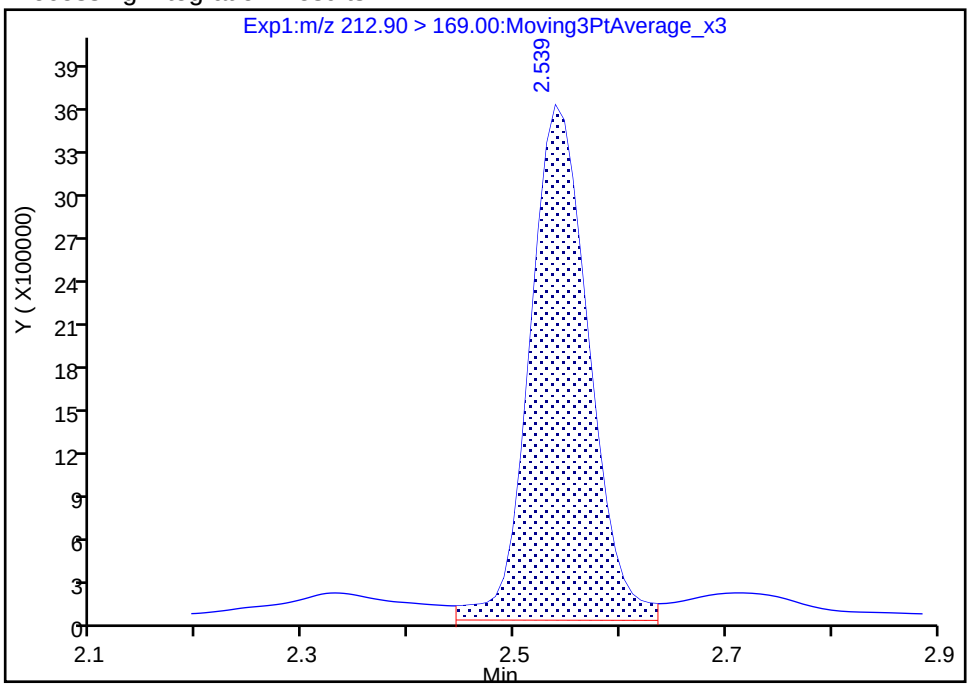
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_044.d				
Injection Date:	05-Jun-2020 06:31:56	Instrument ID:	A15		
Lims ID:	320-61353-A-2-A	Lab Sample ID:	320-61353-2		
Client ID:	NNU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	31	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

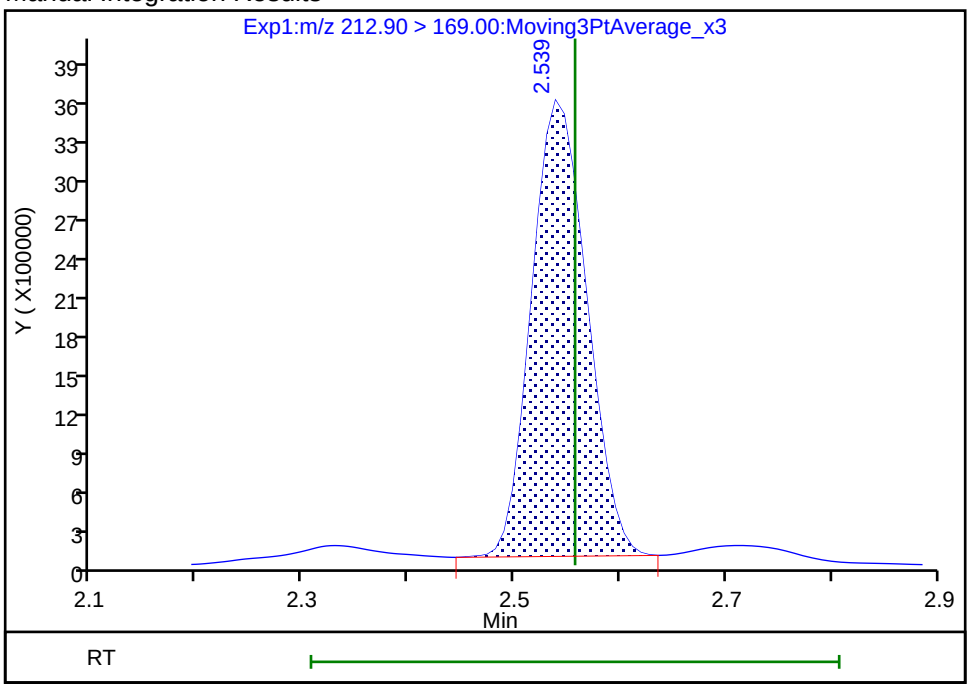
Processing Integration Results

RT: 2.54
Area: 13661790
Amount: 7.609329
Amount Units: ng/ml



Manual Integration Results

RT: 2.54
Area: 12453253
Amount: 6.936199
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:49:38
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

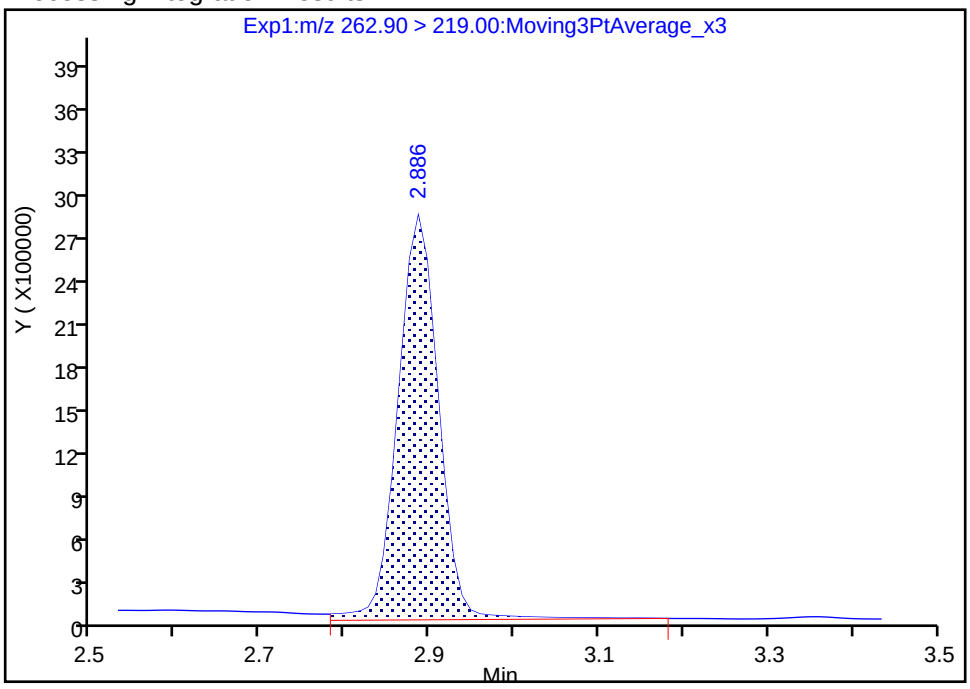
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_044.d				
Injection Date:	05-Jun-2020 06:31:56	Instrument ID:	A15		
Lims ID:	320-61353-A-2-A	Lab Sample ID:	320-61353-2		
Client ID:	NNU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	31	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

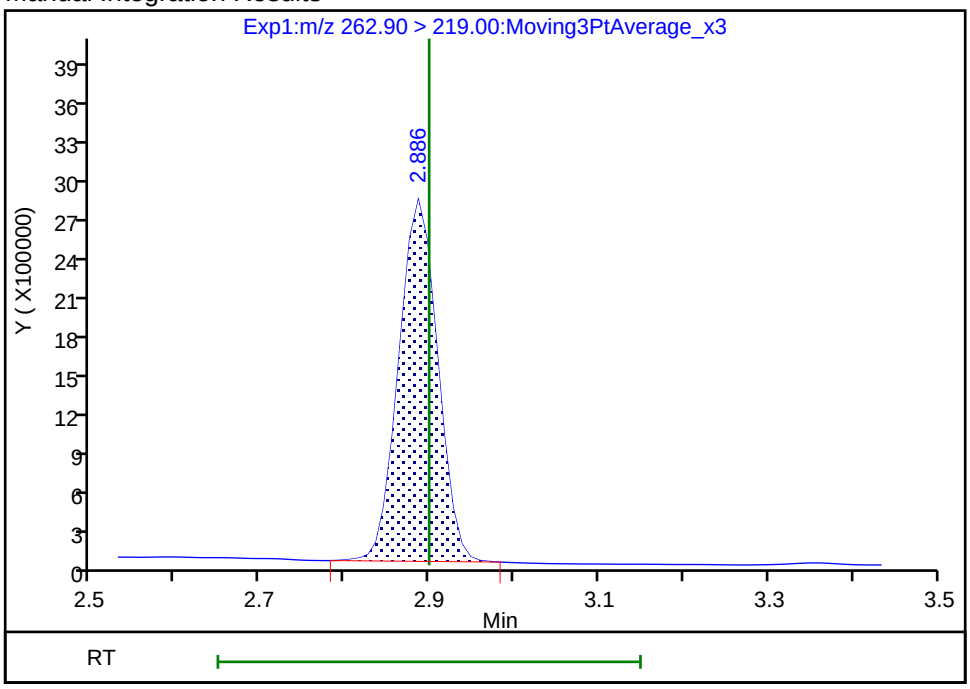
Processing Integration Results

RT: 2.89
Area: 9411081
Amount: 3.381187
Amount Units: ng/ml



Manual Integration Results

RT: 2.89
Area: 8891055
Amount: 3.194353
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:49:45
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

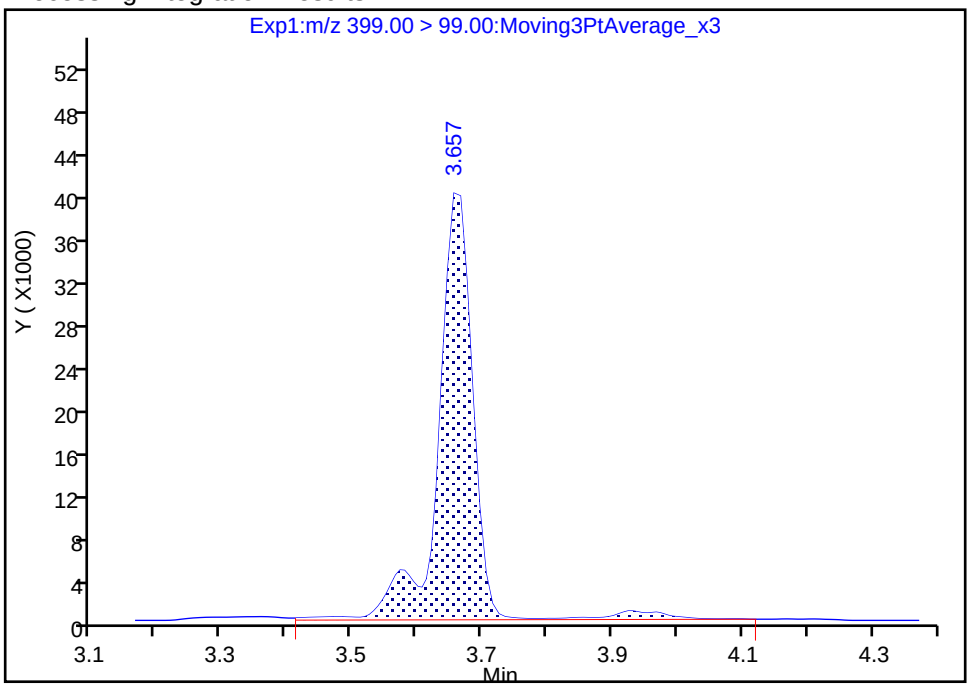
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_044.d				
Injection Date:	05-Jun-2020 06:31:56	Instrument ID:	A15		
Lims ID:	320-61353-A-2-A	Lab Sample ID:	320-61353-2		
Client ID:	NNU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	31	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

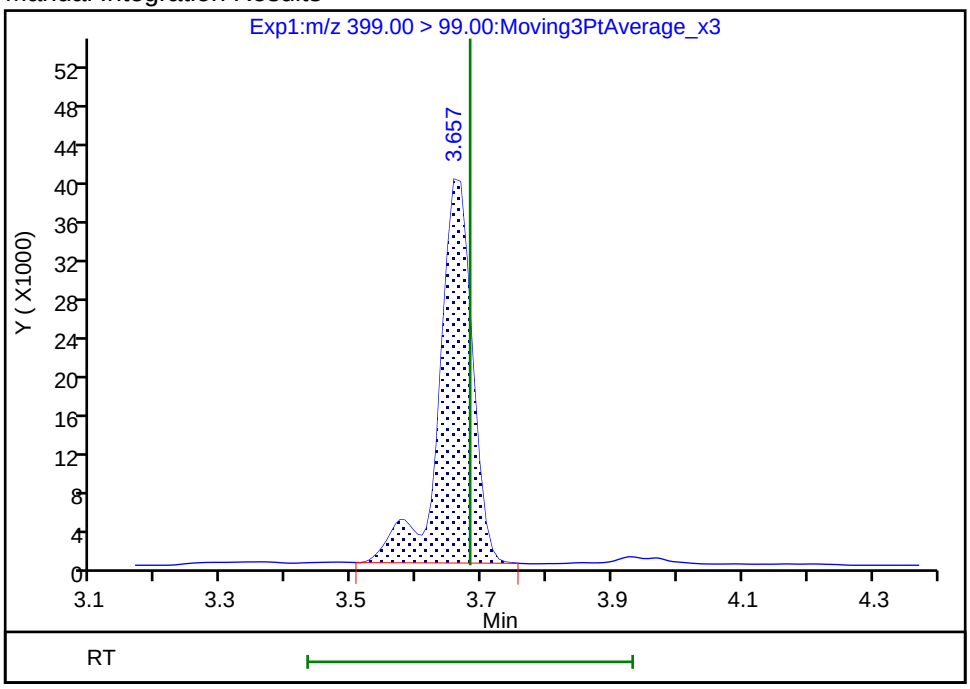
Processing Integration Results

RT: 3.66
Area: 151853
Amount: 0.329602
Amount Units: ng/ml



Manual Integration Results

RT: 3.66
Area: 142374
Amount: 0.306259
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:49:57
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

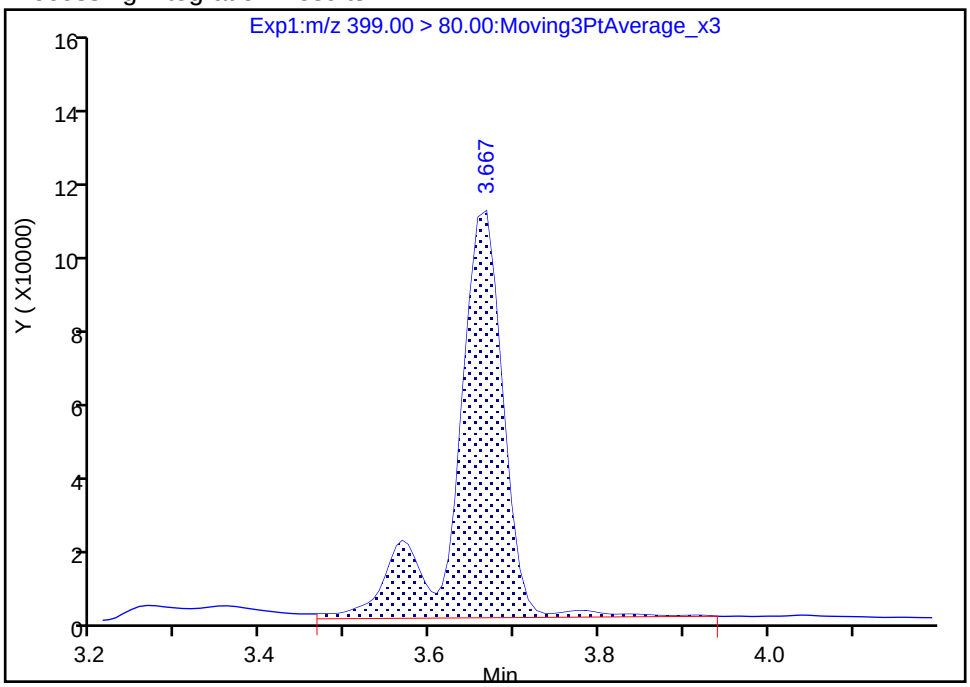
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_044.d				
Injection Date:	05-Jun-2020 06:31:56	Instrument ID:	A15		
Lims ID:	320-61353-A-2-A	Lab Sample ID:	320-61353-2		
Client ID:	NNU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	31	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

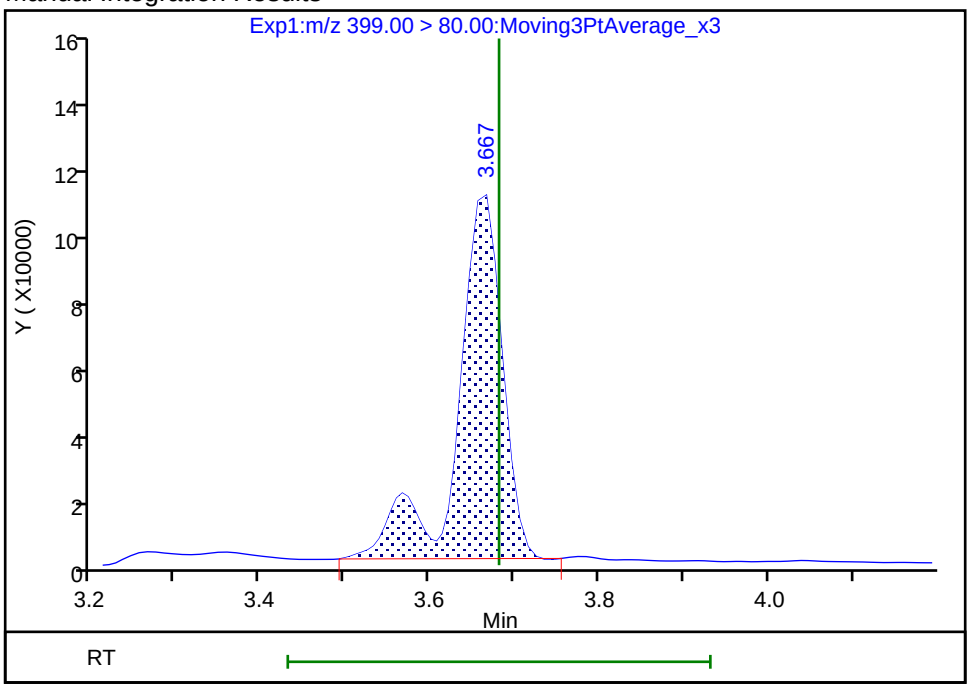
Processing Integration Results

RT: 3.67
Area: 412379
Amount: 0.329602
Amount Units: ng/ml



Manual Integration Results

RT: 3.67
Area: 383173
Amount: 0.306259
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:50:02

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

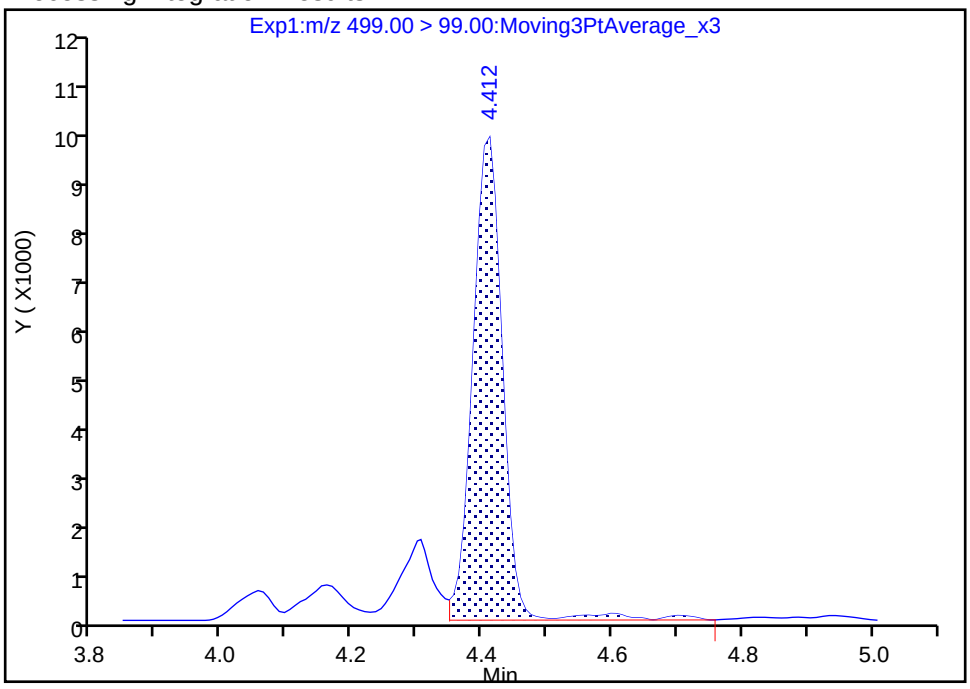
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_044.d				
Injection Date:	05-Jun-2020 06:31:56	Instrument ID:	A15		
Lims ID:	320-61353-A-2-A	Lab Sample ID:	320-61353-2		
Client ID:	NNU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	31	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

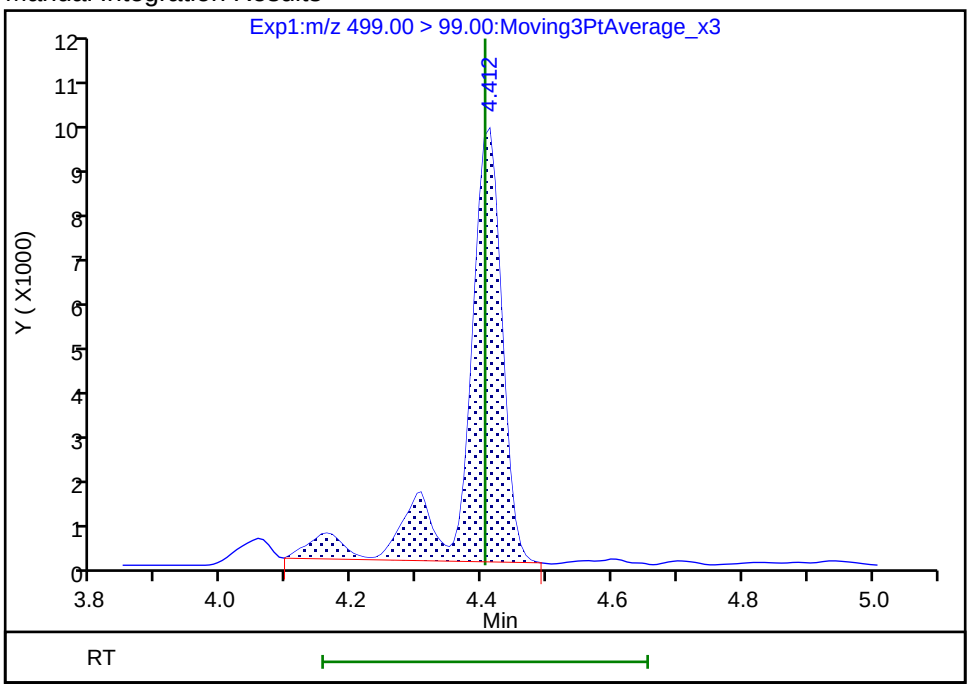
Processing Integration Results

RT: 4.41
Area: 31100
Amount: 0.230617
Amount Units: ng/ml



Manual Integration Results

RT: 4.41
Area: 36747
Amount: 0.230617
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:50:26
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento

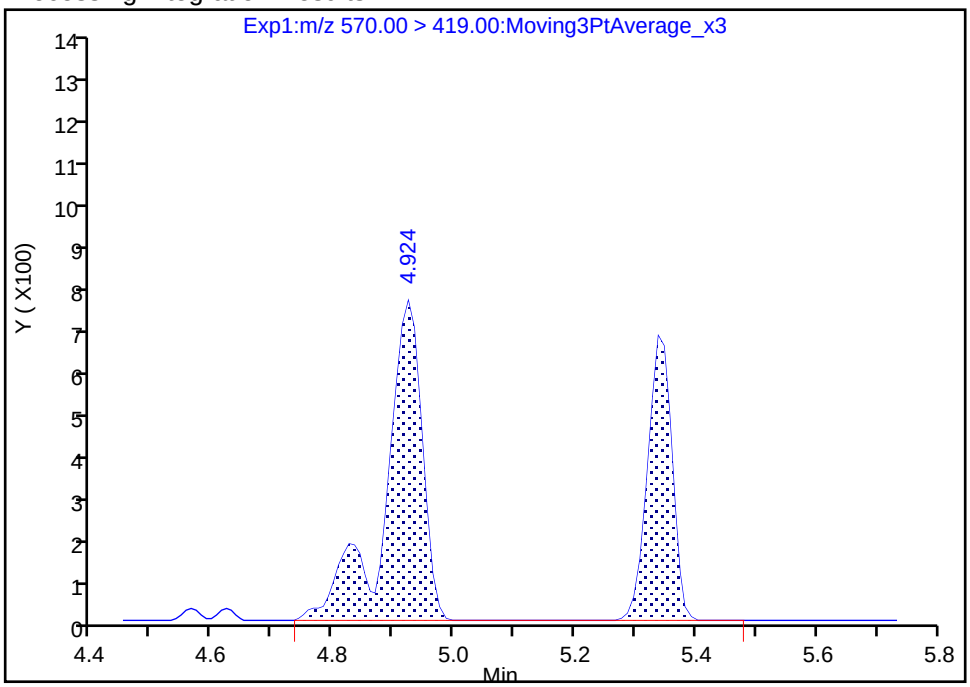
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_044.d				
Injection Date:	05-Jun-2020 06:31:56	Instrument ID:	A15		
Lims ID:	320-61353-A-2-A	Lab Sample ID:	320-61353-2		
Client ID:	NNU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	31	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

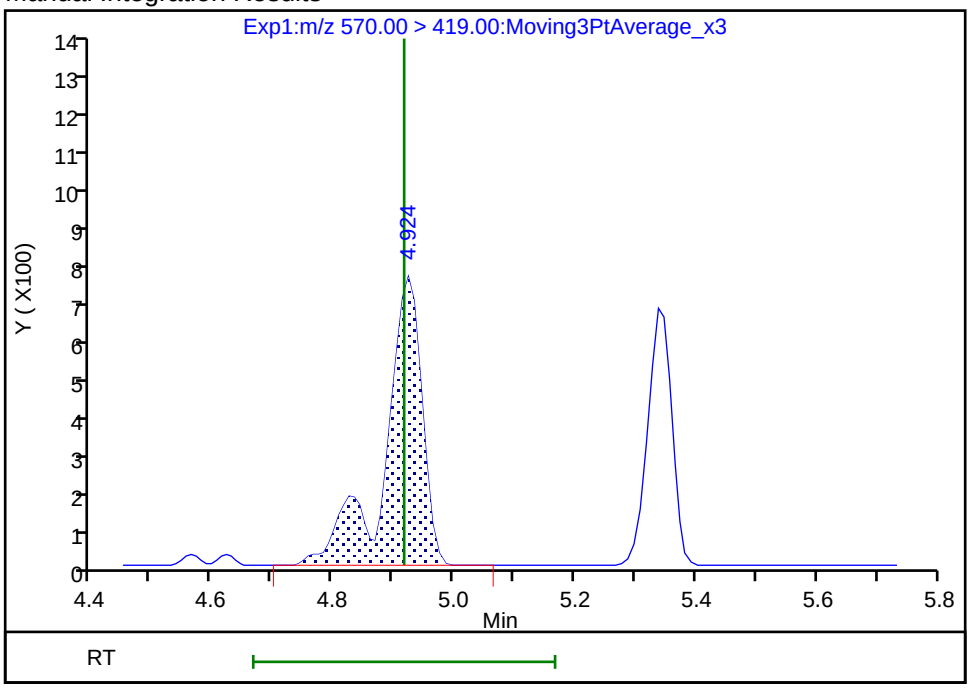
Processing Integration Results

RT: 4.92
Area: 4897
Amount: 0.016999
Amount Units: ng/ml



Manual Integration Results

RT: 4.92
Area: 3106
Amount: 0.010782
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:50:37
Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: ONU SLCRS Lab Sample ID: 320-61353-3

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_045.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 13:50

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 247.4(mL) Date Analyzed: 06/05/2020 06:41

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	73		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	43		2.0	0.50
307-24-4	Perfluorohexanoic acid (PFHxA)	60		2.0	0.59
375-85-9	Perfluoroheptanoic acid	25		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	44		2.0	0.86
375-95-1	Perfluorononanoic acid (PFNA)	7.3		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	2.1		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.56
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	51		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	13	B	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.42	J	2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	32		2.0	0.55
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.76	J B	2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9
27619-97-2	6:2 FTS	ND		20	2.0
39108-34-4	8:2 FTS	ND		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: ONU SLCRS Lab Sample ID: 320-61353-3

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_045.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 13:50

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 247.4(mL) Date Analyzed: 06/05/2020 06:41

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	43		25-150
STL01893	13C5 PFPeA	65		25-150
STL00993	13C2 PFHxA	83		25-150
STL01892	13C4 PFHpA	92		25-150
STL00990	13C4 PFOA	96		25-150
STL00995	13C5 PFNA	100		25-150
STL00996	13C2 PFDA	104		25-150
STL00997	13C2 PFUnA	94		25-150
STL00998	13C2 PFDoA	86		25-150
STL02116	13C2 PFTeDA	77		25-150
STL02337	13C3 PFBS	79		25-150
STL00994	18O2 PFHxS	93		25-150
STL00991	13C4 PFOS	87		25-150
STL01056	13C8 FOSA	59		25-150
STL02118	d3-NMeFOSAA	88		25-150
STL02117	d5-NEtFOSAA	98		25-150
STL02279	M2-6:2 FTS	186	*5	25-150
STL02280	M2-8:2 FTS	153	*5	25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d
Lims ID: 320-61353-A-3-A
Client ID: ONU SLCRS
Sample Type: Client
Inject. Date: 05-Jun-2020 06:41:03 ALS Bottle#: 32 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 320-61353-a-3-a
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 09:56:01 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: ruangyotsakuld Date: 08-Jun-2020 09:56:01
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

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	2.539	2.549	-0.010	0.628	4331502	1.08		43.3	4515	
2 Perfluorobutanoic acid										M
212.90 > 169.00	2.539	2.557	-0.018	1.000	2882561	1.80			56.3	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.886	2.899	-0.013	0.714	5789457	1.62		64.9	1749	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.886	2.899	-0.013	1.000	2477334	1.06			11.8	M
D 9 13C3 PFBS										
301.90 > 80.00	2.917	2.940	-0.023	0.722	4561680	1.84		79.3	179	
6 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.917	2.940	-0.023	1.000	2419017	1.26	Target=2.12		26.0	M
298.90 > 99.00	2.917	2.940	-0.023	1.000	1136487		2.13(1.06-3.19)		102	
D 11 13C2 PFHxA										
315.00 > 270.00	3.246	3.278	-0.032	0.804	7231358	2.08		83.4	7822	
10 Perfluorohexanoic acid										M
313.00 > 269.00	3.256	3.278	-0.022	1.003	4022511	1.48	Target=15.31		34.7	M
313.00 > 119.00	3.256	3.278	-0.022	1.003	264575		15.20(7.66-22.97)		125	
D 18 13C4 PFHpA										
367.00 > 322.00	3.647	3.672	-0.025	0.903	6300828	2.29		91.6	11034	
16 Perfluoroheptanoic acid										M
363.00 > 319.00	3.647	3.672	-0.025	1.000	1558273	0.6116	Target=3.85		27.5	M
363.00 > 169.00	3.647	3.672	-0.025	1.000	401819		3.88(1.93-5.78)		291	
D 17 18O2 PFHxS										
403.00 > 84.00	3.657	3.682	-0.025	0.905	2606265	2.19		92.6	11552	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.657	3.682	-0.025	1.000	411166	0.3322	Target=2.99		20.5	M
399.00 > 99.00	3.657	3.682	-0.025	1.000	135879		3.03(1.49-4.48)		71.4	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 20 M2-6:2 FTS										
429.00 > 81.00	4.023	4.042	-0.019	0.996	1602658	4.41		186	331	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.023	4.042	-0.019	1.000	48054	0.0362			227	
24 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	4.039	4.051	-0.012	0.917	9132	0.0105	Target=3.81		1.1	M
449.00 > 99.00	4.039	4.051	-0.012	0.917	2648		3.45(1.91-5.72)		2.1	
D 25 13C4 PFOA										
417.00 > 372.00	4.039	4.059	-0.020	1.000	5952094	2.39		95.7	9341	
* 23 13C2 PFOA										
415.00 > 370.00	4.039	4.059	-0.020		6312964	2.50			12801	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.039	4.059	-0.020	1.000	2720445	1.08	Target=2.79		76.2	M
413.00 > 169.00	4.039	4.059	-0.020	1.000	995723		2.73(1.39-4.18)		1212	M
D 27 13C4 PFOS										
503.00 > 80.00	4.404	4.405	-0.001	1.090	1911017	2.07		86.5	351	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.404	4.405	-0.001	1.000	619523	0.7831	Target=5.06		73.0	M
499.00 > 99.00	4.404	4.405	-0.001	1.000	108484		5.71(2.53-7.59)		112	M
D 30 13C5 PFNA										
468.00 > 423.00	4.412	4.420	-0.008	1.092	4775346	2.51		100	6403	
31 Perfluorononanoic acid										M
463.00 > 419.00	4.412	4.420	-0.008	1.000	347908	0.1796	Target=7.17		24.4	M
463.00 > 169.00	4.412	4.420	-0.008	1.000	52676		6.60(3.58-10.75)		100	
D 33 13C8 FOSA										
506.00 > 78.00	4.752	4.752	0.0	1.176	2714839	1.48		59.1	4623	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.760	4.752	0.008	1.002	17912	0.0188			21.0	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.752	4.752	0.0	1.000	96661	0.0529	Target=10.38		12.0	
513.00 > 169.00	4.752	4.752	0.0	1.000	10954		8.82(5.19-15.57)		53.8	
D 39 13C2 PFDA										
515.00 > 470.00	4.752	4.752	0.0	1.176	4727954	2.60		104	12580	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.752	4.761	-0.009	1.000	6789	0.006285			70.7	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.752	4.761	-0.009	1.176	1585607	3.66		153	779	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.916	4.907	0.009	1.217	1494028	2.20		88.2	2488	
45 Perfluoroundecanoic acid										Ma
563.00 > 519.00	5.066	5.057	0.009	1.000	9876	0.009453	Target=7.52		2.2	a
563.00 > 169.00	5.057	5.057	0.0	0.998	1121		8.81(3.76-11.28)		5.8	M
D 43 13C2 PFUnA										
565.00 > 520.00	5.066	5.066	0.0	1.254	3620451	2.34		93.5	9957	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.075	5.066	0.009	1.256	1686561	2.44		97.7	4079	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
46 N-ethylperfluorooctanesulfonamid										M
584.00 > 419.00	5.075	5.075	0.0	1.000	8957	0.0188			76.6	M
D 56 13C2 PFDoA										
615.00 > 570.00	5.349	5.340	0.009	1.324	2951596	2.15		86.1	10798	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.839	5.830	0.009	1.445	1732528	1.93		77.3	6106	

QC Flag Legend

Review Flags

M - Manually Integrated

a - User Assigned ID

Report Date: 08-Jun-2020 09:56:01 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d

Injection Date: 05-Jun-2020 06:41:03 Instrument ID: A15

Lims ID: 320-61353-A-3-A Lab Sample ID: 320-61353-3

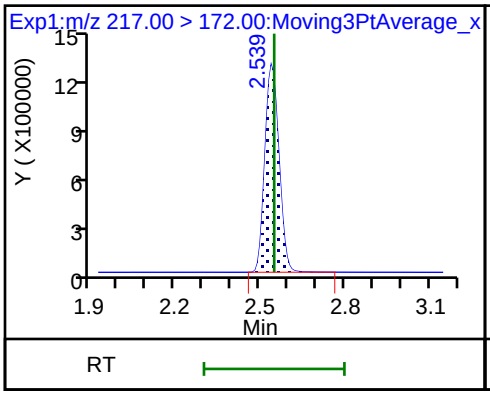
Client ID: ONU SLCRS

Operator ID: SACINSTA15 ALS Bottle#: 32 Worklist Smp#: 7

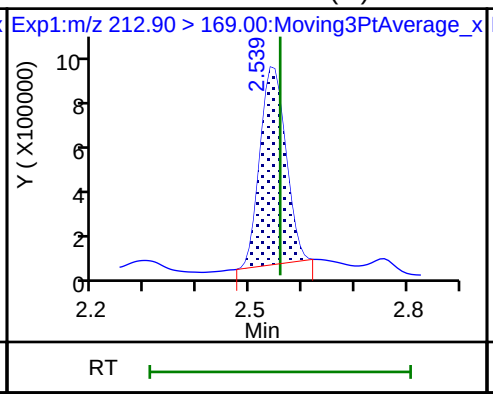
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

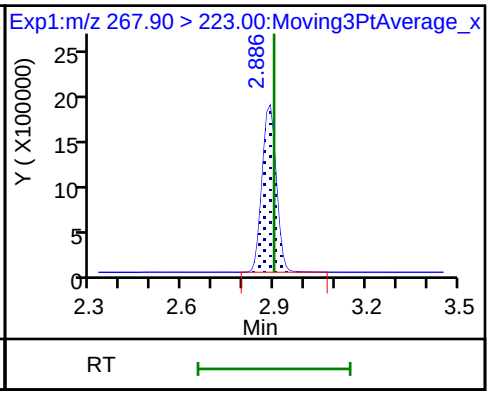
D 1 13C4 PFBA



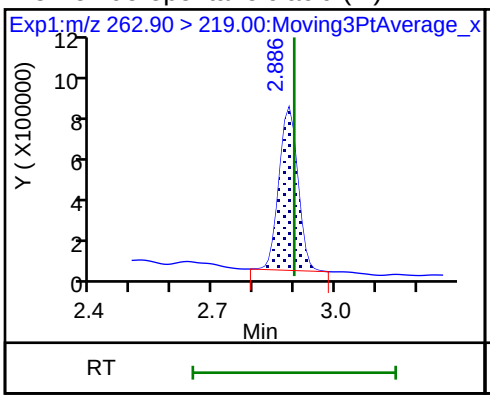
2 Perfluorobutanoic acid (M)



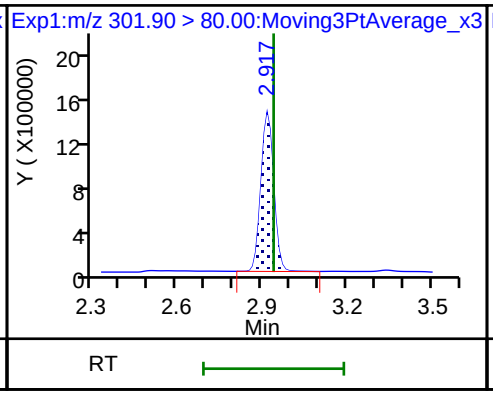
D 4 13C5 PFPeA



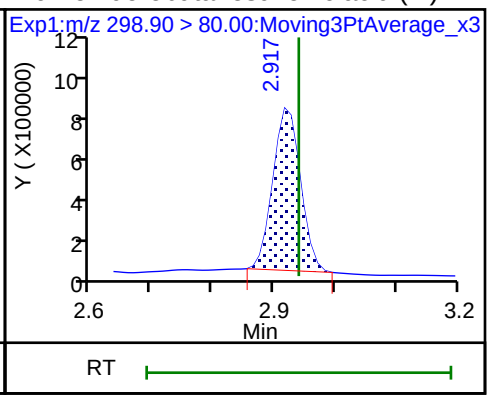
5 Perfluoropentanoic acid (M)



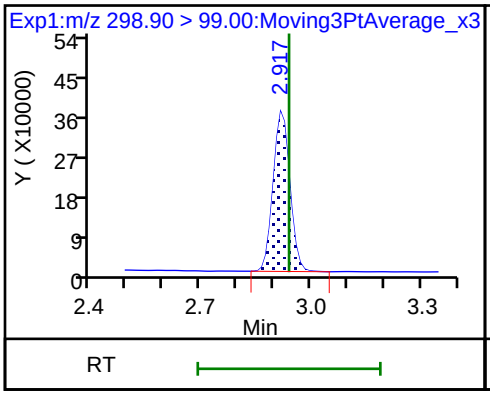
D 9 13C3 PFBS



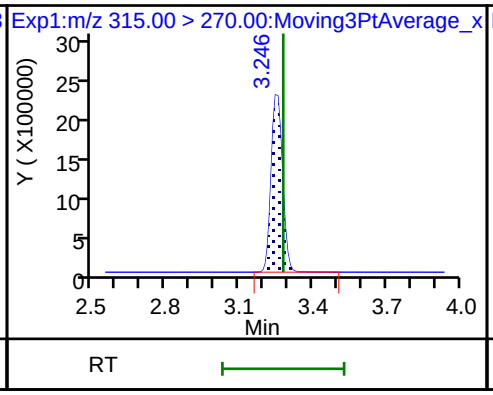
6 Perfluorobutanesulfonic acid (M)



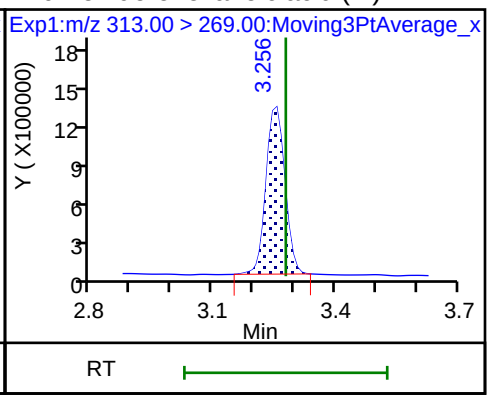
6 Perfluorobutanesulfonic acid



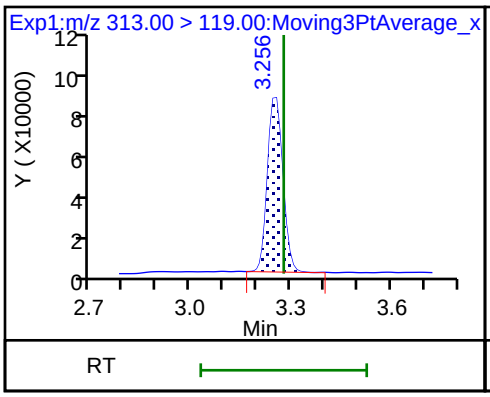
D 11 13C2 PFHxA



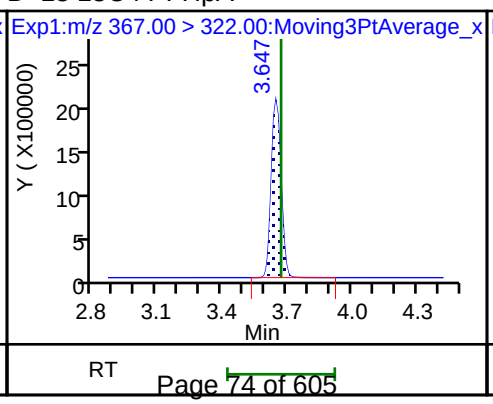
10 Perfluorohexanoic acid (M)



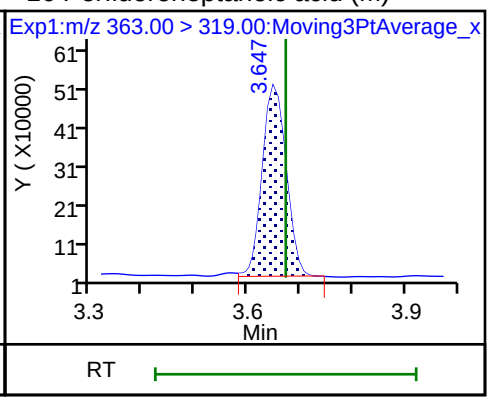
10 Perfluorohexanoic acid



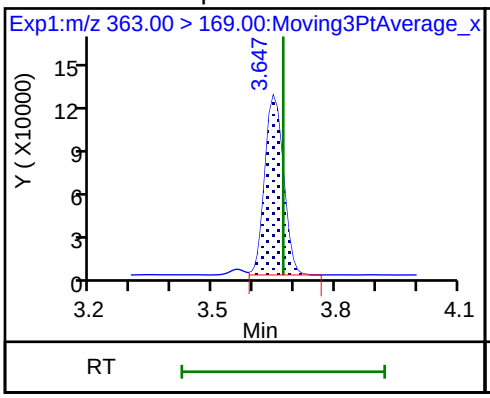
D 18 13C4 PFHpA



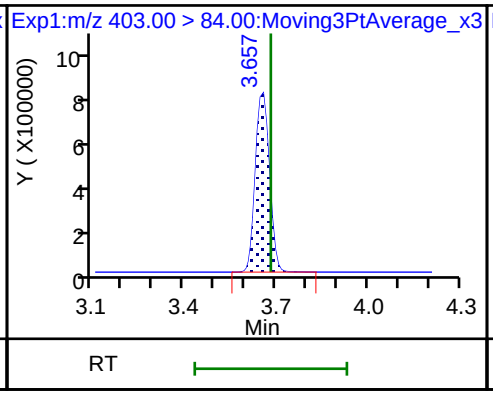
16 Perfluoroheptanoic acid (M)



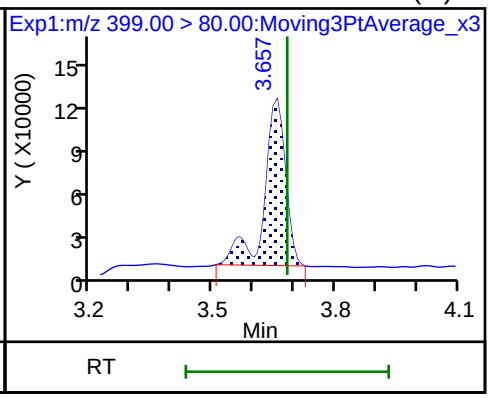
16 Perfluoroheptanoic acid



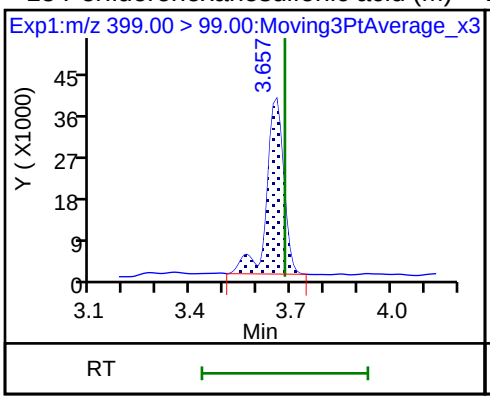
D 17 18O2 PFHxS



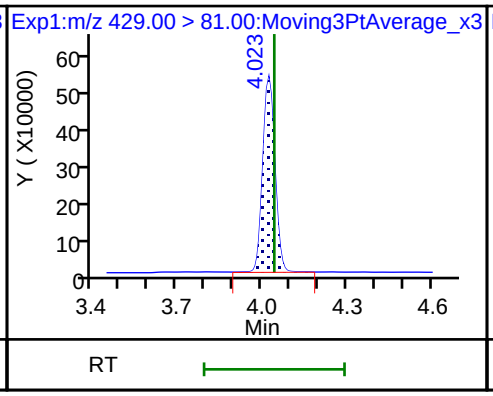
15 Perfluorohexanesulfonic acid (M)



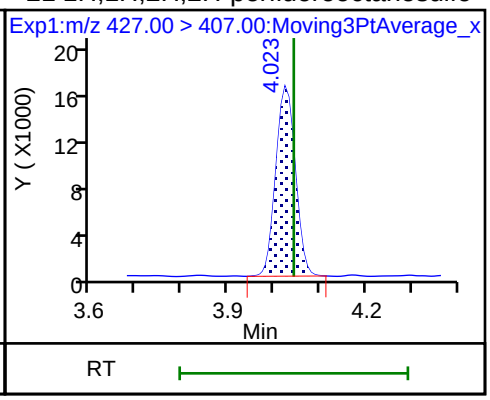
15 Perfluorohexanesulfonic acid (M)



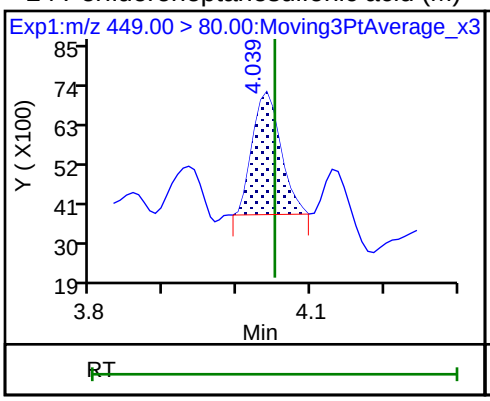
D 20 M2-6:2 FTS



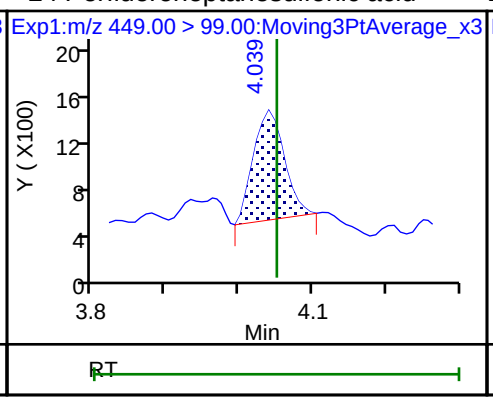
21 1H,1H,2H,2H-perfluorooctanesulfo



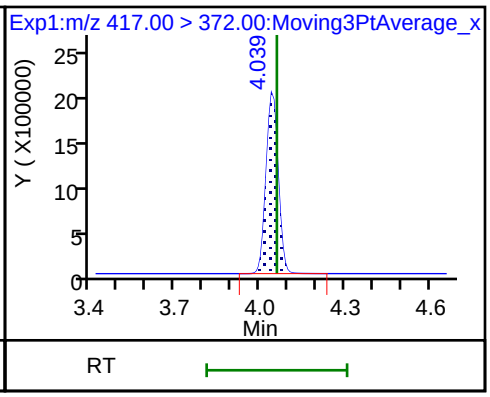
24 Perfluoroheptanesulfonic acid (M)



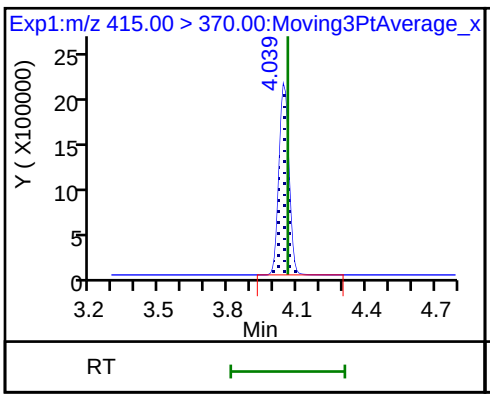
24 Perfluoroheptanesulfonic acid



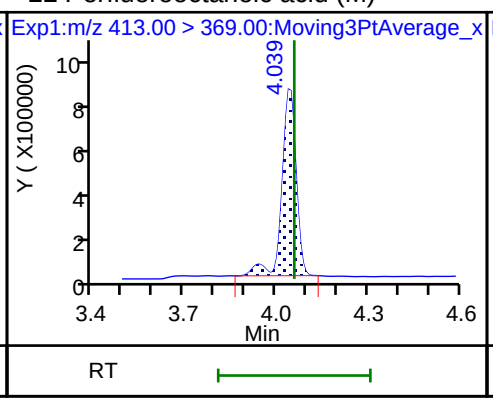
D 25 13C4 PFOA



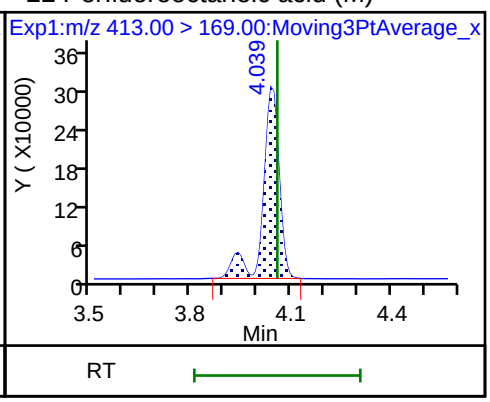
* 23 13C2 PFOA



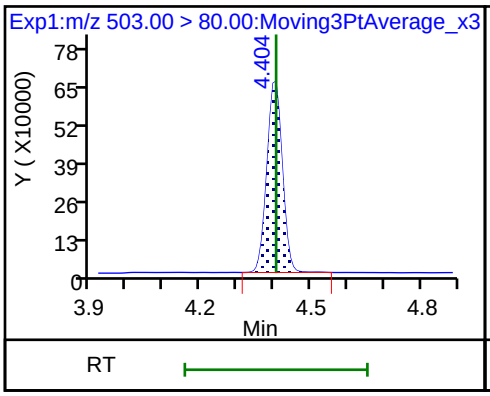
22 Perfluorooctanoic acid (M)



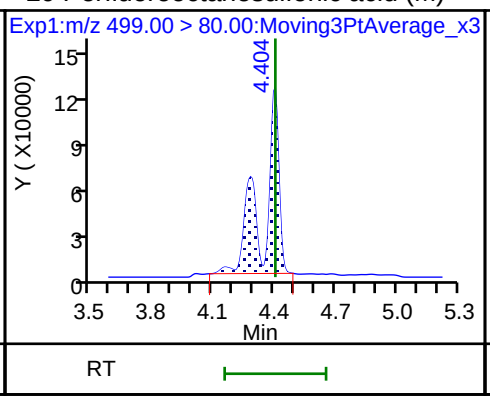
22 Perfluorooctanoic acid (M)



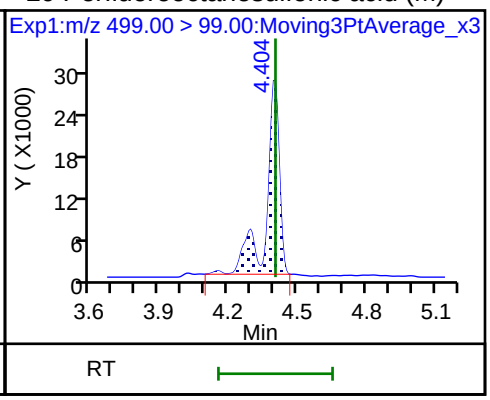
D 27 13C4 PFOS



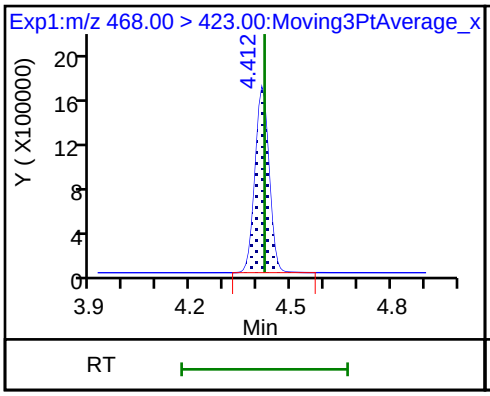
29 Perfluorooctanesulfonic acid (M)



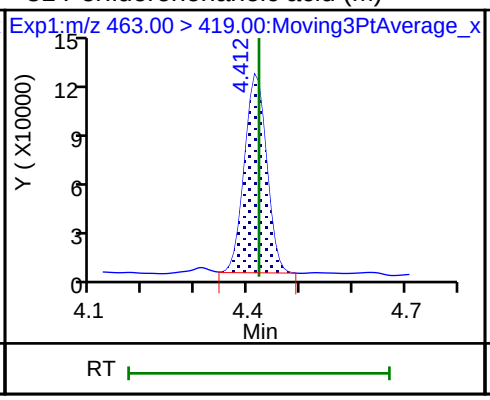
29 Perfluorooctanesulfonic acid (M)



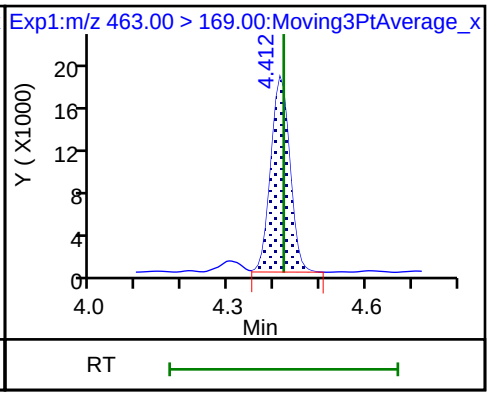
D 30 13C5 PFNA



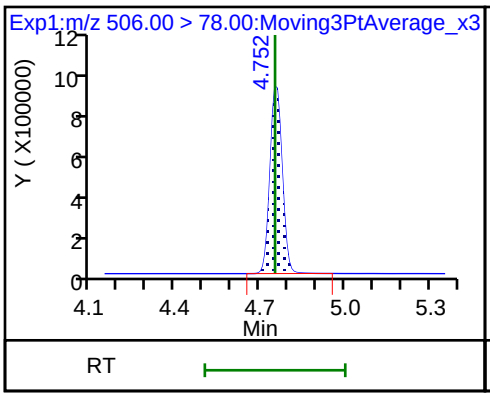
31 Perfluorononanoic acid (M)



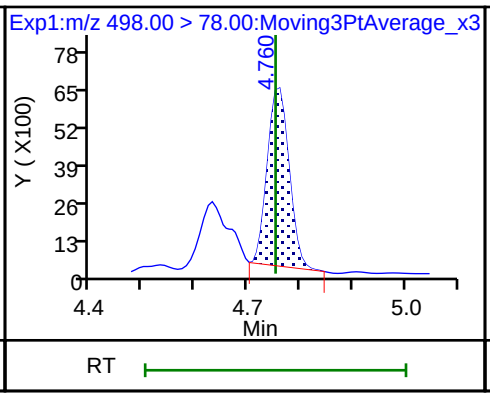
31 Perfluorononanoic acid



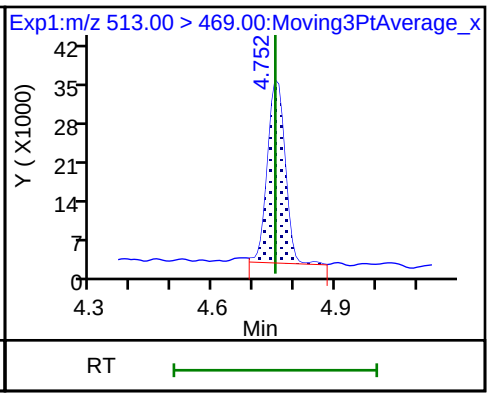
D 33 13C8 FOSA



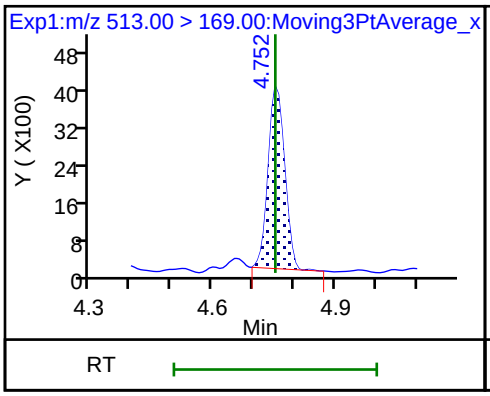
34 Perfluorooctanesulfonamide



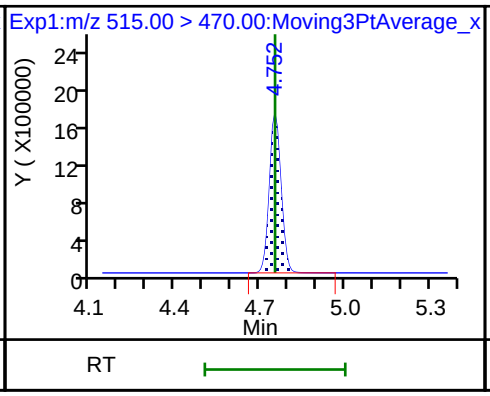
37 Perfluorodecanoic acid



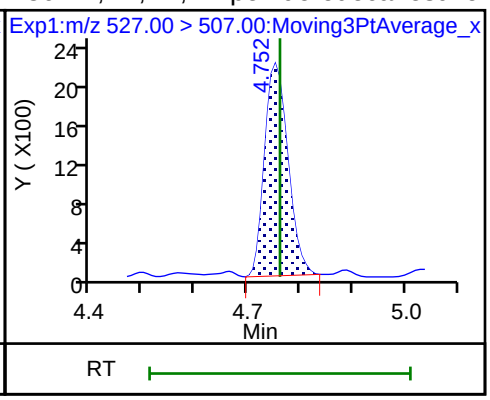
37 Perfluorodecanoic acid



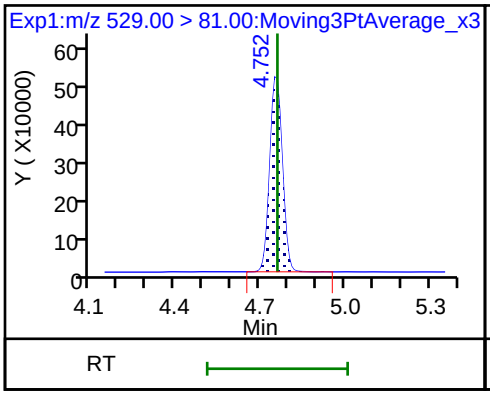
D 39 13C2 PFDA



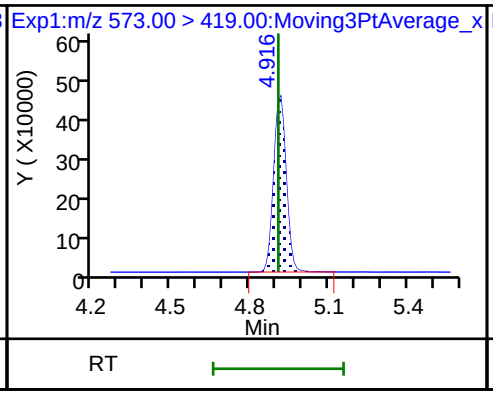
36 1H,1H,2H,2H-perfluorodecanesulfo



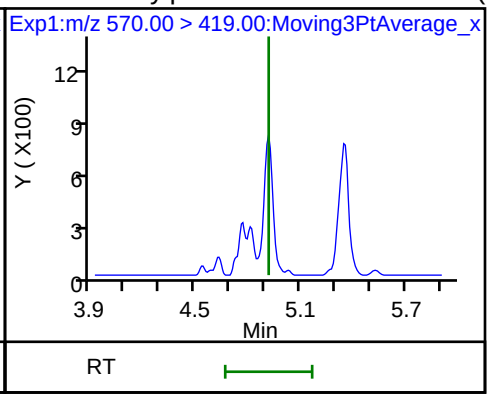
D 38 M2-8:2 FTS



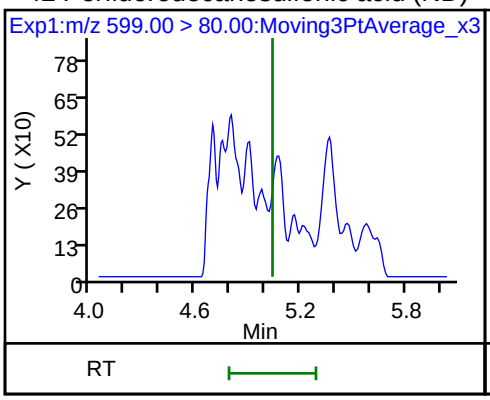
D 40 d3-NMeFOSAA



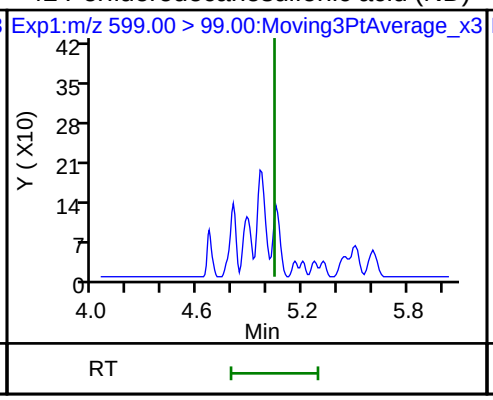
41 N-methylperfluorooctanesulfonami (ND)



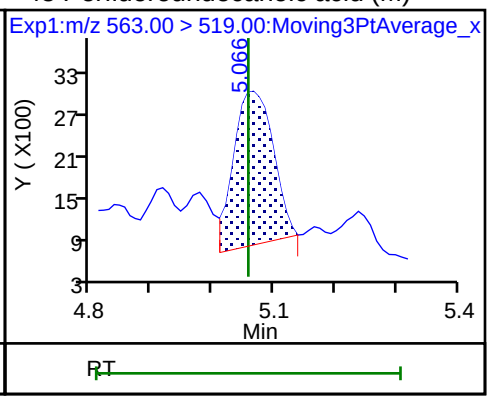
42 Perfluorodecanesulfonic acid (ND)



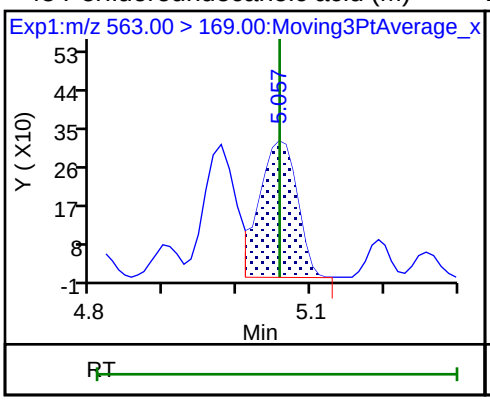
42 Perfluorodecanesulfonic acid (ND)



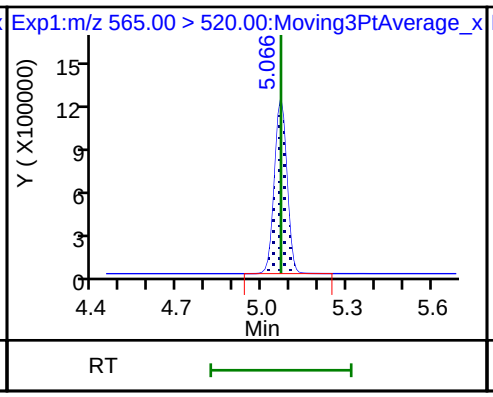
45 Perfluoroundecanoic acid (M)



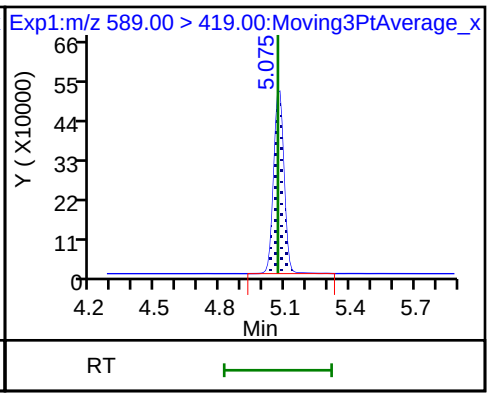
45 Perfluoroundecanoic acid (M)



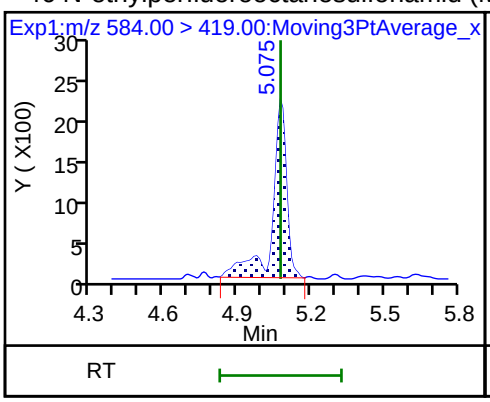
D 43 13C2 PFUnA



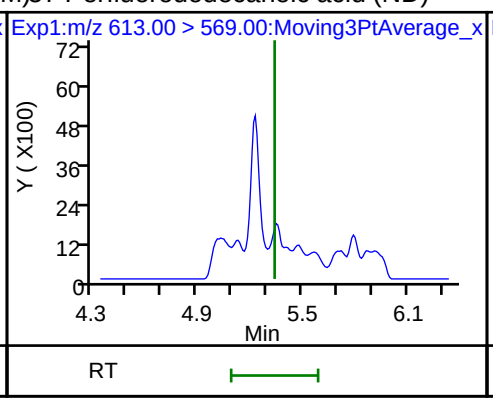
D 44 d5-NEtFOSAA



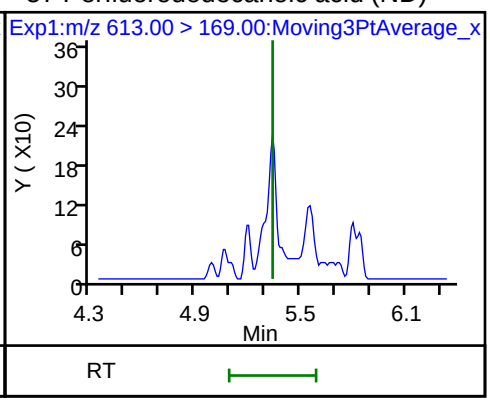
46 N-ethylperfluorooctanesulfonamid (M)



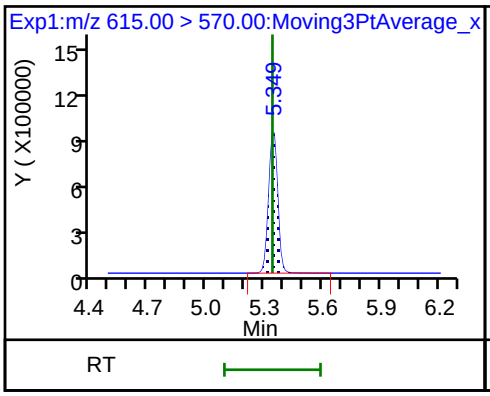
57 Perfluorododecanoic acid (ND)



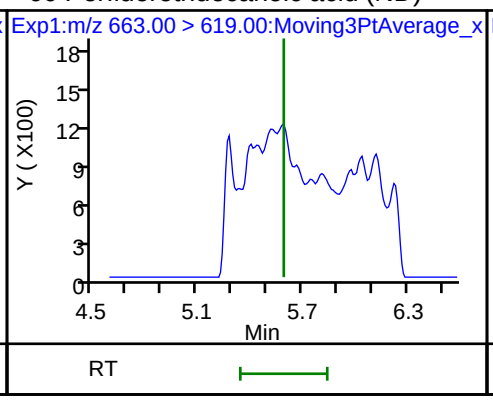
57 Perfluorododecanoic acid (ND)



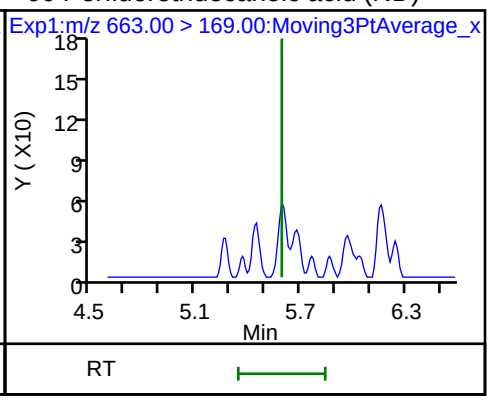
D 56 13C2 PFDoA



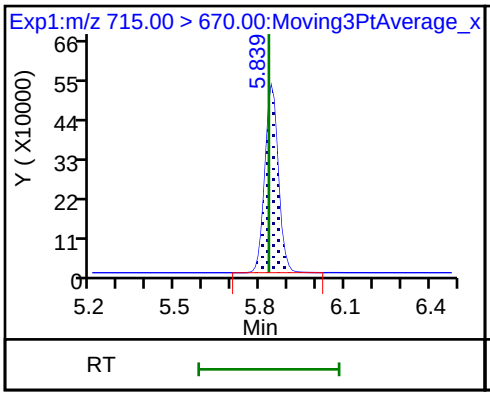
60 Perfluorotridecanoic acid (ND)



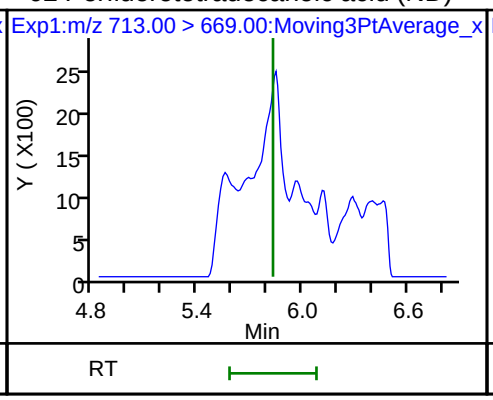
60 Perfluorotridecanoic acid (ND)



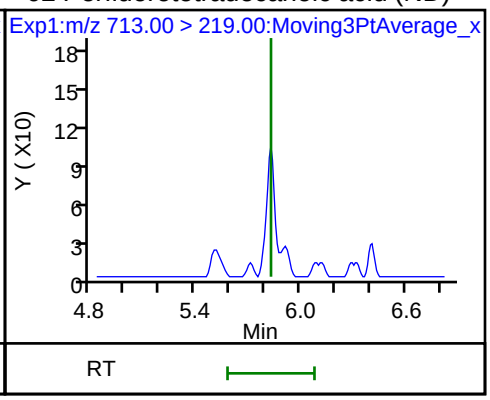
D 61 13C2 PFTeDA



62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



Eurofins TestAmerica, Sacramento

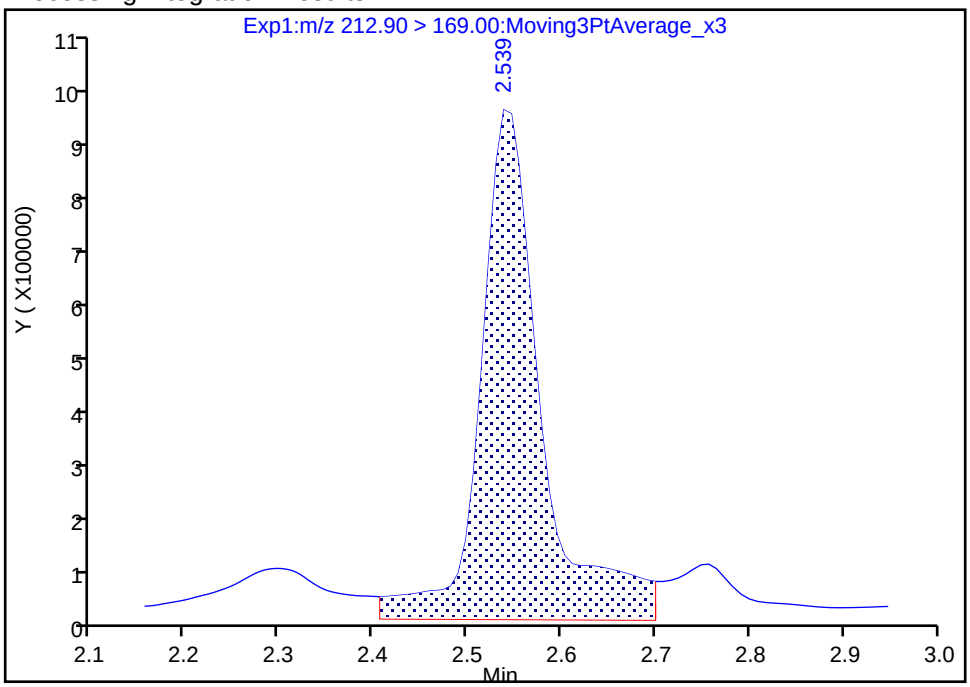
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

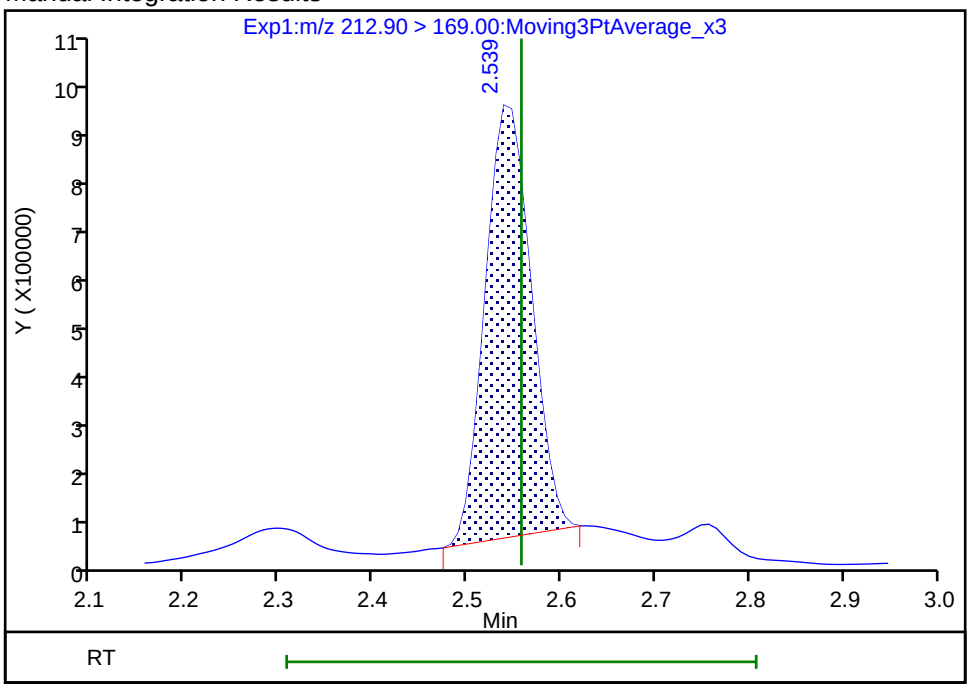
Processing Integration Results

RT: 2.54
Area: 4151645
Amount: 2.587805
Amount Units: ng/ml



Manual Integration Results

RT: 2.54
Area: 2882561
Amount: 1.796759
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:51:11
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

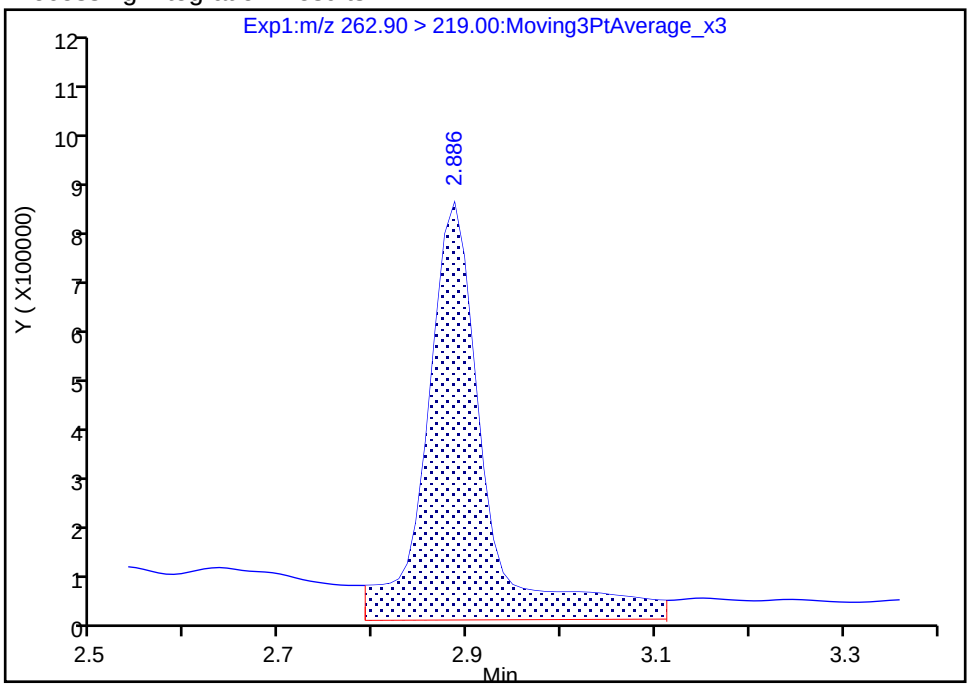
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

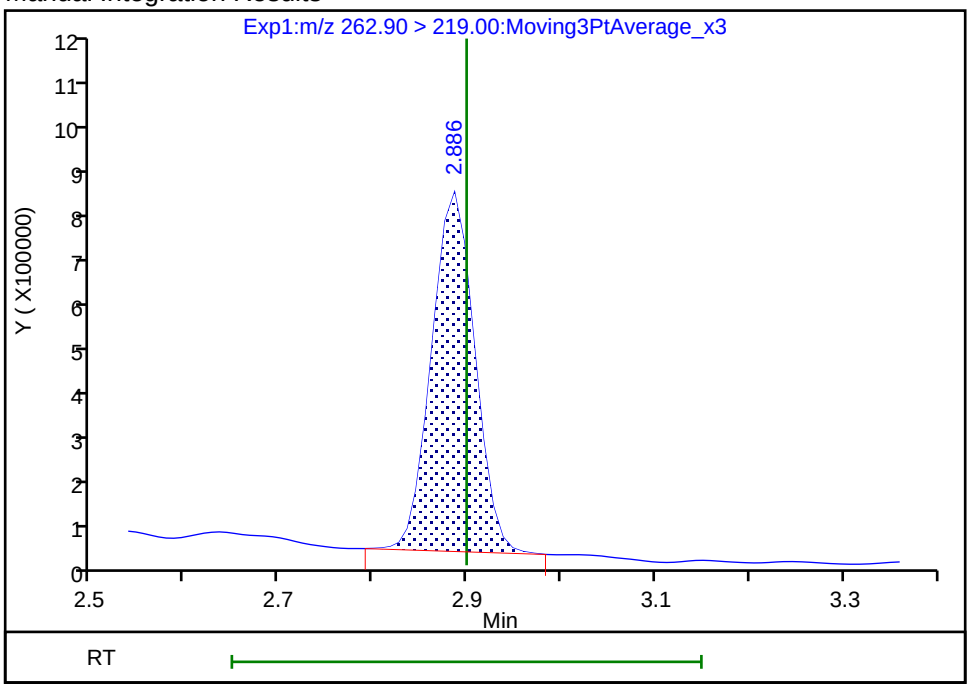
Processing Integration Results

RT: 2.89
Area: 3584844
Amount: 1.536638
Amount Units: ng/ml



Manual Integration Results

RT: 2.89
Area: 2477334
Amount: 1.061906
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:51:17
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

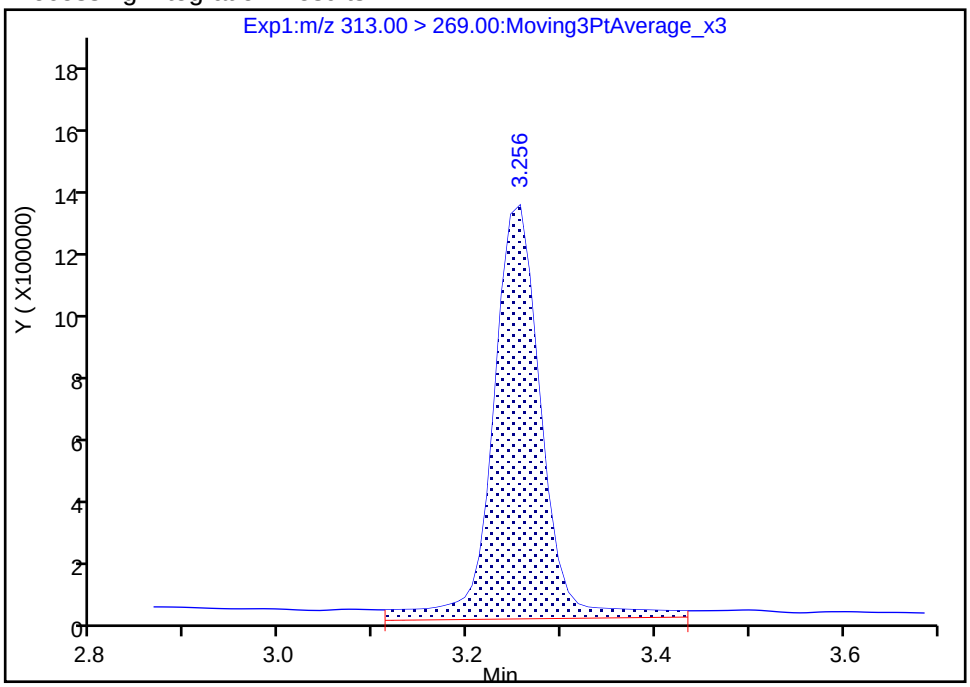
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

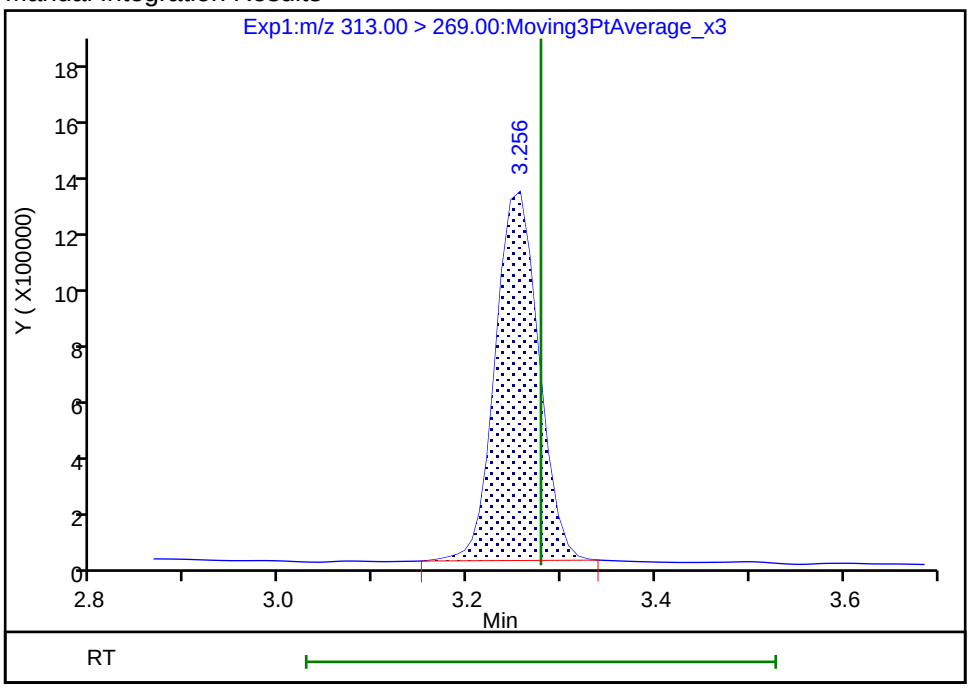
Processing Integration Results

RT: 3.26
Area: 4601158
Amount: 1.696738
Amount Units: ng/ml



Manual Integration Results

RT: 3.26
Area: 4022511
Amount: 1.483354
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:51:30

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

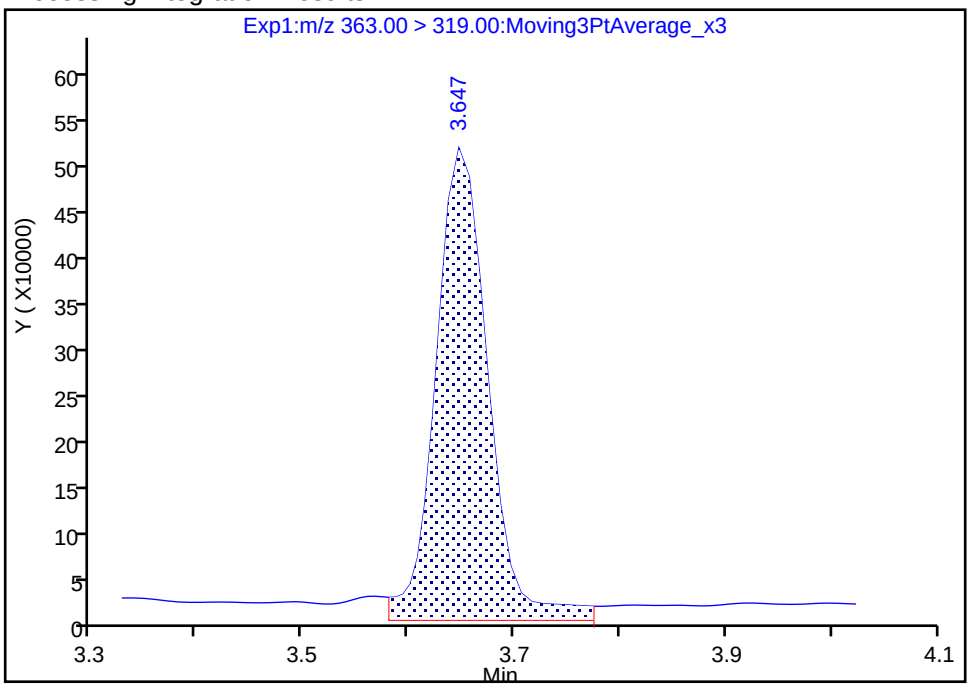
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

16 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

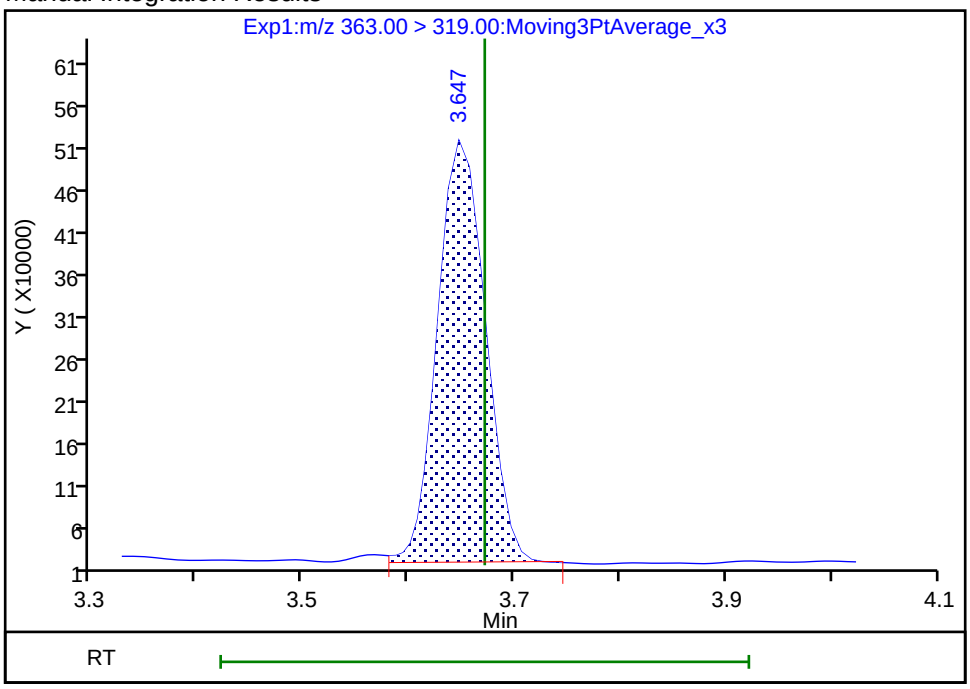
Processing Integration Results

RT: 3.65
Area: 1761023
Amount: 0.691226
Amount Units: ng/ml



Manual Integration Results

RT: 3.65
Area: 1558273
Amount: 0.611644
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:54:02
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

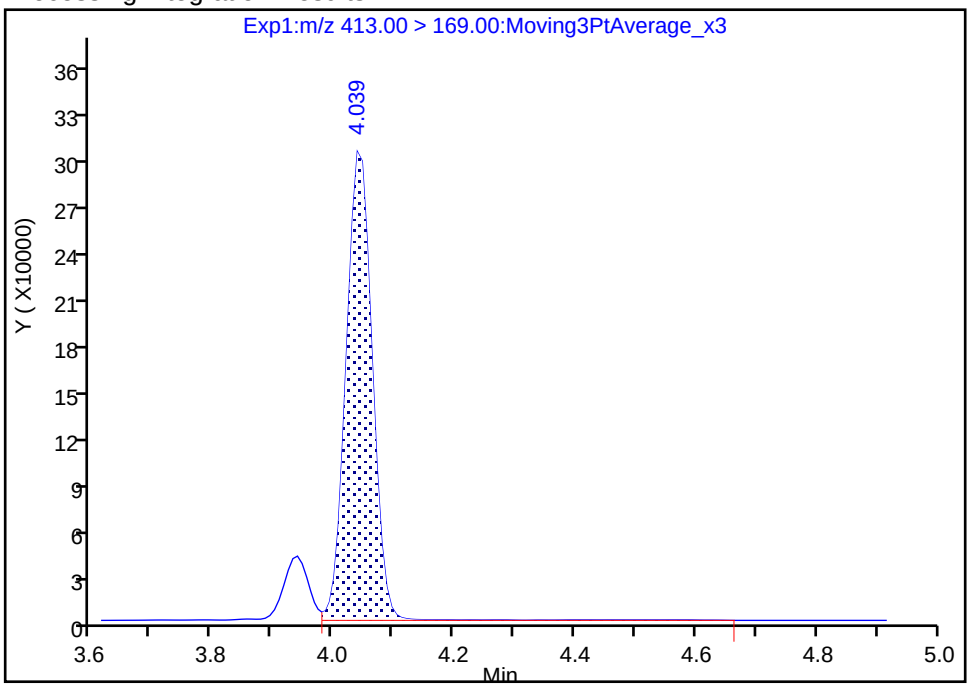
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

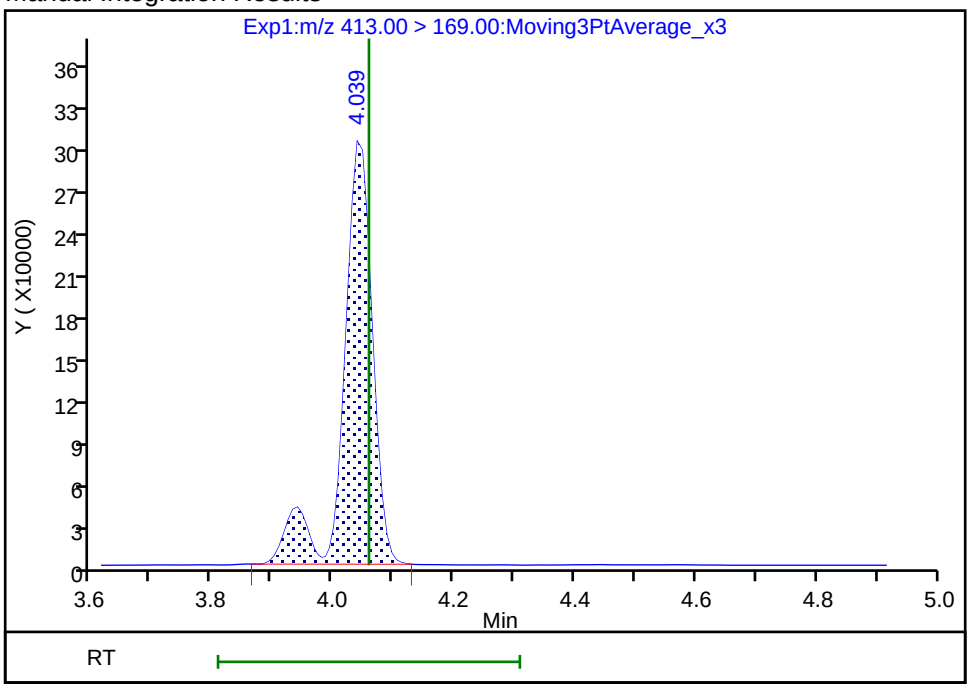
Processing Integration Results

RT: 4.04
Area: 899573
Amount: 1.067284
Amount Units: ng/ml



Manual Integration Results

RT: 4.04
Area: 995723
Amount: 1.081482
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:54:40

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

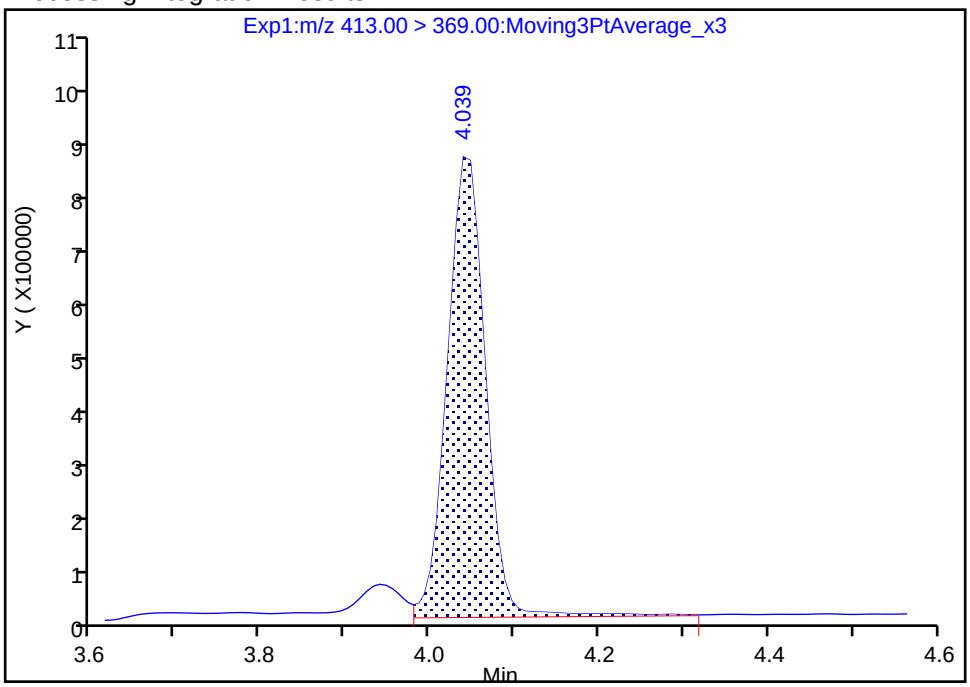
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

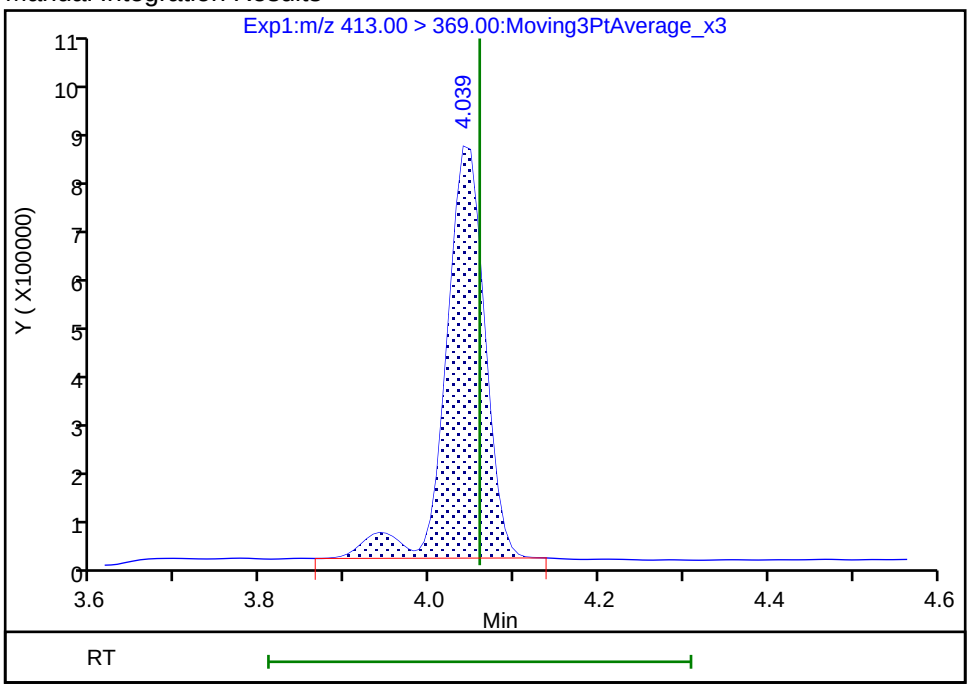
Processing Integration Results

RT: 4.04
Area: 2684731
Amount: 1.067284
Amount Units: ng/ml



Manual Integration Results

RT: 4.04
Area: 2720445
Amount: 1.081482
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:54:44

Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento

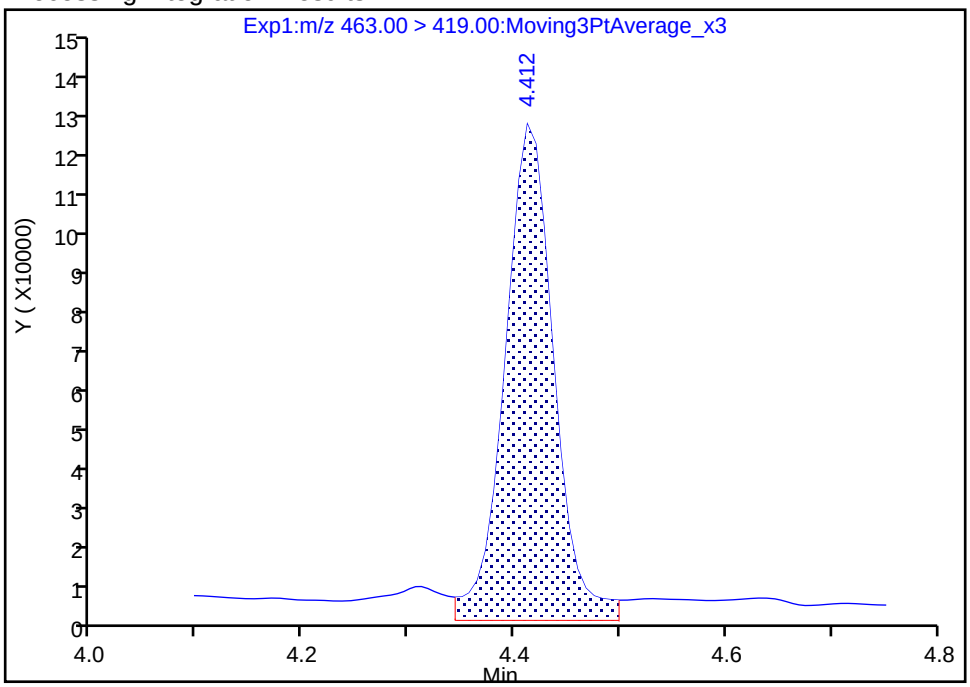
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

31 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

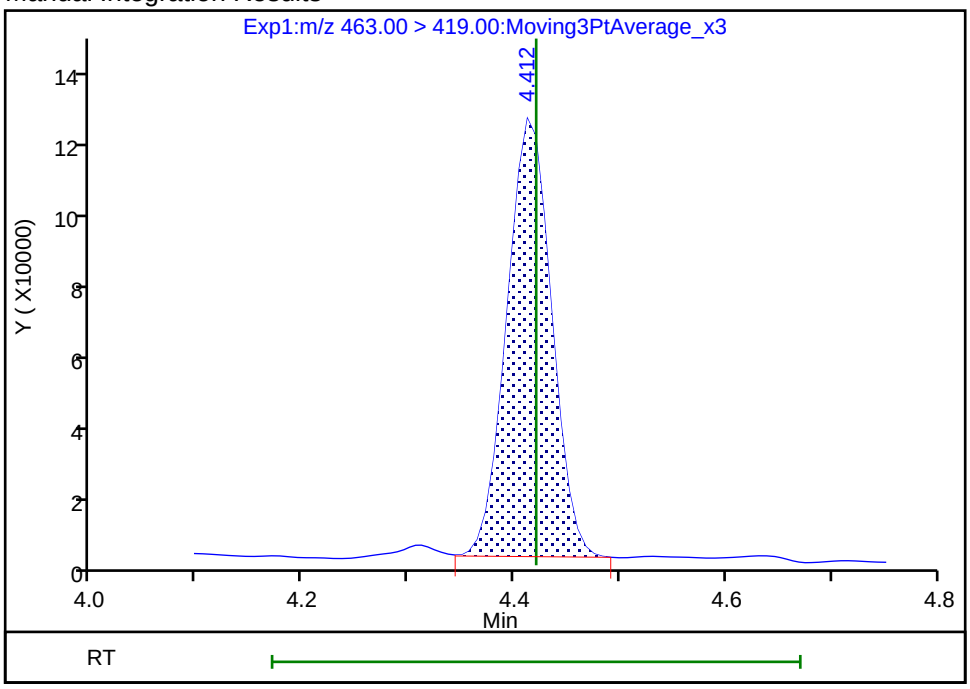
Processing Integration Results

RT: 4.41
Area: 397616
Amount: 0.205249
Amount Units: ng/ml



Manual Integration Results

RT: 4.41
Area: 347908
Amount: 0.179590
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:55:13
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

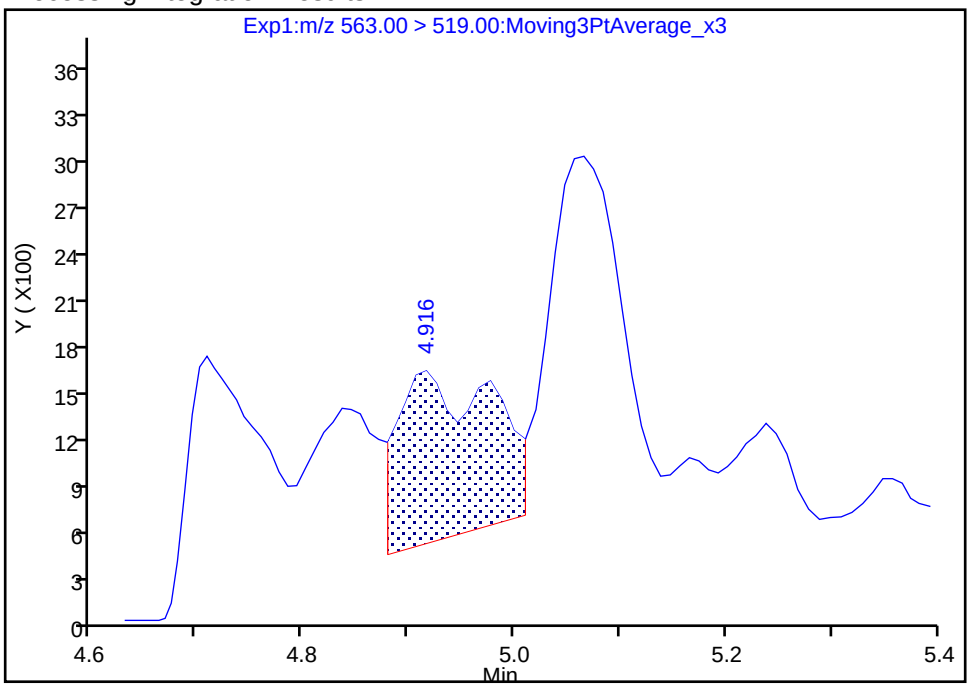
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

45 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

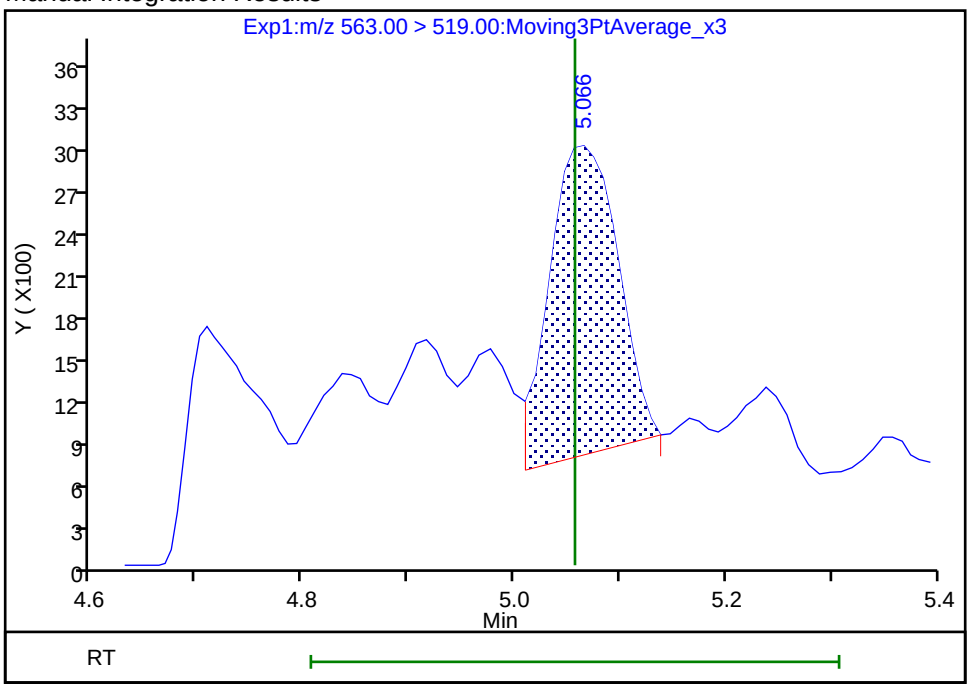
Processing Integration Results

RT: 4.92
Area: 6639
Amount: 0.006355
Amount Units: ng/ml



Manual Integration Results

RT: 5.07
Area: 9876
Amount: 0.009453
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:55:37
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

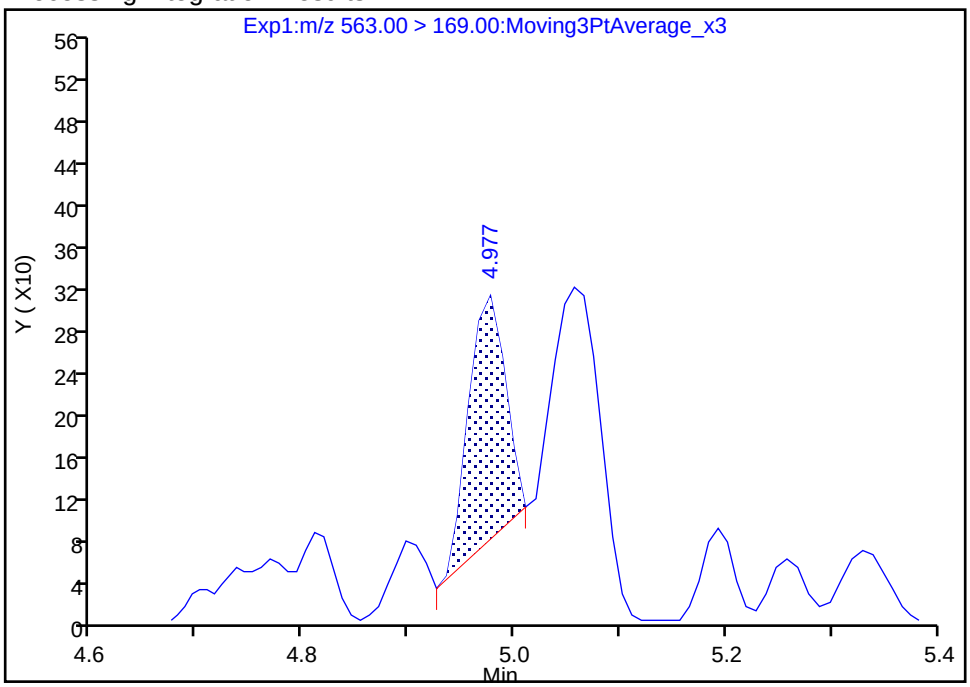
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

45 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

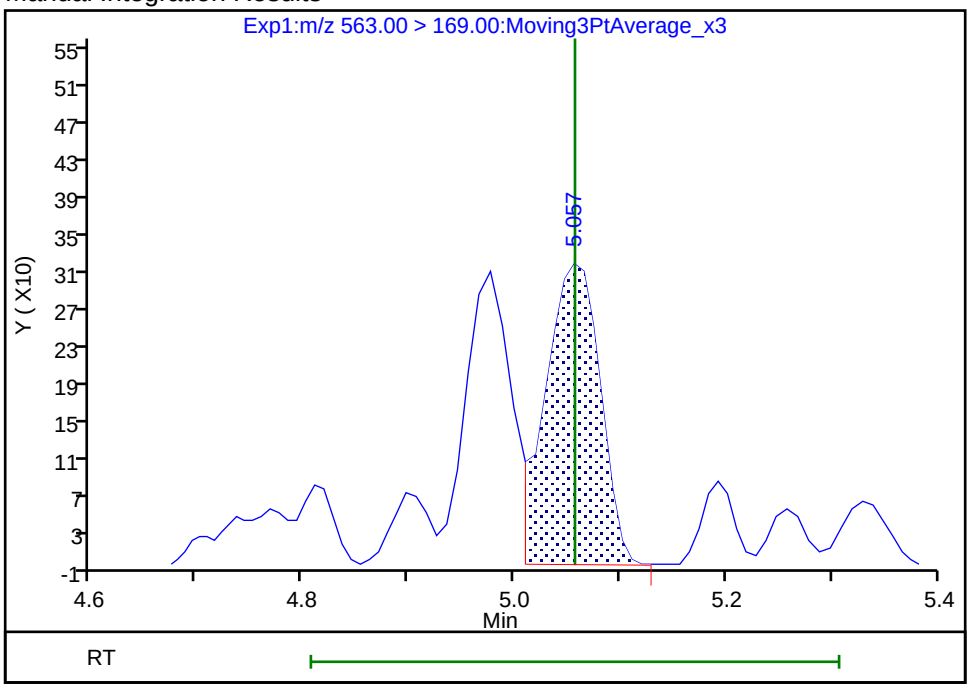
Processing Integration Results

RT: 4.98
Area: 562
Amount: 0.006355
Amount Units: ng/ml



Manual Integration Results

RT: 5.06
Area: 1121
Amount: 0.009453
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:55:37
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

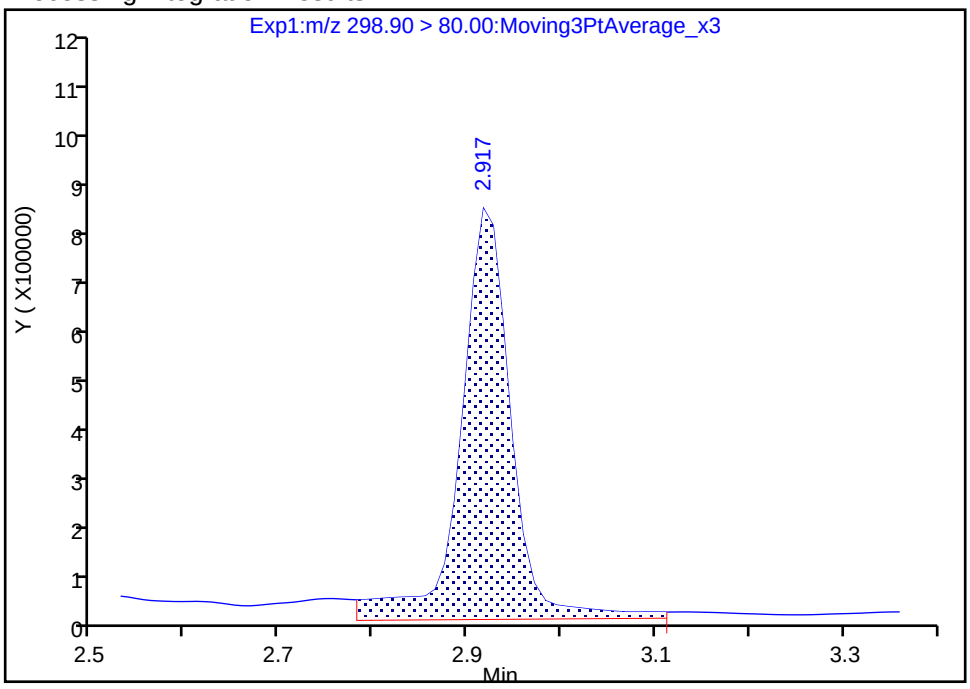
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

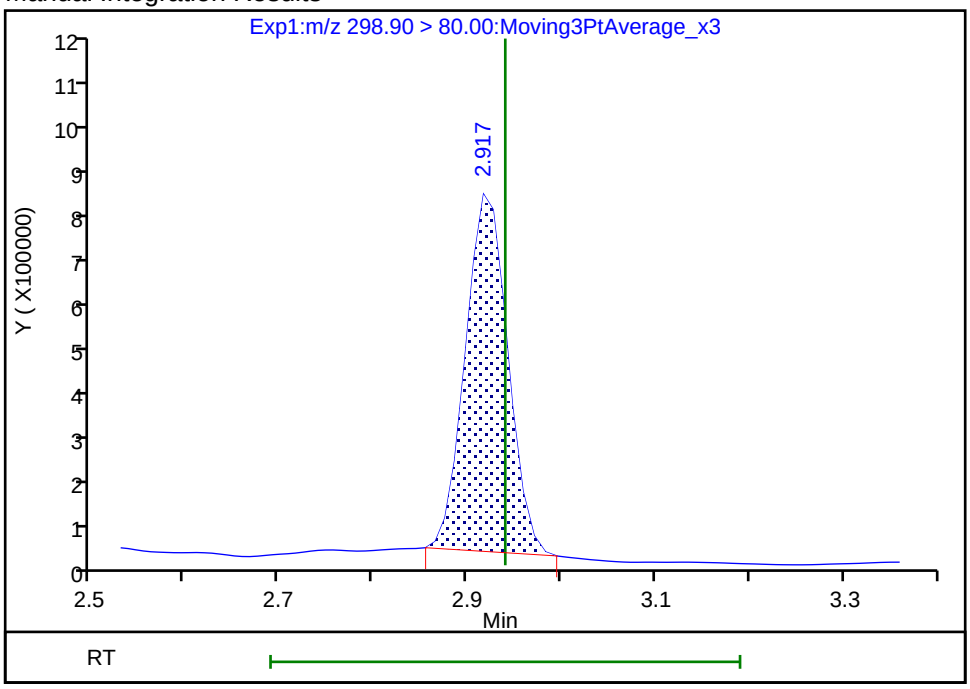
Processing Integration Results

RT: 2.92
Area: 3041173
Amount: 1.589981
Amount Units: ng/ml



Manual Integration Results

RT: 2.92
Area: 2419017
Amount: 1.264707
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:51:24

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

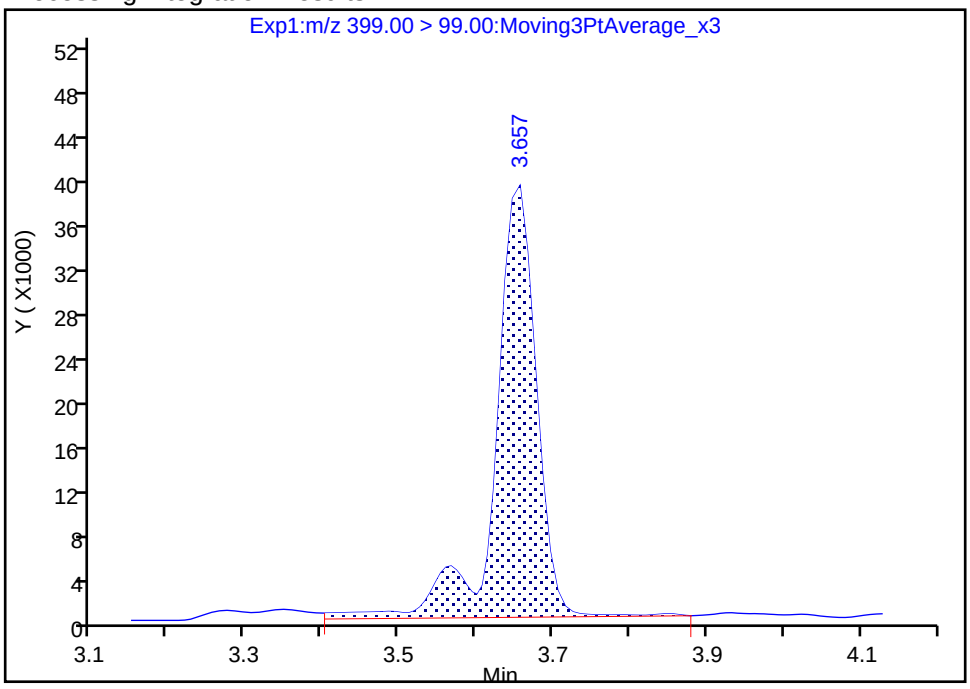
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

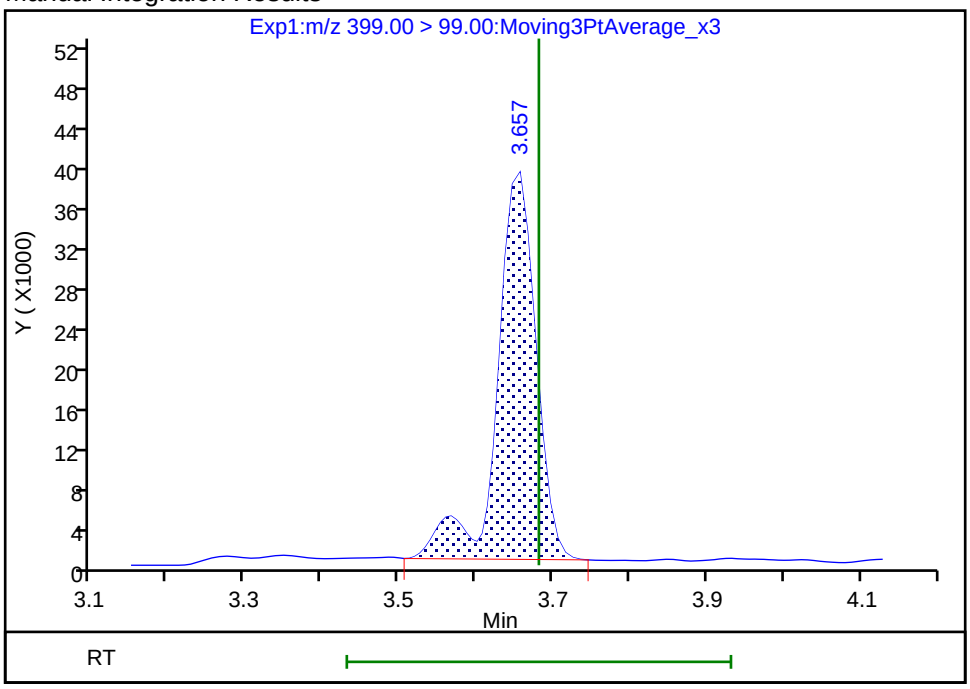
Processing Integration Results

RT: 3.66
Area: 145376
Amount: 0.459129
Amount Units: ng/ml



Manual Integration Results

RT: 3.66
Area: 135879
Amount: 0.332243
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:54:13

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

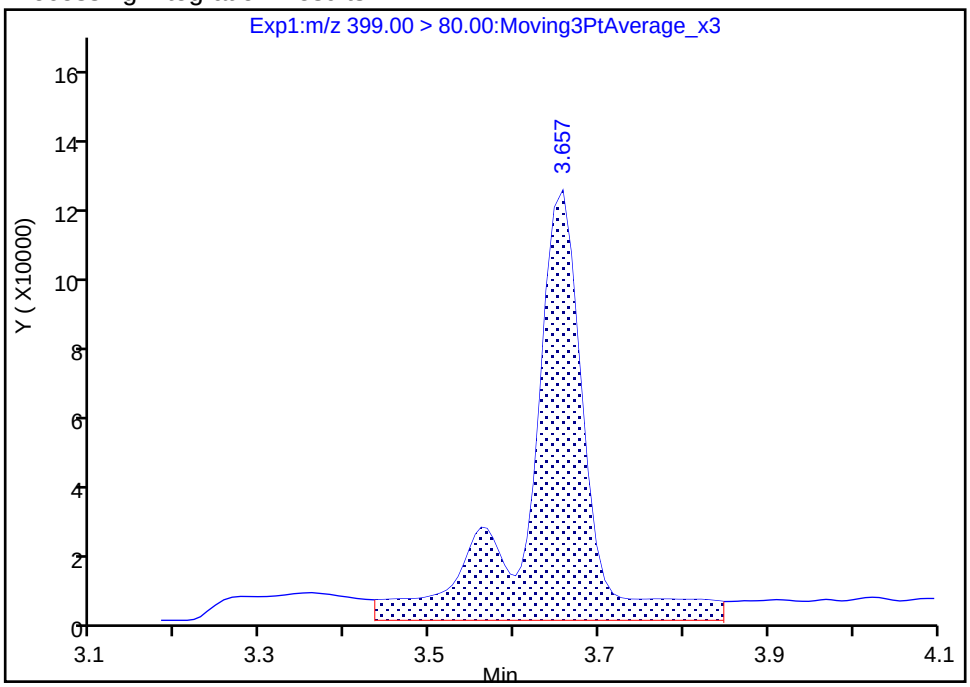
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

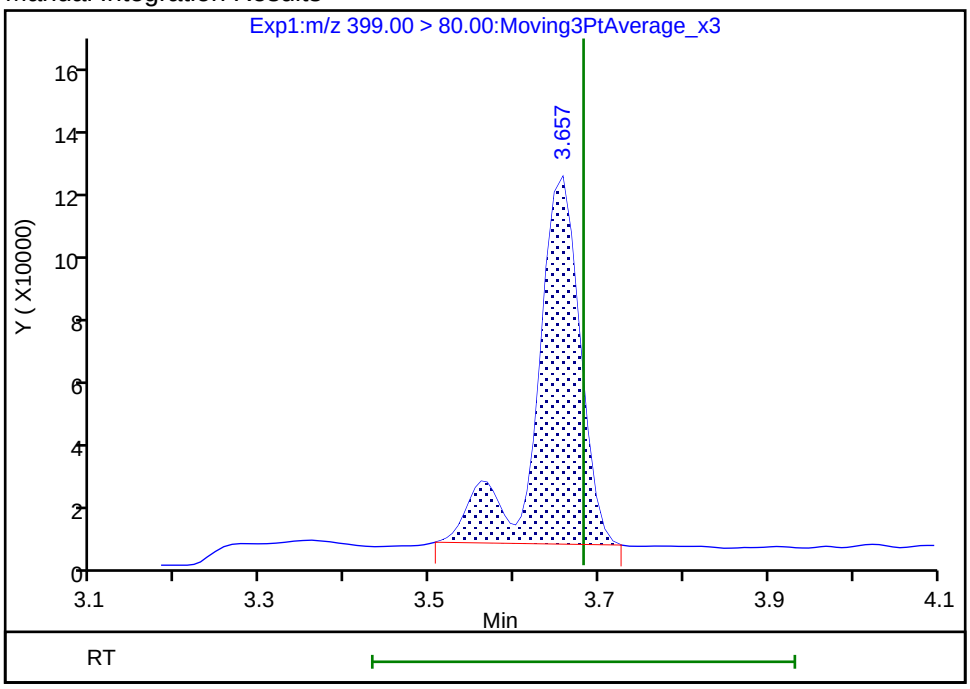
Processing Integration Results

RT: 3.66
Area: 568193
Amount: 0.459129
Amount Units: ng/ml



Manual Integration Results

RT: 3.66
Area: 411166
Amount: 0.332243
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:54:19

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

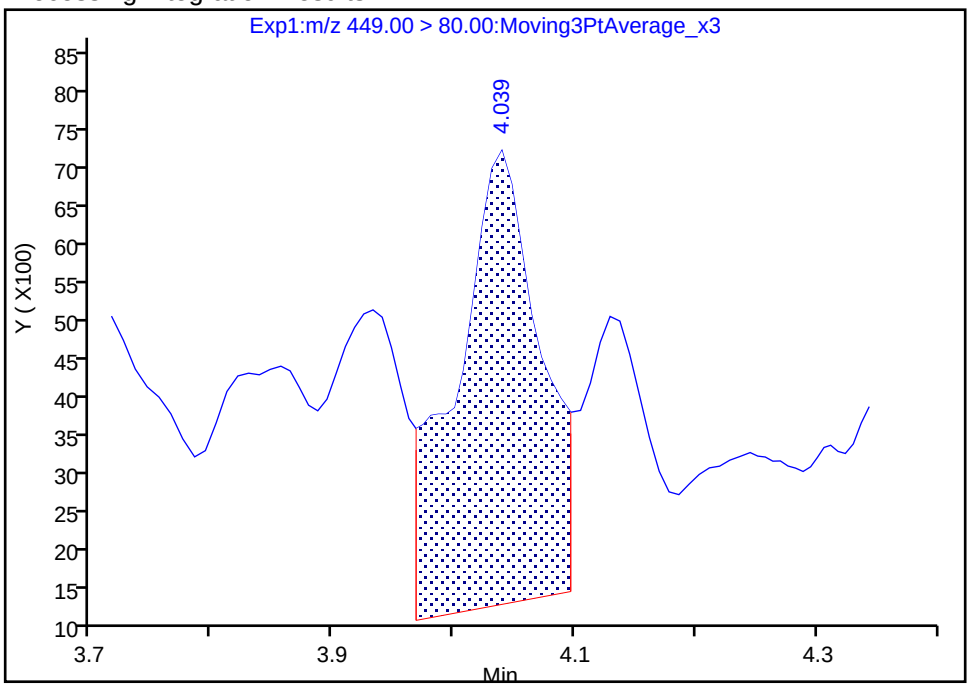
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

24 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

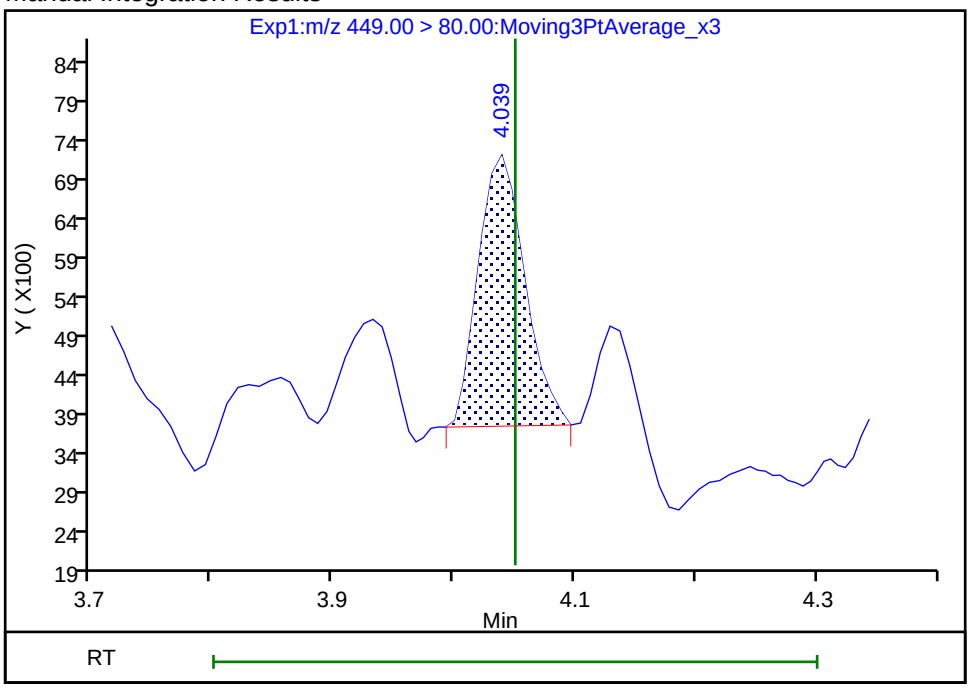
Processing Integration Results

RT: 4.04
Area: 28276
Amount: 0.032419
Amount Units: ng/ml



Manual Integration Results

RT: 4.04
Area: 9132
Amount: 0.010470
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:54:28
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

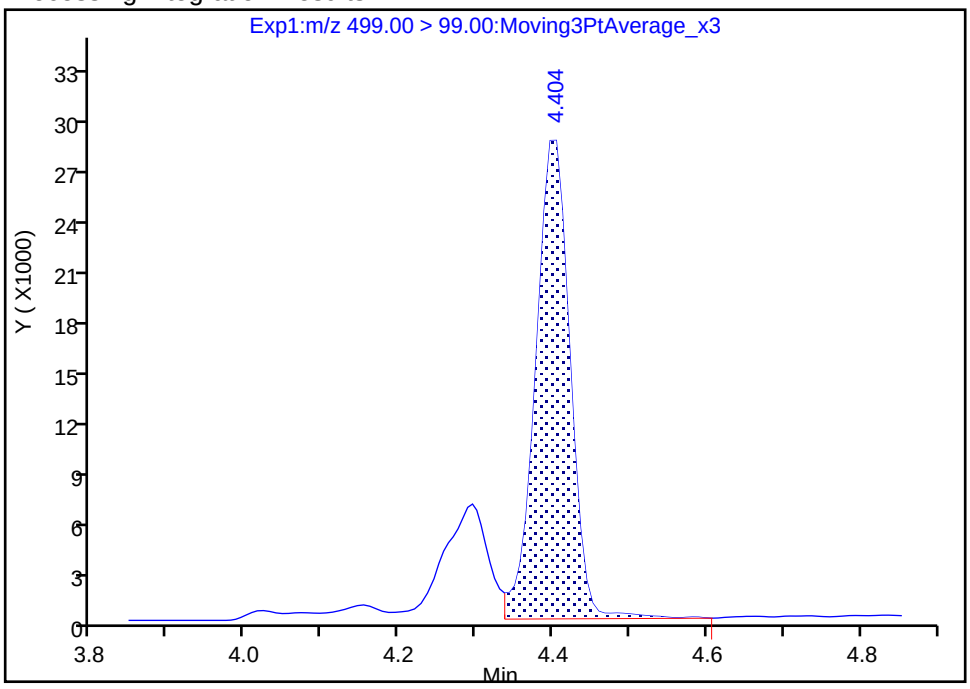
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

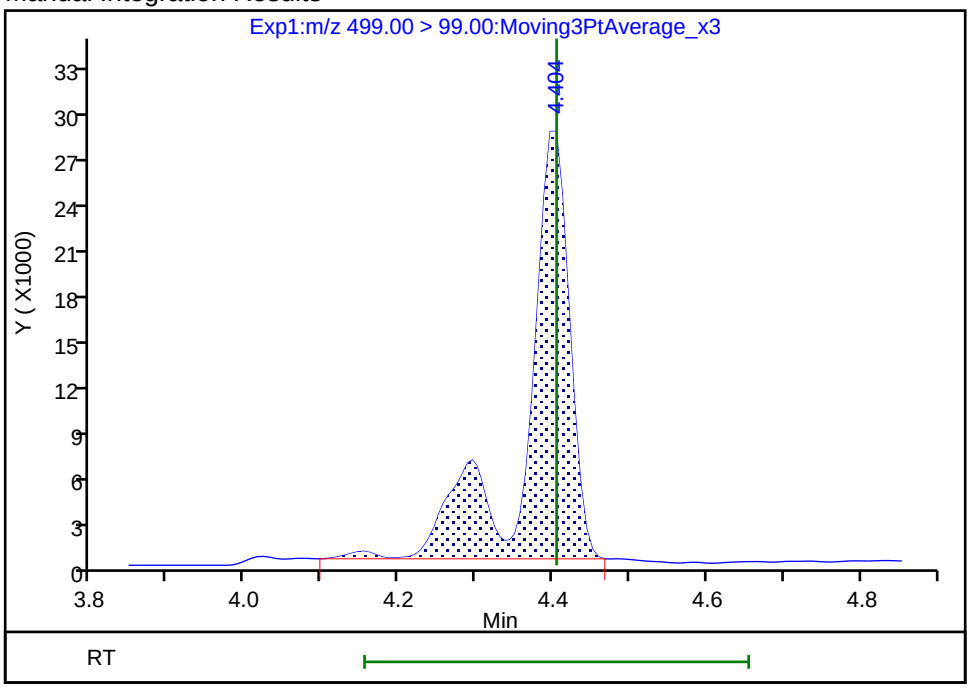
Processing Integration Results

RT: 4.40
Area: 86924
Amount: 0.869902
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 108484
Amount: 0.783090
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:54:52
Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

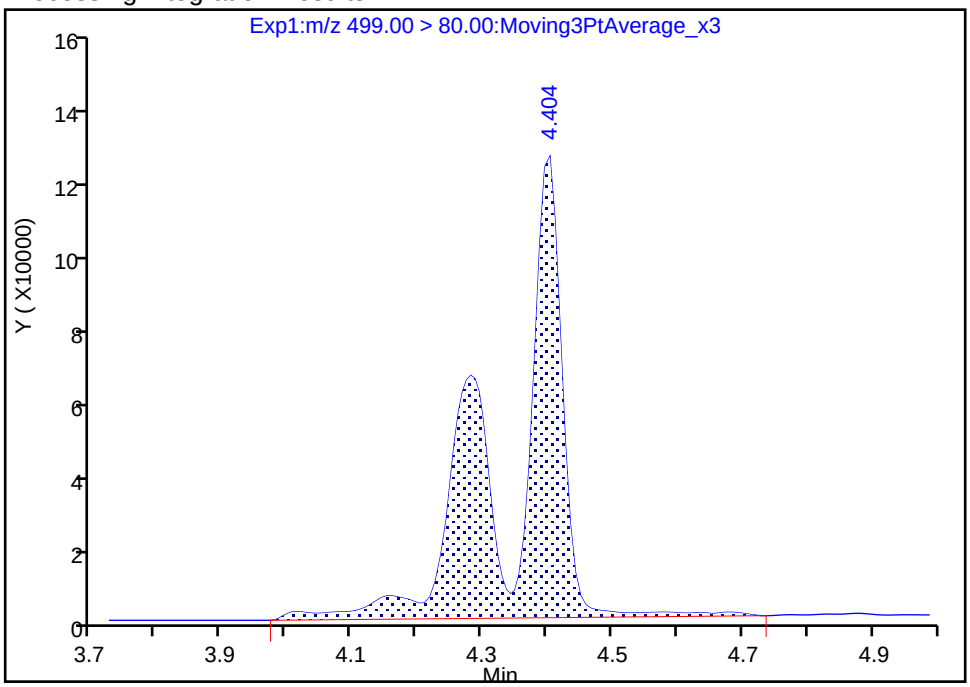
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

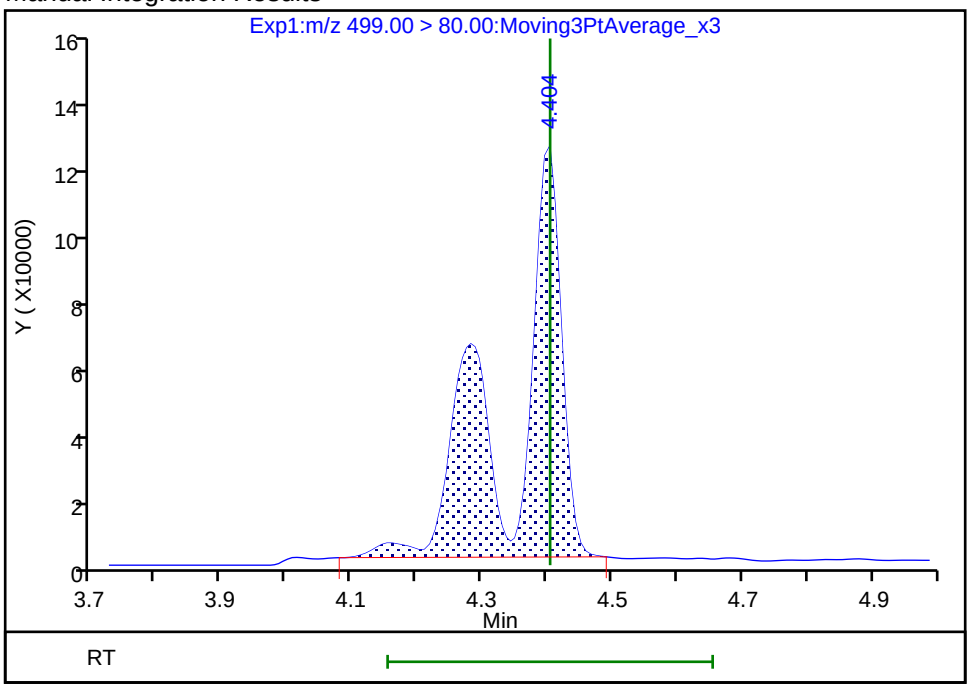
Processing Integration Results

RT: 4.40
Area: 688202
Amount: 0.869902
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 619523
Amount: 0.783090
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:54:57

Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento

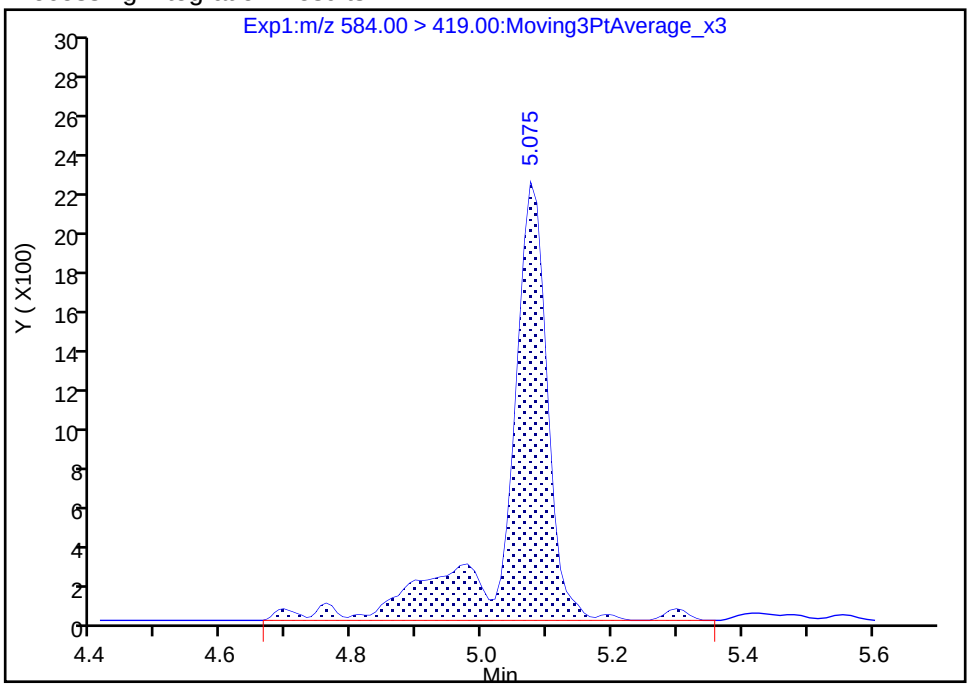
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_045.d				
Injection Date:	05-Jun-2020 06:41:03	Instrument ID:	A15		
Lims ID:	320-61353-A-3-A	Lab Sample ID:	320-61353-3		
Client ID:	ONU SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	32	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

46 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

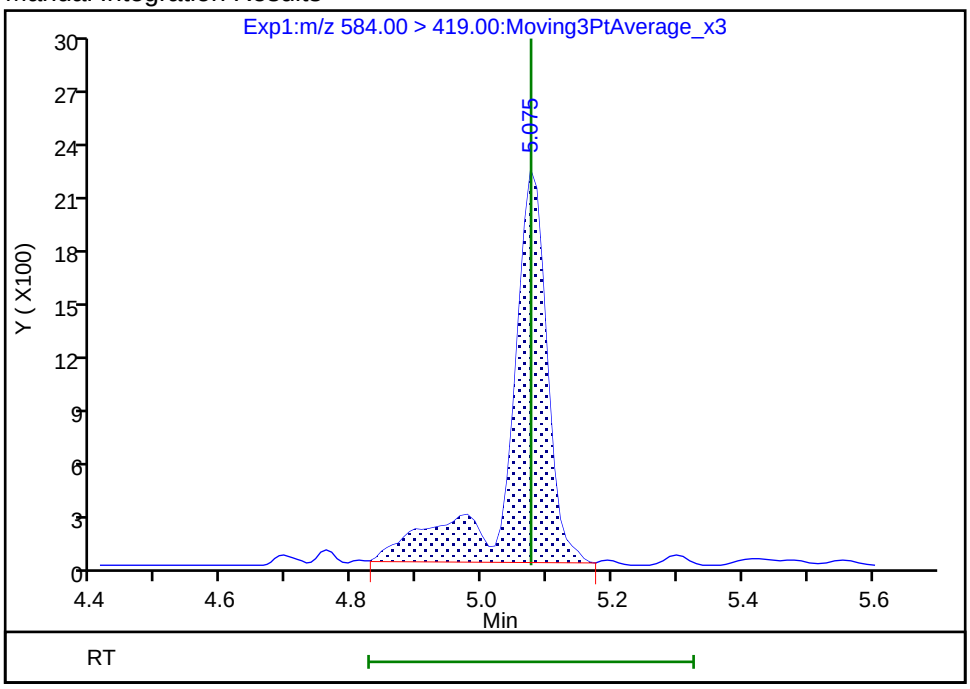
Processing Integration Results

RT: 5.07
Area: 9864
Amount: 0.020690
Amount Units: ng/ml



Manual Integration Results

RT: 5.07
Area: 8957
Amount: 0.018788
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:55:51
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: SA SLCRS Lab Sample ID: 320-61353-4

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_046.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 11:20

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 251.3(mL) Date Analyzed: 06/05/2020 06:50

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	76		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	82		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	130		2.0	0.58
375-85-9	Perfluoroheptanoic acid	44		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	110		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	11		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	19		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	0.95	J	2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	46	B	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	2.8		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	110		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.38	J B	2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9
27619-97-2	6:2 FTS	11	J	20	2.0
39108-34-4	8:2 FTS	ND		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: SA SLCRS Lab Sample ID: 320-61353-4

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_046.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 11:20

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 251.3(mL) Date Analyzed: 06/05/2020 06:50

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	44		25-150
STL01893	13C5 PFPeA	57		25-150
STL00993	13C2 PFHxA	64		25-150
STL01892	13C4 PFHpA	75		25-150
STL00990	13C4 PFOA	78		25-150
STL00995	13C5 PFNA	87		25-150
STL00996	13C2 PFDA	93		25-150
STL00997	13C2 PFUnA	98		25-150
STL00998	13C2 PFDoA	95		25-150
STL02116	13C2 PFTeDA	81		25-150
STL02337	13C3 PFBS	62		25-150
STL00994	18O2 PFHxS	75		25-150
STL00991	13C4 PFOS	68		25-150
STL01056	13C8 FOSA	61		25-150
STL02118	d3-NMeFOSAA	139		25-150
STL02117	d5-NEtFOSAA	149		25-150
STL02279	M2-6:2 FTS	132		25-150
STL02280	M2-8:2 FTS	280	*5	25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_046.d
Lims ID: 320-61353-A-4-A
Client ID: SA SLCRS
Sample Type: Client
Inject. Date: 05-Jun-2020 06:50:09 ALS Bottle#: 33 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 320-61353-a-4-a
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 09:57:25 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: ruangyotsakuld Date: 08-Jun-2020 09:57:25
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

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	2.531	2.549	-0.018	0.629	4665675	1.10		43.9	5660	
2 Perfluorobutanoic acid										M
212.90 > 169.00	2.539	2.557	-0.018	1.003	3315622	1.92			54.7	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.876	2.899	-0.023	0.715	5417549	1.43		57.1	1483	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.876	2.899	-0.023	1.000	4523010	2.07			38.7	M
D 9 13C3 PFBS										
301.90 > 80.00	2.907	2.940	-0.033	0.723	3800581	1.44		62.1	136	
6 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.907	2.940	-0.033	1.000	1458627	0.9153	Target=2.12		26.0	M
298.90 > 99.00	2.907	2.940	-0.033	1.000	704513		2.07(1.06-3.19)		51.5	
D 11 13C2 PFHxA										
315.00 > 270.00	3.236	3.278	-0.042	0.804	5902021	1.60		64.0	10378	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.236	3.278	-0.042	1.000	7464729	3.37	Target=15.31		143	
313.00 > 119.00	3.236	3.278	-0.042	1.000	448076		16.66(7.66-22.97)		390	
D 18 13C4 PFHpA										
367.00 > 322.00	3.630	3.672	-0.042	0.902	5510631	1.88		75.3	11059	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.630	3.672	-0.042	1.000	2456938	1.10	Target=3.85		82.2	
363.00 > 169.00	3.630	3.672	-0.042	1.000	637790		3.85(1.93-5.78)		358	
D 17 18O2 PFHxS										
403.00 > 84.00	3.638	3.682	-0.044	0.904	2248047	1.78		75.1	9216	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.638	3.682	-0.044	1.000	1227646	1.15	Target=2.99		150	
399.00 > 99.00	3.638	3.682	-0.044	1.000	391410		3.14(1.49-4.48)		249	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 20 M2-6:2 FTS										
429.00 > 81.00	4.008	4.042	-0.034	0.996	1212901	3.14		132	417	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.008	4.042	-0.034	1.000	269989	0.2690			1405	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.023	4.051	-0.028	0.918	51031	0.0700	Target=3.81		8.6	
449.00 > 99.00	4.023	4.051	-0.028	0.918	11766		4.34(1.91-5.72)		8.6	
D 25 13C4 PFOA										
417.00 > 372.00	4.023	4.059	-0.036	1.000	5187364	1.96		78.4	10534	
* 23 13C2 PFOA										
415.00 > 370.00	4.023	4.059	-0.036		6709788	2.50			10627	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.023	4.059	-0.036	1.000	6065285	2.77	Target=2.79		292	
413.00 > 169.00	4.023	4.059	-0.036	1.000	2096274		2.89(1.39-4.18)		2612	
D 27 13C4 PFOS										
503.00 > 80.00	4.381	4.405	-0.024	1.089	1596267	1.63		68.0	656	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.381	4.405	-0.024	1.000	1884694	2.85	Target=5.06		470	
499.00 > 99.00	4.381	4.405	-0.024	1.000	375879		5.01(2.53-7.59)		380	
D 30 13C5 PFNA										
468.00 > 423.00	4.397	4.420	-0.023	1.093	4411197	2.18		87.1	7301	
31 Perfluorononanoic acid										
463.00 > 419.00	4.397	4.420	-0.023	1.000	510546	0.2853	Target=7.17		56.0	
463.00 > 169.00	4.397	4.420	-0.023	1.000	72594		7.03(3.58-10.75)		99.5	
D 33 13C8 FOSA										
506.00 > 78.00	4.737	4.752	-0.015	1.177	2962048	1.52		60.7	4552	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.737	4.752	-0.015	1.000	9976	0.009586			29.3	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.730	4.752	-0.022	1.000	821341	0.4750	Target=10.38		104	
513.00 > 169.00	4.730	4.752	-0.022	1.000	89310		9.20(5.19-15.57)		403	
D 39 13C2 PFDA										
515.00 > 470.00	4.730	4.752	-0.022	1.176	4476194	2.32		92.8	12765	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.737	4.761	-0.024	1.000	80048	0.0380			1121	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.737	4.761	-0.024	1.177	3090243	6.71		280	2511	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.889	4.907	-0.018	1.215	2504904	3.48		139	3321	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.898	4.917	-0.019	1.002	8923	0.0122			13.7	
45 Perfluoroundecanoic acid										M
563.00 > 519.00	5.048	5.057	-0.009	1.002	21998	0.0188	Target=7.52		9.3	M
563.00 > 169.00	5.039	5.057	-0.018	1.000	3149		6.99(3.76-11.28)		17.4	M
D 43 13C2 PFUnA										
565.00 > 520.00	5.039	5.066	-0.027	1.252	4051470	2.46		98.5	11729	

Report Date: 08-Jun-2020 09:57:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_046.d
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.048	5.066	-0.018	1.255	2725960	3.72		149	1712	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.057	5.075	-0.018	1.002	21702	0.0282			134	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.320	5.340	-0.020	1.000	32435	0.0239	Target=6.84		9.5	
613.00 > 169.00	5.320	5.340	-0.020	1.000	4745		6.84(3.42-10.26)		56.1	
D 56 13C2 PFDoA										
615.00 > 570.00	5.320	5.340	-0.020	1.322	3449868	2.37		94.6	16347	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.811	5.830	-0.019	1.444	1932538	2.03		81.1	6412	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 08-Jun-2020 09:57:25 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_046.d

Injection Date: 05-Jun-2020 06:50:09 Instrument ID: A15

Lims ID: 320-61353-A-4-A Lab Sample ID: 320-61353-4

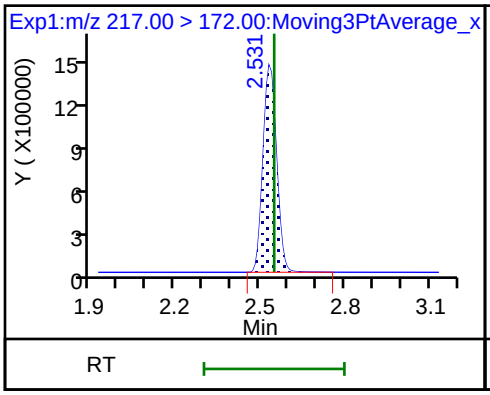
Client ID: SA SLCRS

Operator ID: SACINSTA15 ALS Bottle#: 33 Worklist Smp#: 8

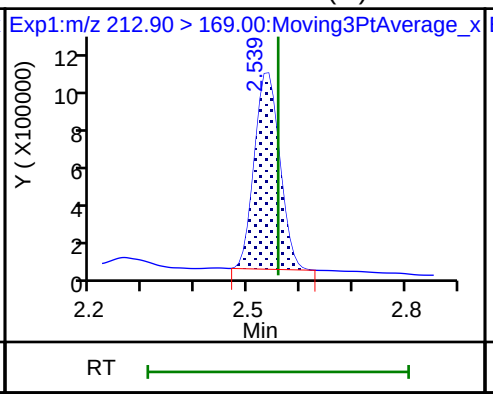
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

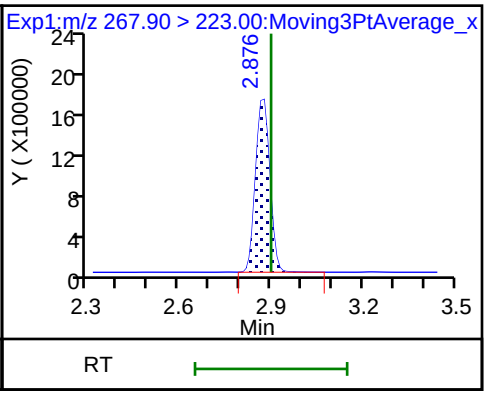
D 1 13C4 PFBA



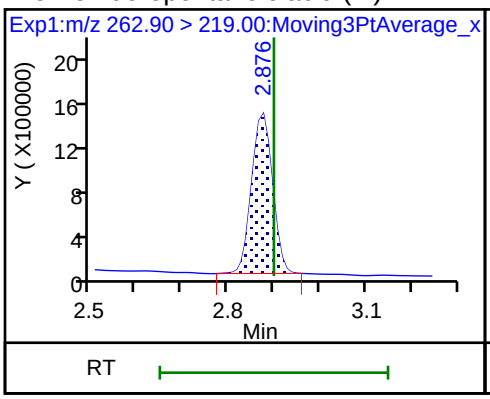
2 Perfluorobutanoic acid (M)



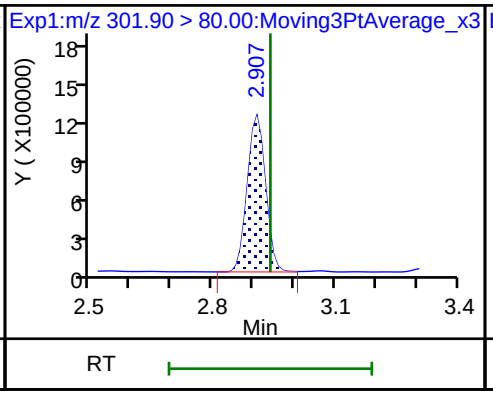
D 4 13C5 PFPeA



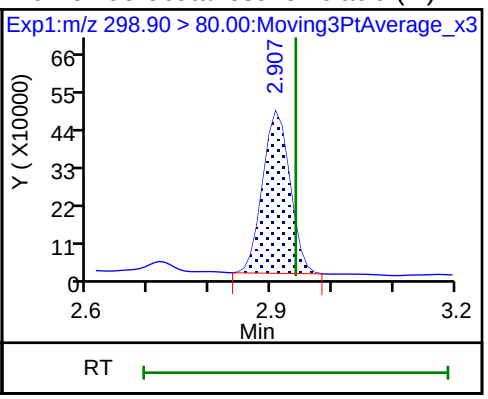
5 Perfluoropentanoic acid (M)



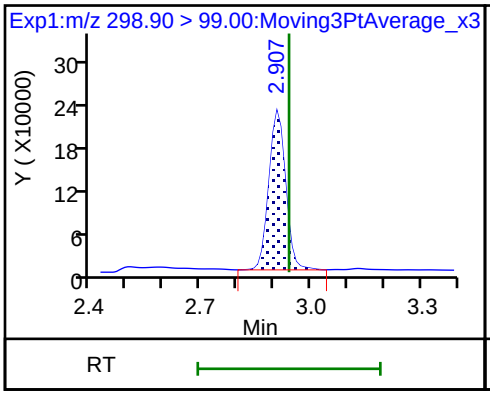
D 9 13C3 PFBS



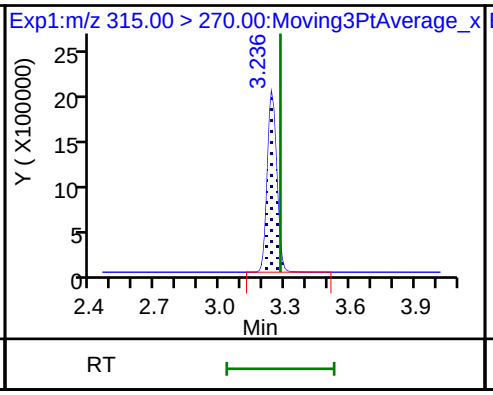
6 Perfluorobutanesulfonic acid (M)



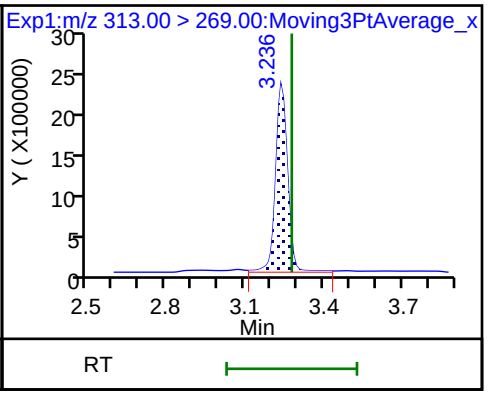
6 Perfluorobutanesulfonic acid



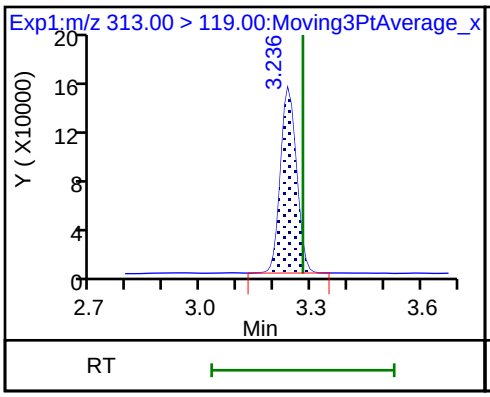
D 11 13C2 PFHxA



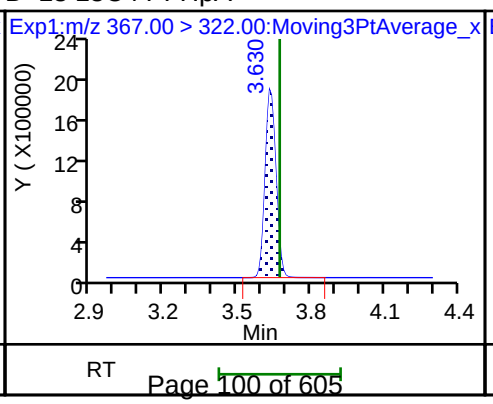
10 Perfluorohexanoic acid



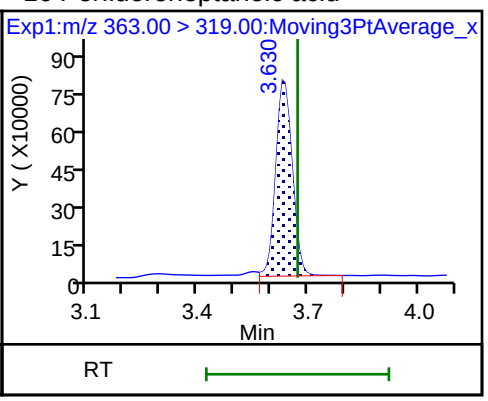
10 Perfluorohexanoic acid



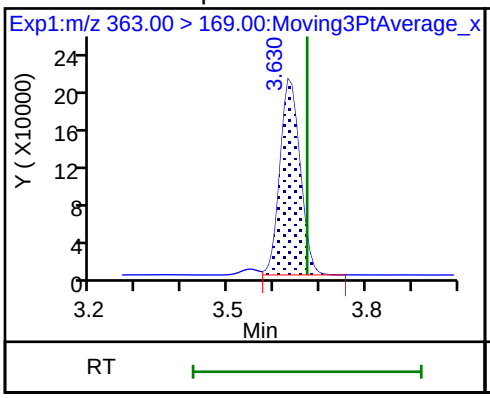
D 18 13C4 PFHpA



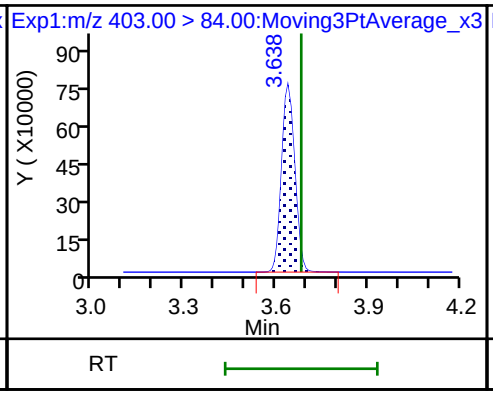
16 Perfluoroheptanoic acid



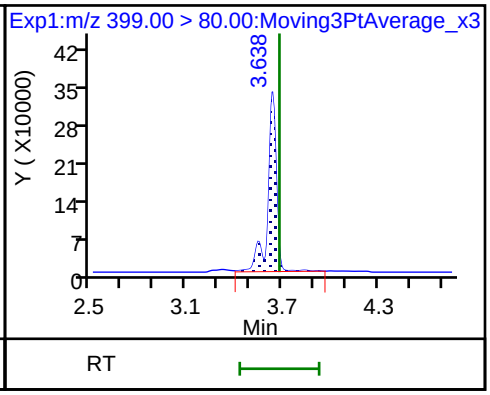
16 Perfluoroheptanoic acid



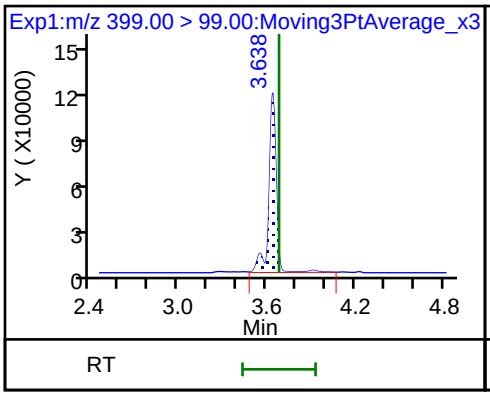
D 17 18O2 PFHxS



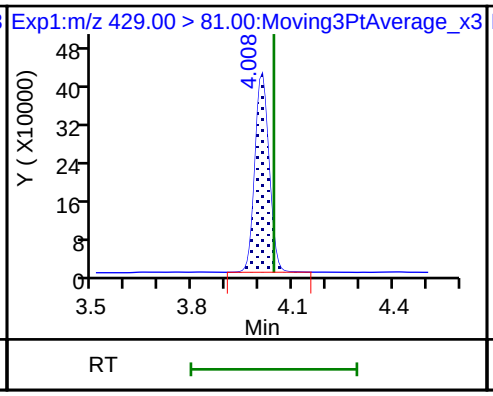
15 Perfluorohexanesulfonic acid



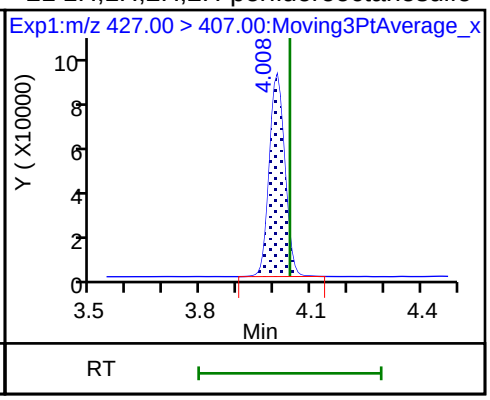
15 Perfluorohexanesulfonic acid



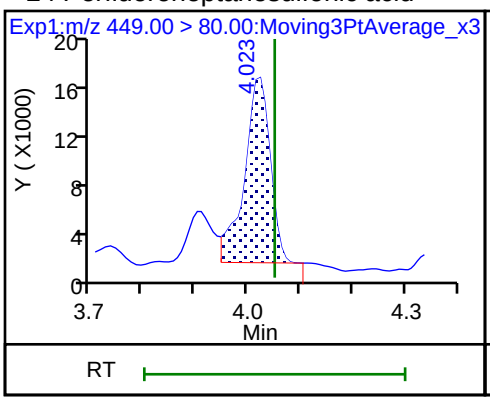
D 20 M2-6:2 FTS



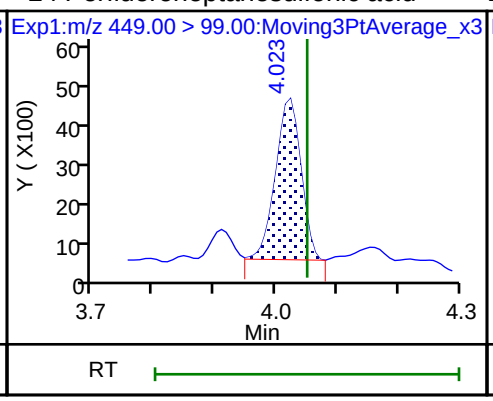
21 1H,1H,2H,2H-perfluorooctanesulfo



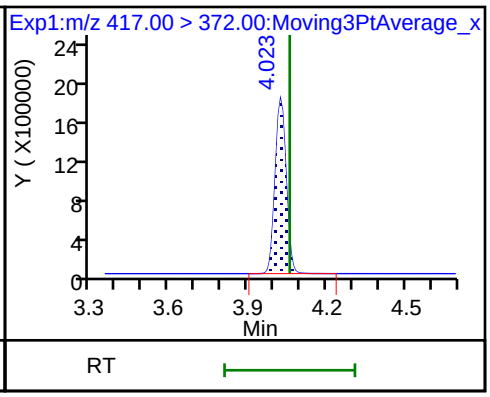
24 Perfluoroheptanesulfonic acid



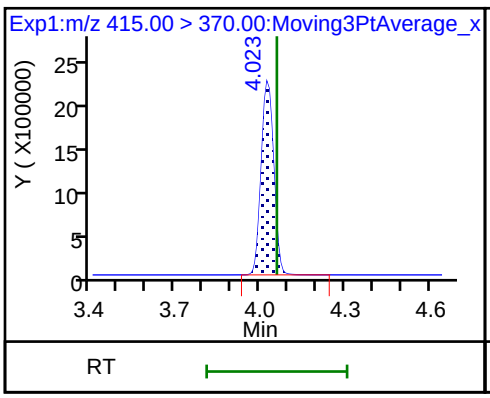
24 Perfluoroheptanesulfonic acid



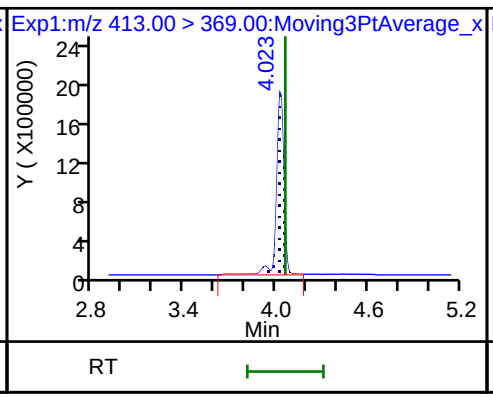
D 25 13C4 PFOA



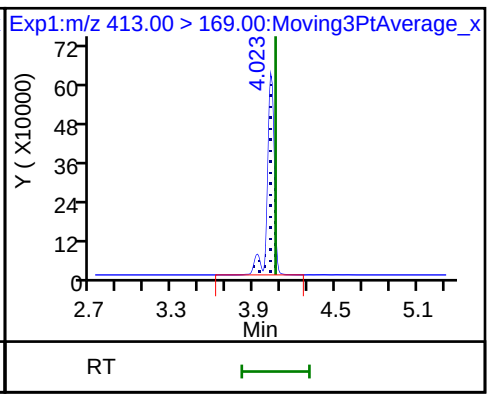
* 23 13C2 PFOA



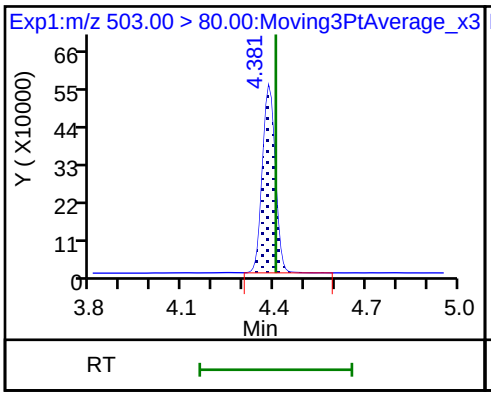
22 Perfluorooctanoic acid



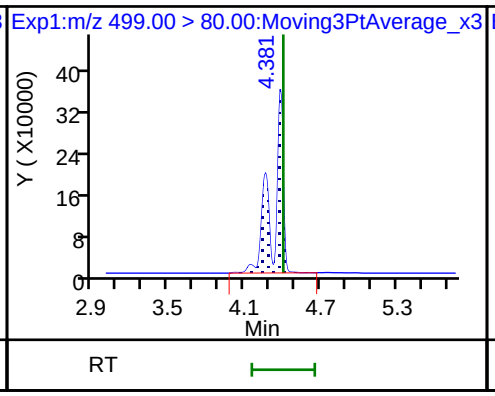
22 Perfluorooctanoic acid



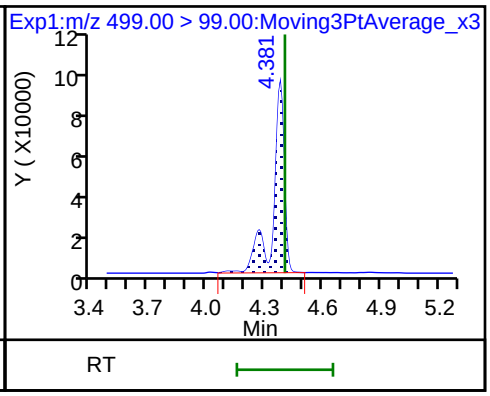
D 27 13C4 PFOS



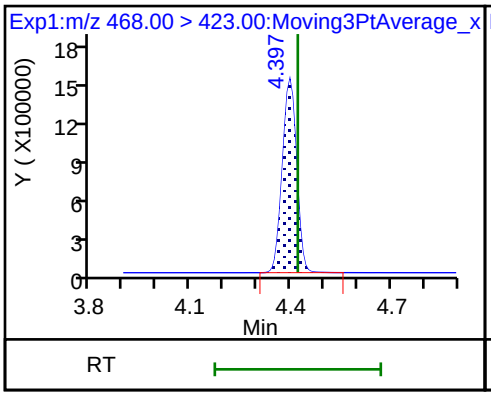
29 Perfluorooctanesulfonic acid



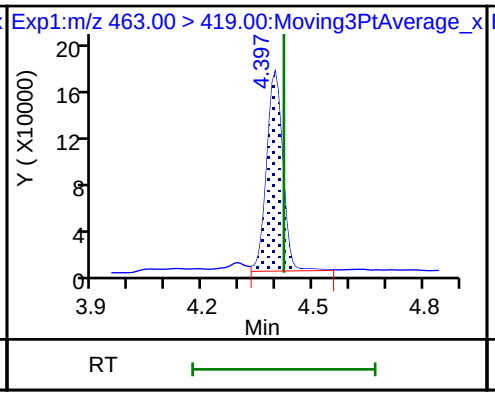
29 Perfluorooctanesulfonic acid



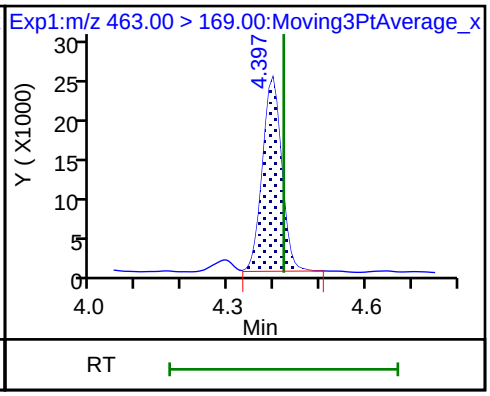
D 30 13C5 PFNA



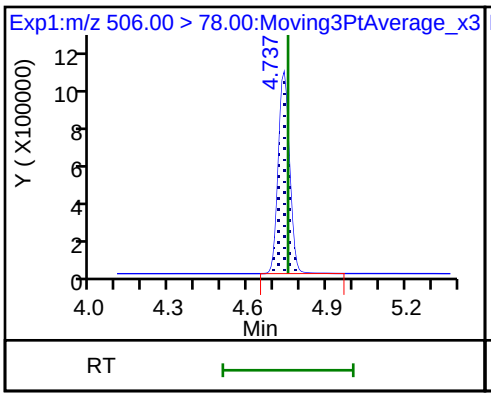
31 Perfluorononanoic acid



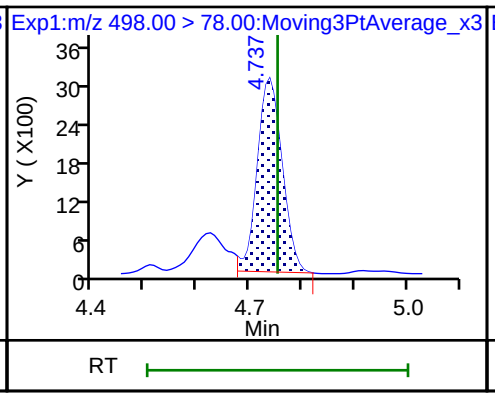
31 Perfluorononanoic acid



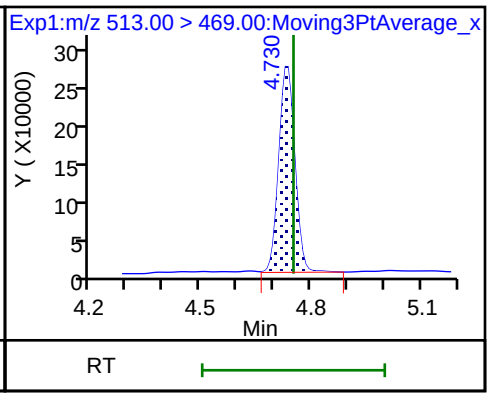
D 33 13C8 FOSA



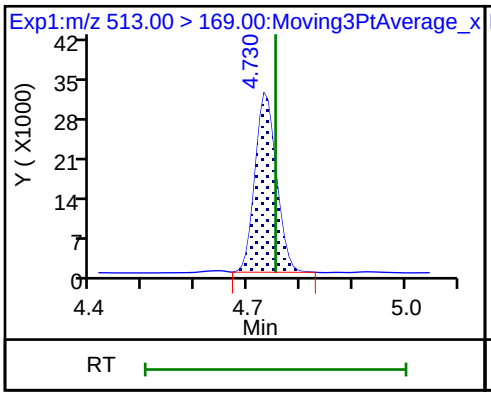
34 Perfluorooctanesulfonamide



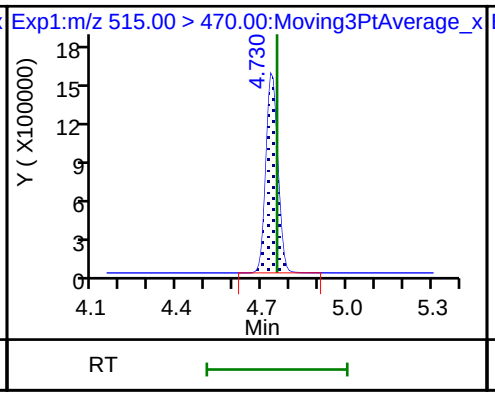
37 Perfluorodecanoic acid



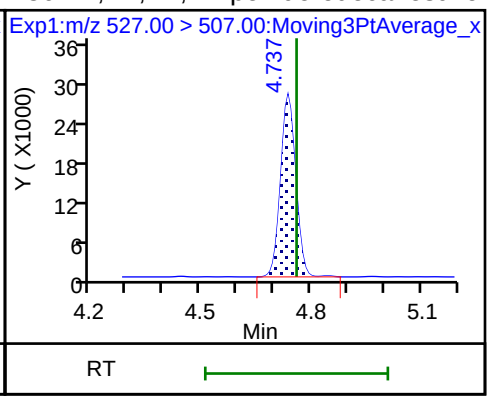
37 Perfluorodecanoic acid



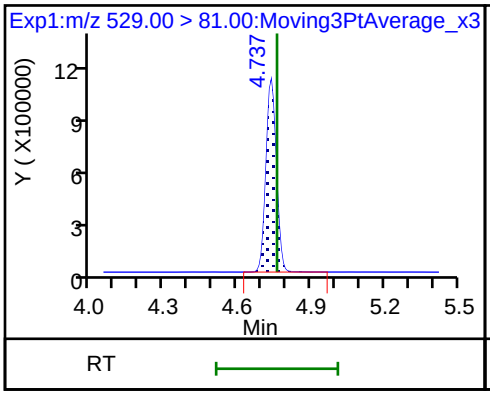
D 39 13C2 PFDA



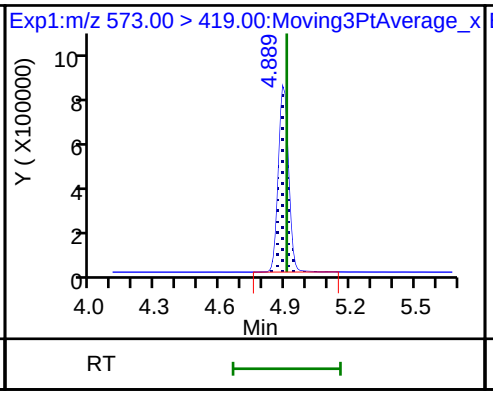
36 1H,1H,2H,2H-perfluorodecanesulfo



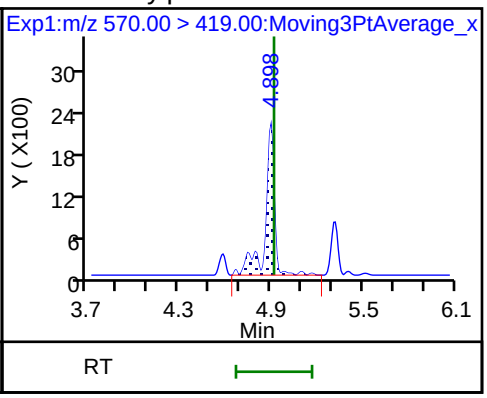
D 38 M2-8:2 FTS



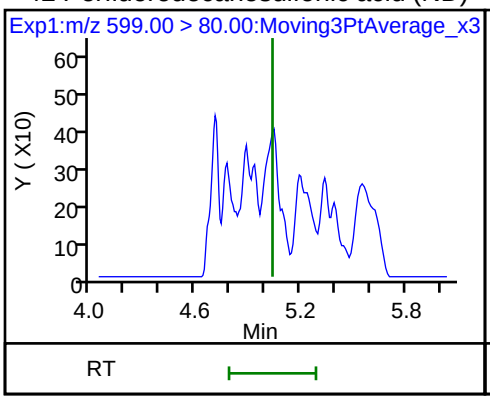
D 40 d3-NMeFOSAA



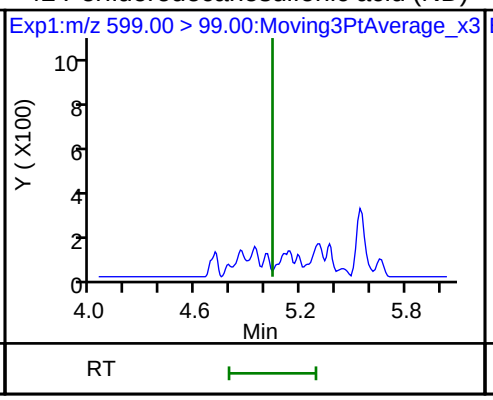
41 N-methylperfluorooctanesulfonami



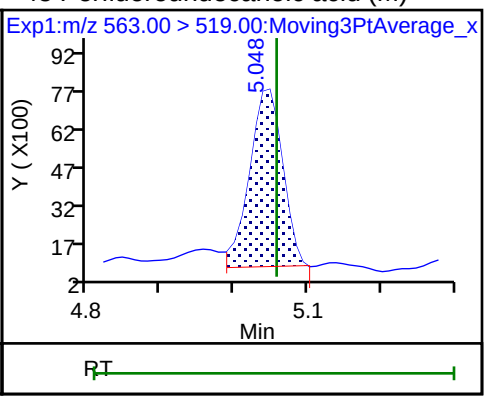
42 Perfluorodecanesulfonic acid (ND)



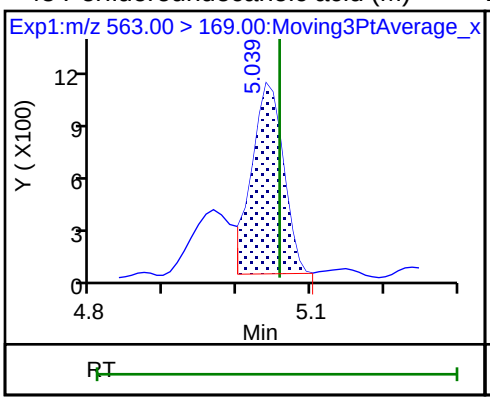
42 Perfluorodecanesulfonic acid (ND)



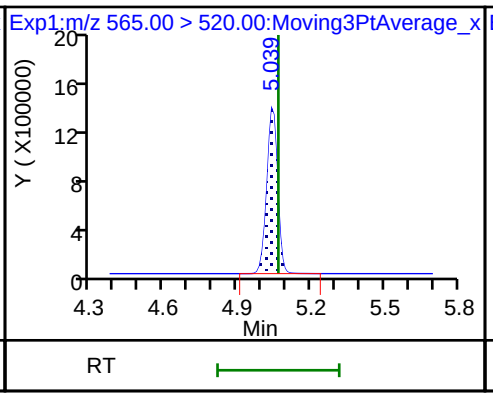
45 Perfluoroundecanoic acid (M)



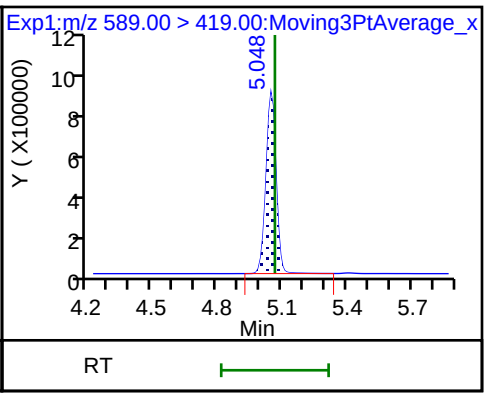
45 Perfluoroundecanoic acid (M)



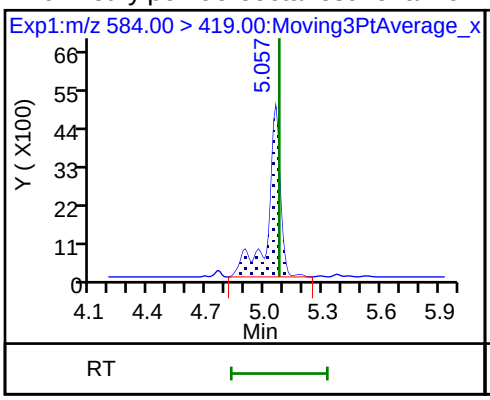
D 43 13C2 PFUnA



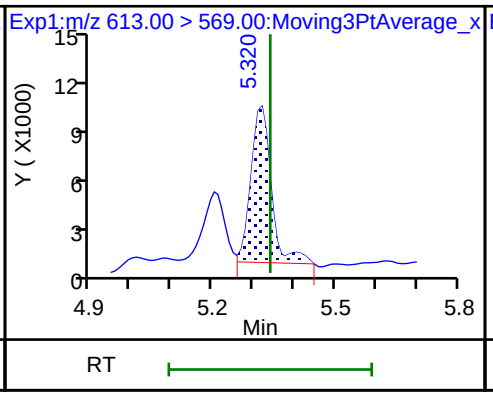
D 44 d5-NEtFOSAA



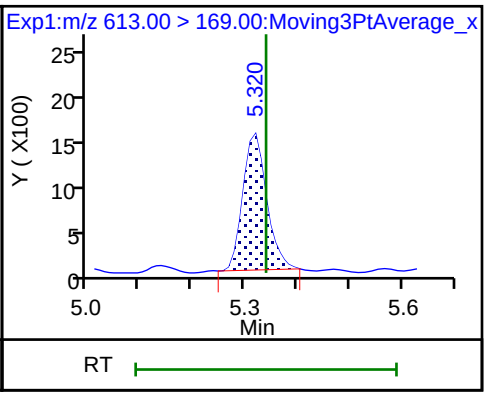
46 N-ethylperfluorooctanesulfonamid



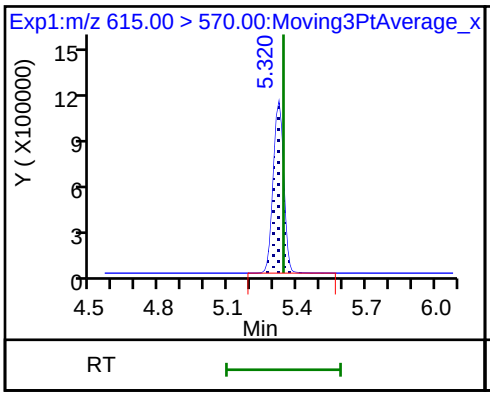
57 Perfluorododecanoic acid



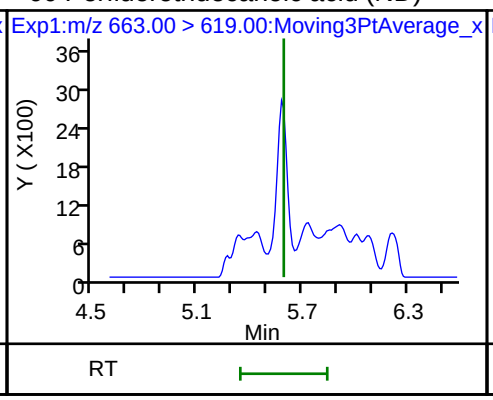
57 Perfluorododecanoic acid



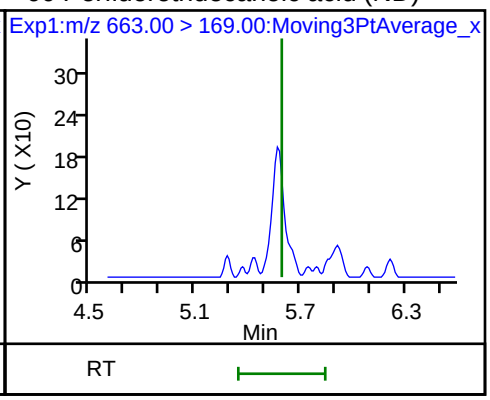
D 56 13C2 PFDoA



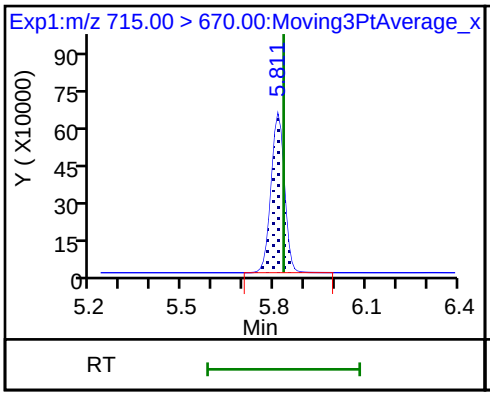
60 Perfluorotridecanoic acid (ND)



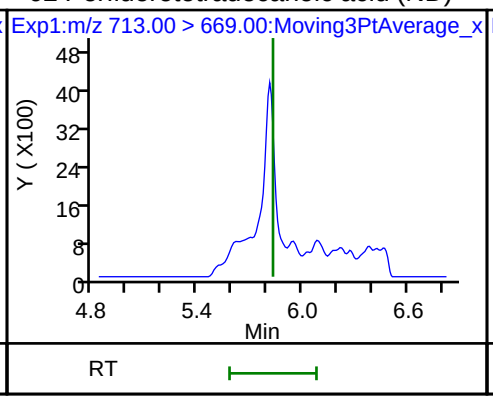
60 Perfluorotridecanoic acid (ND)



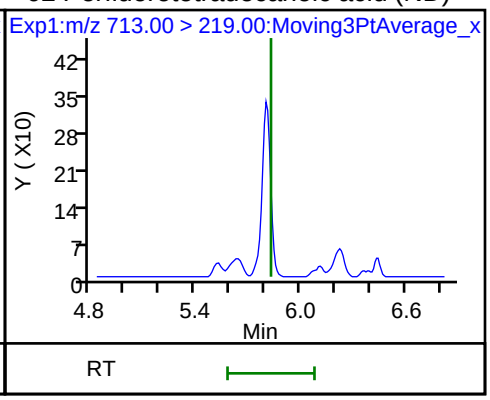
D 61 13C2 PFTeDA



62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



Eurofins TestAmerica, Sacramento

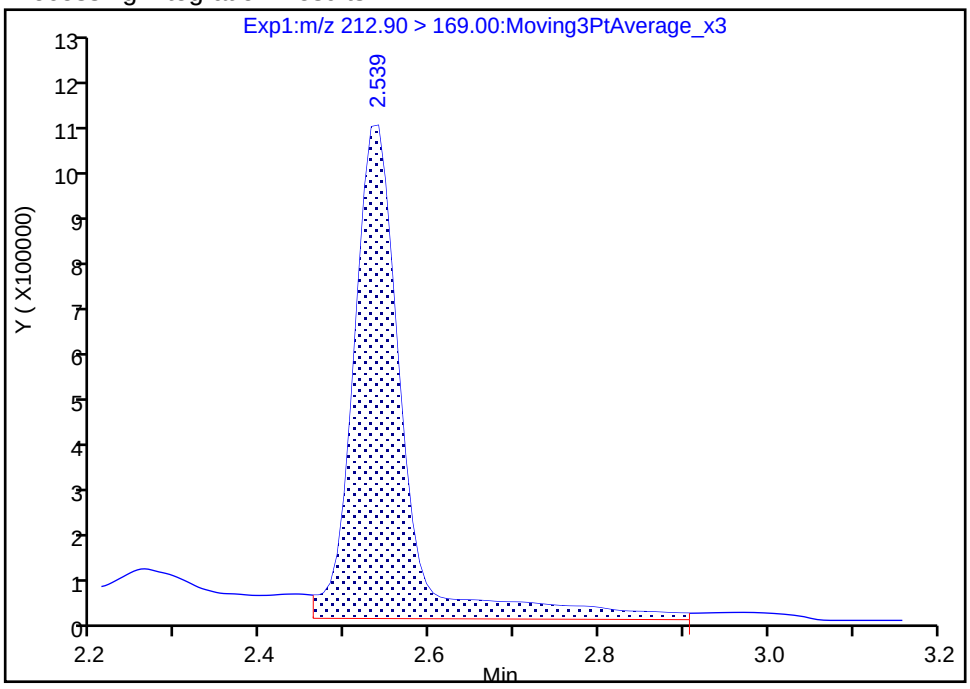
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_046.d				
Injection Date:	05-Jun-2020 06:50:09	Instrument ID:	A15		
Lims ID:	320-61353-A-4-A	Lab Sample ID:	320-61353-4		
Client ID:	SA SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	33	Worklist Smp#:	8
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

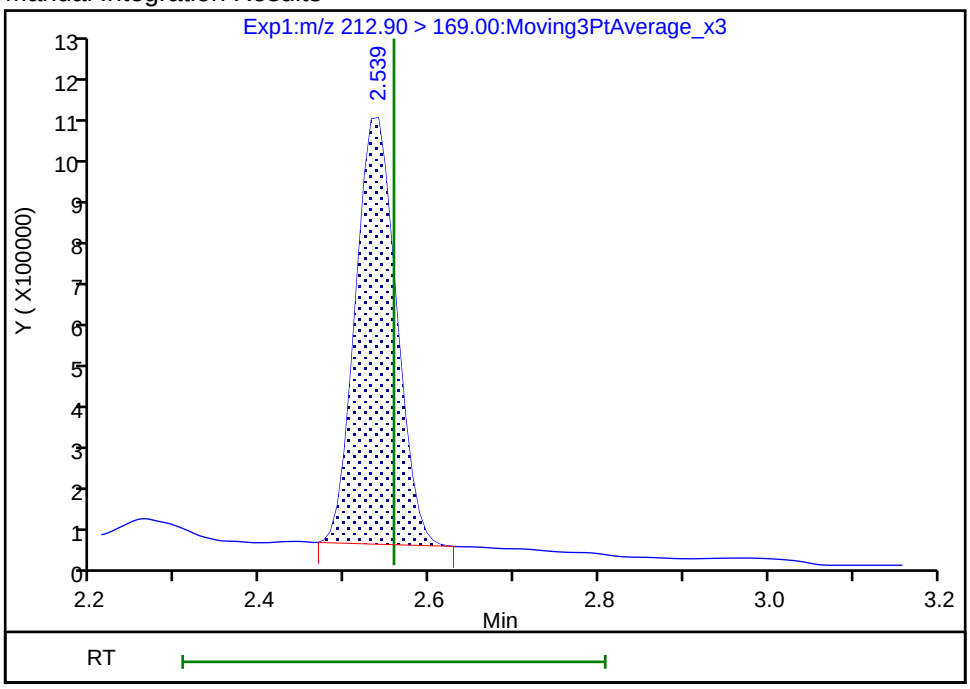
Processing Integration Results

RT: 2.54
Area: 4211304
Amount: 2.436980
Amount Units: ng/ml



Manual Integration Results

RT: 2.54
Area: 3315622
Amount: 1.918670
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:56:22
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

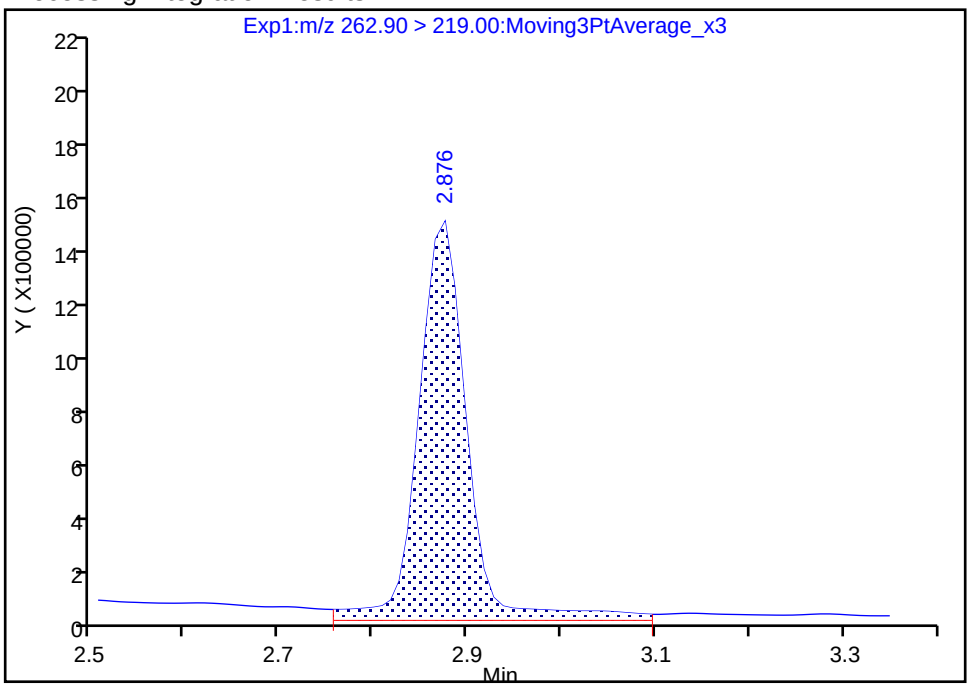
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_046.d				
Injection Date:	05-Jun-2020 06:50:09	Instrument ID:	A15		
Lims ID:	320-61353-A-4-A	Lab Sample ID:	320-61353-4		
Client ID:	SA SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	33	Worklist Smp#:	8
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

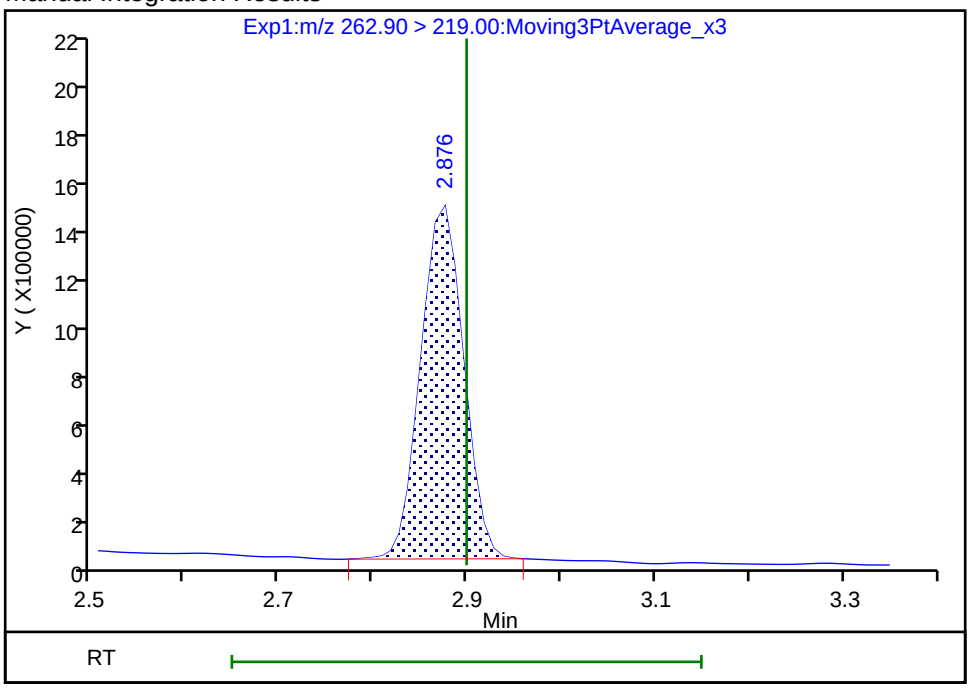
Processing Integration Results

RT: 2.88
Area: 5297411
Amount: 2.426610
Amount Units: ng/ml



Manual Integration Results

RT: 2.88
Area: 4523010
Amount: 2.071877
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:56:28

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

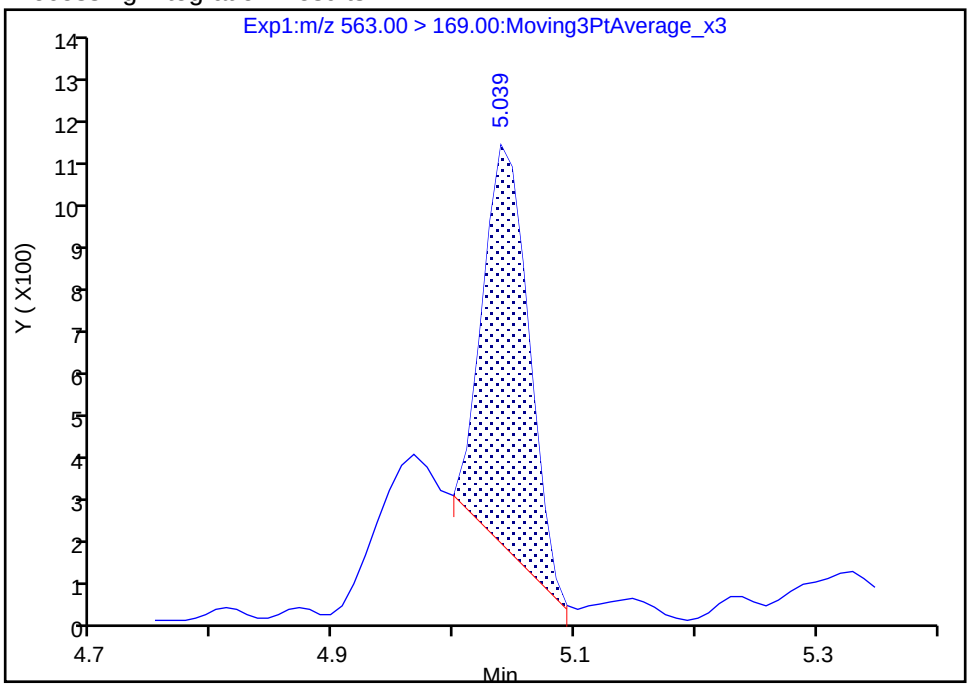
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_046.d				
Injection Date:	05-Jun-2020 06:50:09	Instrument ID:	A15		
Lims ID:	320-61353-A-4-A	Lab Sample ID:	320-61353-4		
Client ID:	SA SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	33	Worklist Smp#:	8
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

45 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

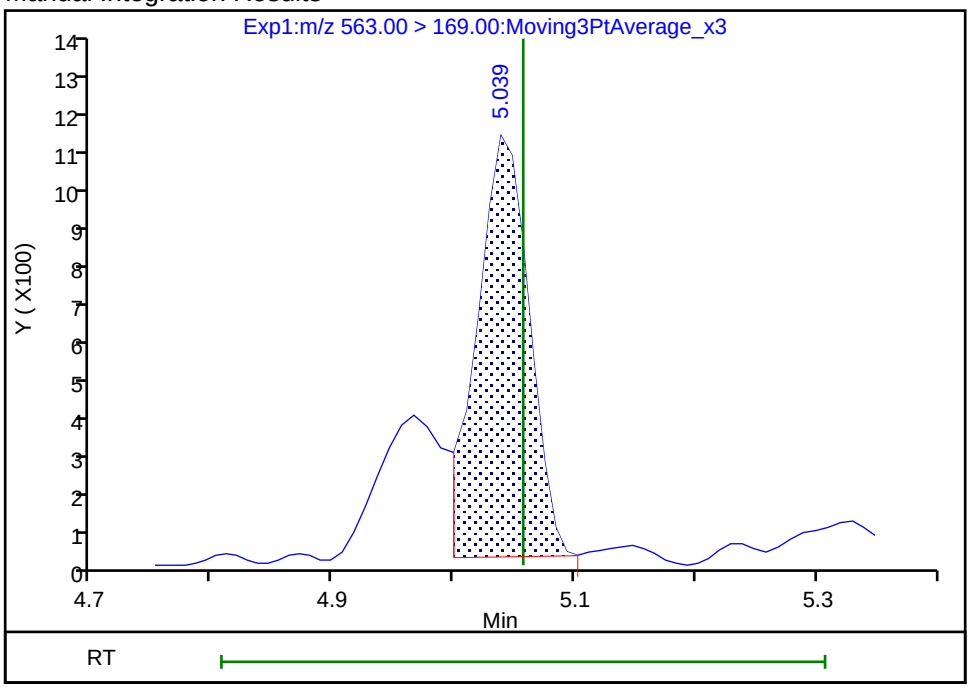
Processing Integration Results

RT: 5.04
Area: 2401
Amount: 0.020697
Amount Units: ng/ml



Manual Integration Results

RT: 5.04
Area: 3149
Amount: 0.018816
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:57:06
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

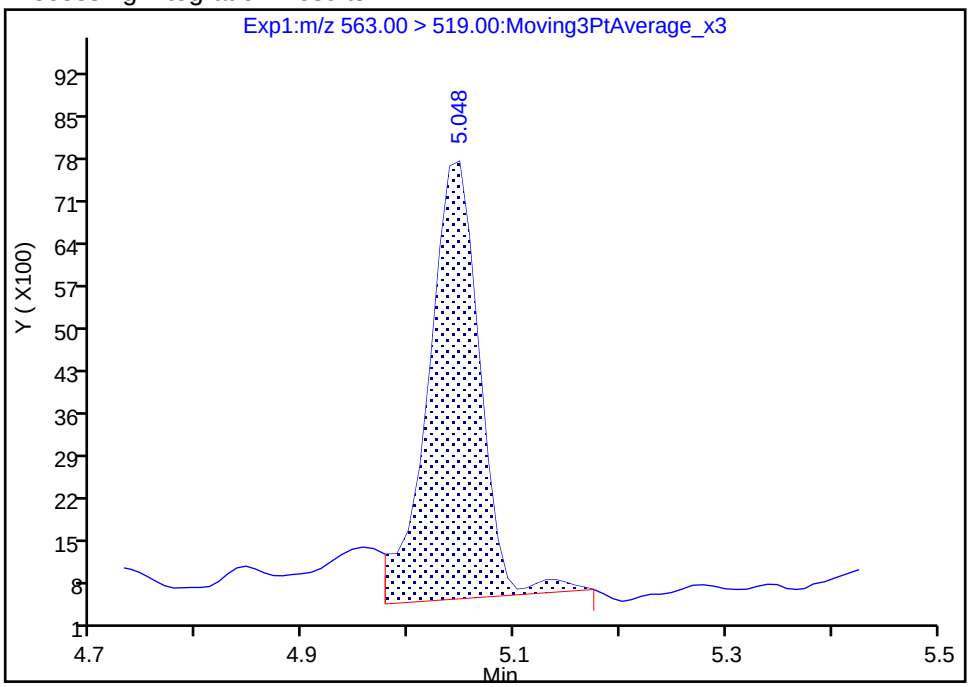
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_046.d				
Injection Date:	05-Jun-2020 06:50:09	Instrument ID:	A15		
Lims ID:	320-61353-A-4-A	Lab Sample ID:	320-61353-4		
Client ID:	SA SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	33	Worklist Smp#:	8
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

45 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

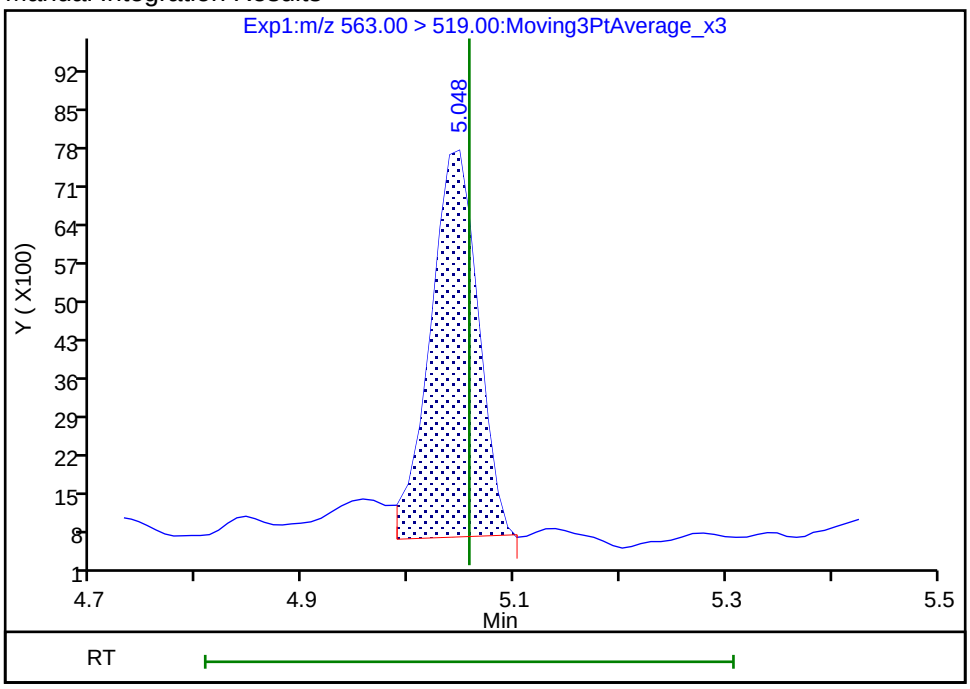
Processing Integration Results

RT: 5.05
Area: 24197
Amount: 0.020697
Amount Units: ng/ml



Manual Integration Results

RT: 5.05
Area: 21998
Amount: 0.018816
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:57:12

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

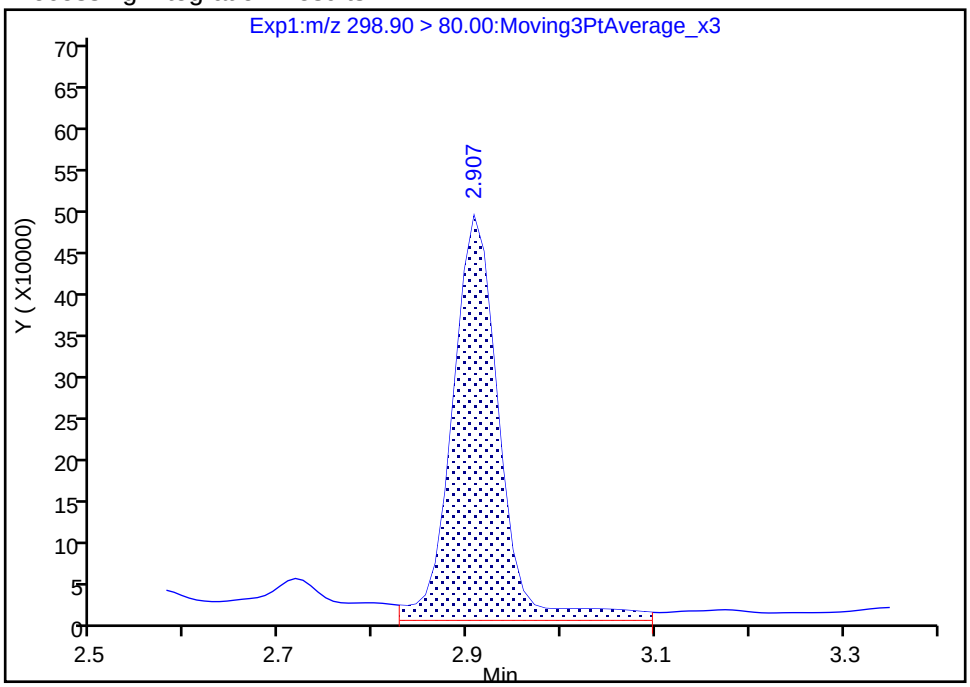
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_046.d				
Injection Date:	05-Jun-2020 06:50:09	Instrument ID:	A15		
Lims ID:	320-61353-A-4-A	Lab Sample ID:	320-61353-4		
Client ID:	SA SLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	33	Worklist Smp#:	8
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

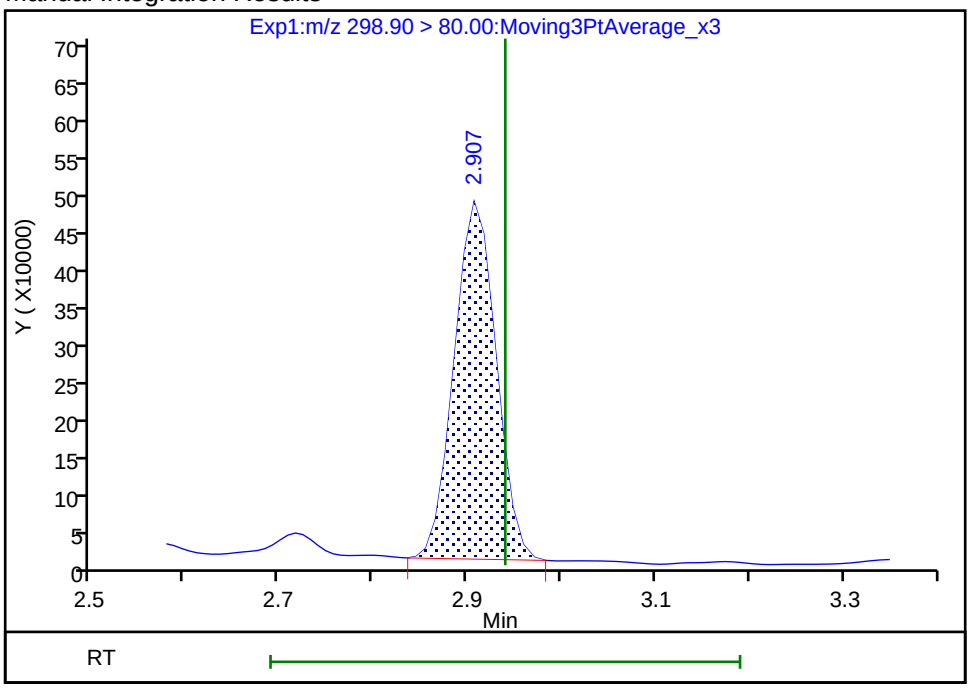
Processing Integration Results

RT: 2.91
Area: 1698291
Amount: 1.065707
Amount Units: ng/ml



Manual Integration Results

RT: 2.91
Area: 1458627
Amount: 0.915314
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:56:35
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: EQUIPMENT BLANK Lab Sample ID: 320-61353-5

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_047.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 11:30

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 279.8(mL) Date Analyzed: 06/05/2020 06:59

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	0.44	J	1.8	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		1.8	0.44
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		1.8	0.52
375-85-9	Perfluoroheptanoic acid	ND		1.8	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	ND		1.8	0.76
375-95-1	Perfluorononanoic acid (PFNA)	ND		1.8	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	ND		1.8	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.27	J B	1.8	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		1.8	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.29
754-91-6	Perfluorooctanesulfonamide (FOSA)	ND		1.8	0.31
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		18	1.7
27619-97-2	6:2 FTS	ND		18	1.8
39108-34-4	8:2 FTS	ND		18	1.8

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: EQUIPMENT BLANK Lab Sample ID: 320-61353-5

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_047.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 11:30

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 279.8(mL) Date Analyzed: 06/05/2020 06:59

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	117		25-150
STL01893	13C5 PFPeA	124		25-150
STL00993	13C2 PFHxA	126		25-150
STL01892	13C4 PFHpA	124		25-150
STL00990	13C4 PFOA	133		25-150
STL00995	13C5 PFNA	132		25-150
STL00996	13C2 PFDA	133		25-150
STL00997	13C2 PFUnA	116		25-150
STL00998	13C2 PFDoA	125		25-150
STL02116	13C2 PFTeDA	103		25-150
STL02337	13C3 PFBS	118		25-150
STL00994	18O2 PFHxS	121		25-150
STL00991	13C4 PFOS	117		25-150
STL01056	13C8 FOSA	107		25-150
STL02118	d3-NMeFOSAA	99		25-150
STL02117	d5-NEtFOSAA	105		25-150
STL02279	M2-6:2 FTS	129		25-150
STL02280	M2-8:2 FTS	120		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_047.d
Lims ID: 320-61353-A-5-A
Client ID: EQUIPMENT BLANK
Sample Type: Client
Inject. Date: 05-Jun-2020 06:59:18 ALS Bottle#: 34 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 320-61353-a-5-a
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 09:58:22 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: ruangyotsakuld Date: 08-Jun-2020 09:58:22
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

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	2.538	2.549	-0.011	0.627	9548168	2.93		117	14413	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.546	2.557	-0.011	1.003	43380	0.0123			3.6	
D 4 13C5 PFPeA										
267.90 > 223.00	2.886	2.899	-0.013	0.713	9010664	3.09		124	12122	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.886	2.899	-0.013	1.000	32293	0.008894			1.4	M
D 9 13C3 PFBS										
301.90 > 80.00	2.916	2.940	-0.024	0.721	5529722	2.74		118	9796	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.916	2.940	-0.024	1.000	4805	0.002072	Target=2.12		1.8	
298.90 > 99.00	2.927	2.940	-0.013	1.004	1550		3.10(1.06-3.19)		0.9	
D 11 13C2 PFHxA										
315.00 > 270.00	3.255	3.278	-0.023	0.804	8916083	3.15		126	16190	
D 18 13C4 PFHpA										
367.00 > 322.00	3.657	3.672	-0.015	0.904	6987564	3.11		124	12171	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.657	3.672	-0.015	1.000	6226	0.002204	Target=3.85		1.5	
363.00 > 169.00	3.657	3.672	-0.015	1.000	2358		2.64(1.93-5.78)		12.4	
D 17 18O2 PFHxS										
403.00 > 84.00	3.657	3.682	-0.025	0.904	2788049	2.87		121	13706	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.657	3.682	-0.025	1.000	10025	0.007573	Target=2.99		28.3	
399.00 > 99.00	3.667	3.682	-0.016	1.003	3183		3.15(1.49-4.48)		18.2	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.031	4.042	-0.011	0.996	910065	3.07		129	4064	

Report Date: 08-Jun-2020 09:58:22 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_047.d
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 25 13C4 PFOA										
417.00 > 372.00	4.047	4.059	-0.012	1.000	6740183	3.32		133	13667	
* 23 13C2 PFOA										
415.00 > 370.00	4.047	4.059	-0.012		5151290	2.50			12121	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.055	4.059	-0.004	1.002	25478	0.008944	Target=2.79		1.9	M
413.00 > 169.00	4.055	4.059	-0.004	1.002	7583		3.36(1.39-4.18)		23.3	
D 27 13C4 PFOS										
503.00 > 80.00	4.412	4.405	0.007	1.090	2102981	2.79		117	8380	
D 30 13C5 PFNA										
468.00 > 423.00	4.420	4.420	0.0	1.092	5137940	3.31		132	13946	
D 33 13C8 FOSA										
506.00 > 78.00	4.767	4.752	0.015	1.178	3993182	2.66		107	5562	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.767	4.752	0.015	1.000	11178	0.007967			161	
D 39 13C2 PFDA										
515.00 > 470.00	4.767	4.752	0.015	1.178	4936771	3.33		133	12776	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.767	4.761	0.006	1.178	1015562	2.87		120	3211	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.924	4.907	0.017	1.217	1362945	2.46		98.6	2356	
D 43 13C2 PFUnA										
565.00 > 520.00	5.073	5.066	0.007	1.254	3649619	2.89		116	9034	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.082	5.066	0.016	1.256	1472965	2.62		105	2086	
D 56 13C2 PFDoA										
615.00 > 570.00	5.347	5.340	0.007	1.321	3489773	3.12		125	14869	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.839	5.830	0.009	1.443	1884693	2.58		103	8148	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 08-Jun-2020 09:58:22 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_047.d

Injection Date: 05-Jun-2020 06:59:18 Instrument ID: A15

Lims ID: 320-61353-A-5-A Lab Sample ID: 320-61353-5

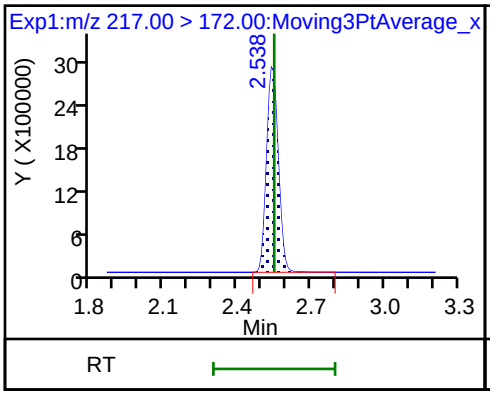
Client ID: EQUIPMENT BLANK

Operator ID: SACINSTA15 ALS Bottle#: 34 Worklist Smp#: 9

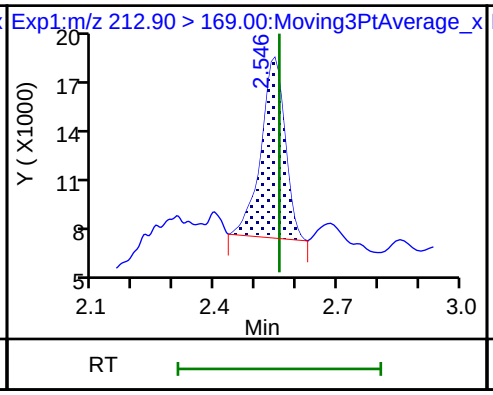
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

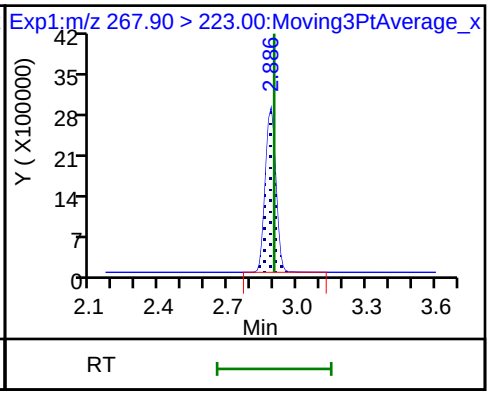
D 1 13C4 PFBA



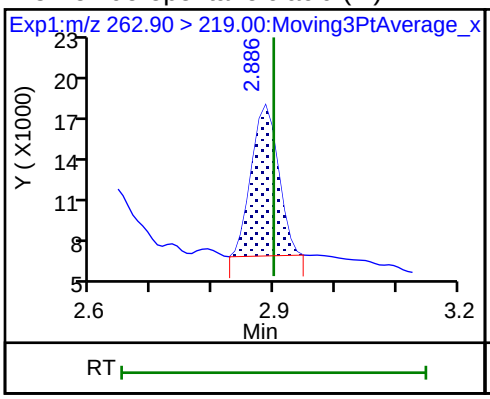
2 Perfluorobutanoic acid



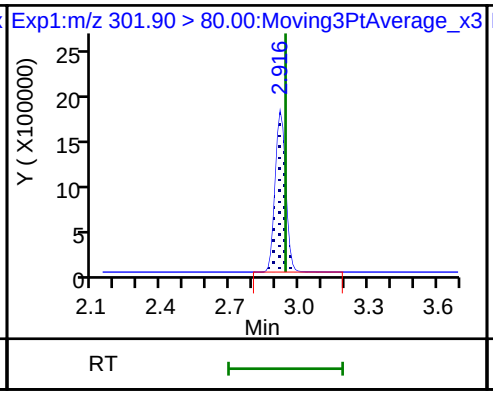
D 4 13C5 PFPeA



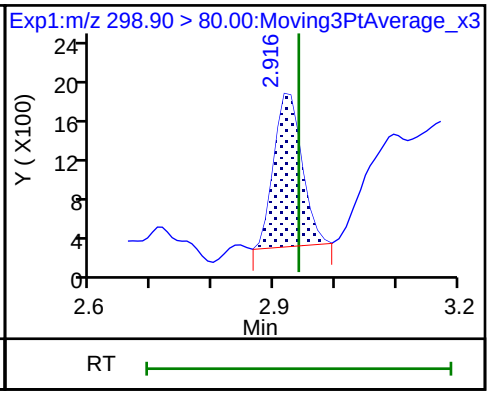
5 Perfluoropentanoic acid (M)



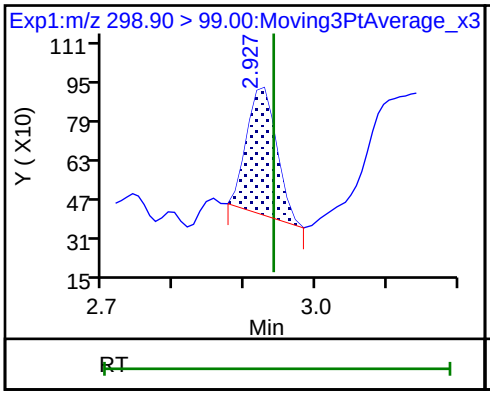
D 9 13C3 PFBS



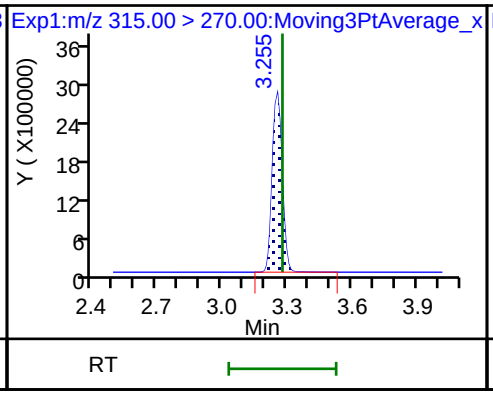
6 Perfluorobutanesulfonic acid



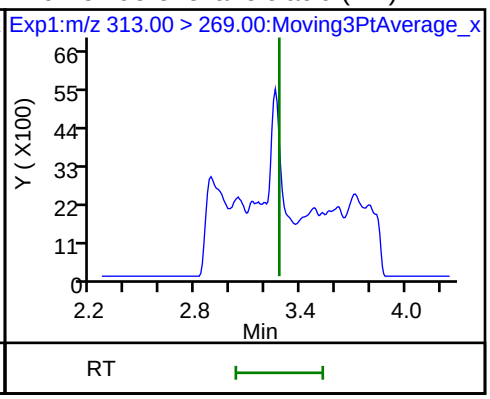
6 Perfluorobutanesulfonic acid



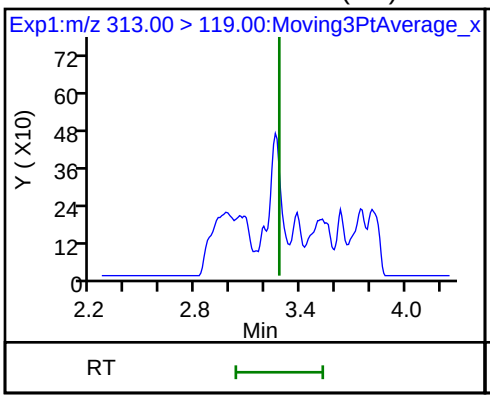
D 11 13C2 PFHxA



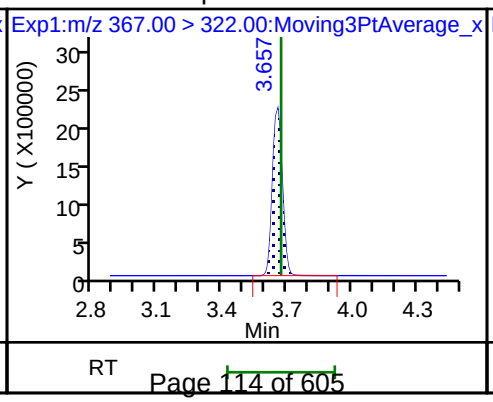
10 Perfluorohexanoic acid (ND)



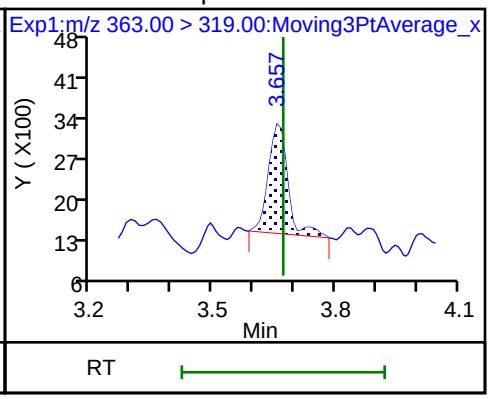
10 Perfluorohexanoic acid (ND)



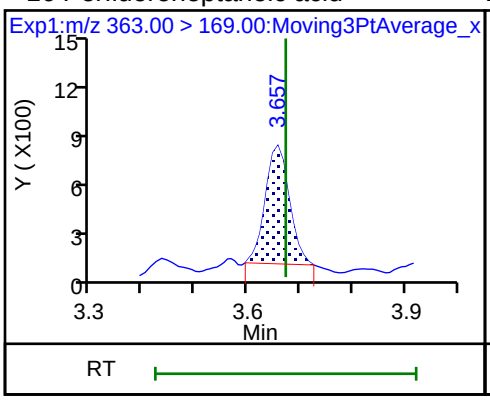
D 18 13C4 PFHpA



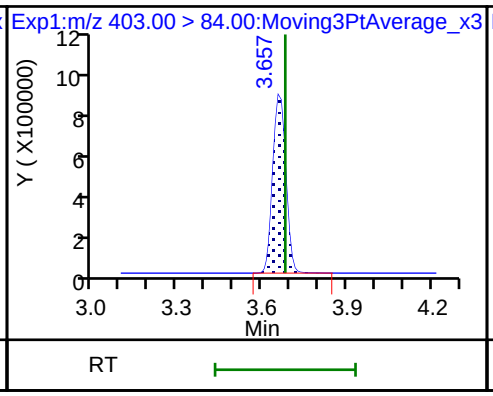
16 Perfluoroheptanoic acid



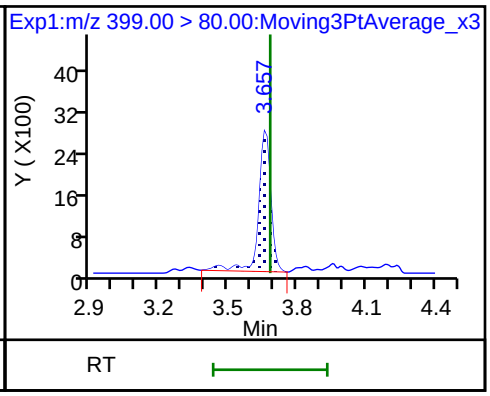
16 Perfluoroheptanoic acid



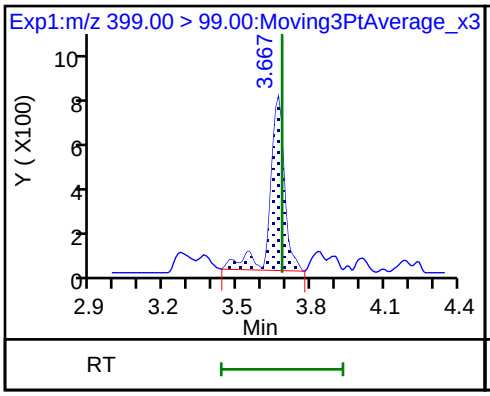
D 17 18O2 PFHxS



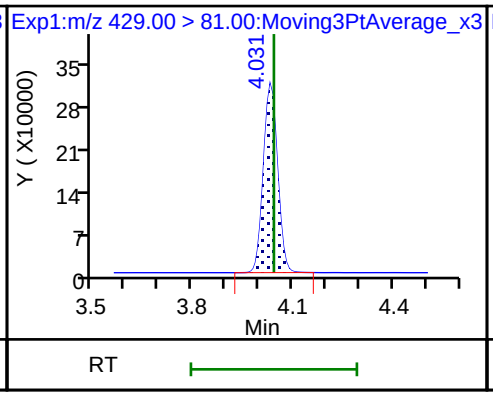
15 Perfluorohexanesulfonic acid



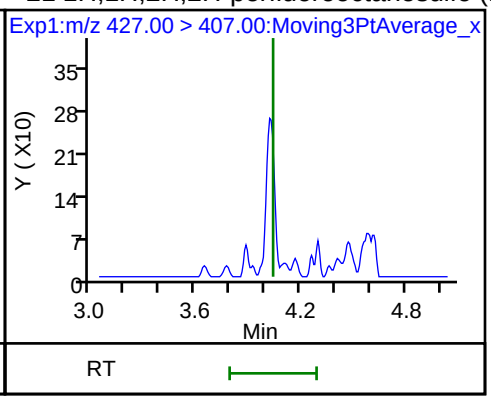
15 Perfluorohexanesulfonic acid



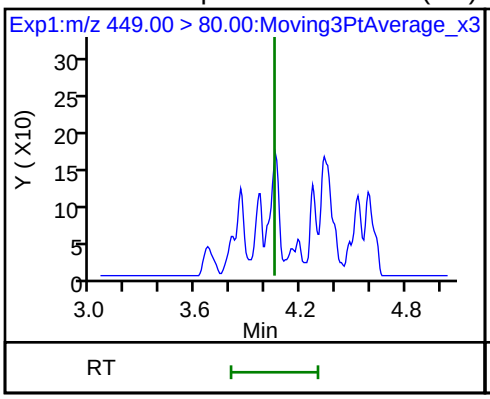
D 20 M2-6:2 FTS



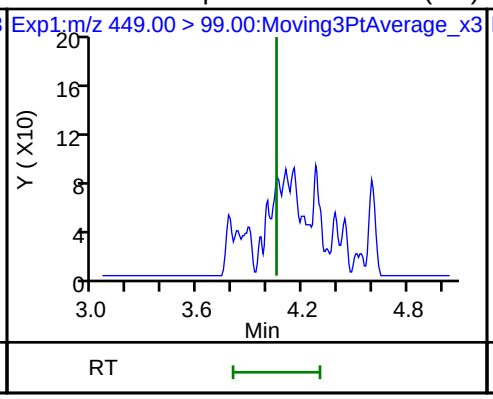
21 1H,1H,2H,2H-perfluorooctanesulfo (ND)



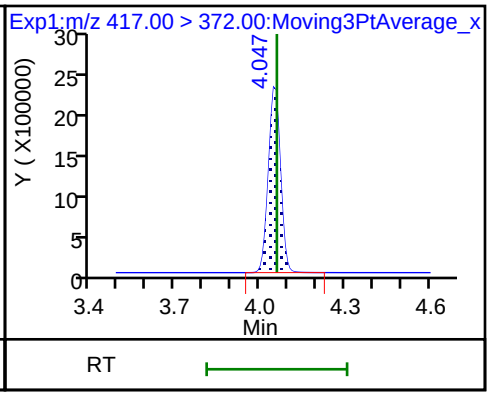
24 Perfluoroheptanesulfonic acid (ND)



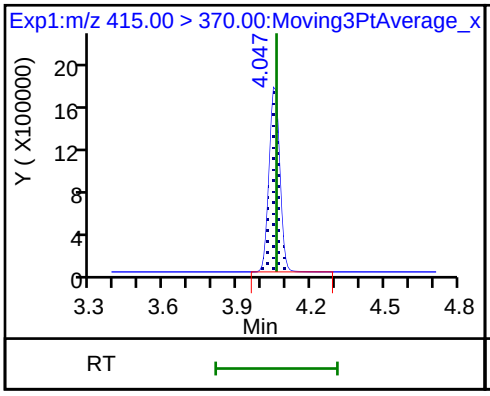
24 Perfluoroheptanesulfonic acid (ND)



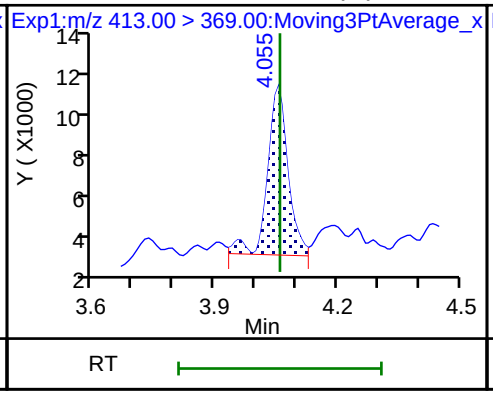
D 25 13C4 PFOA



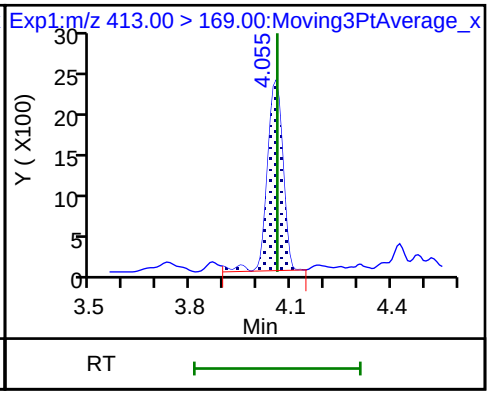
* 23 13C2 PFOA



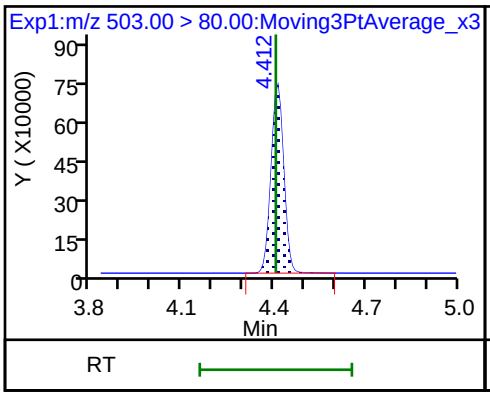
22 Perfluorooctanoic acid (M)



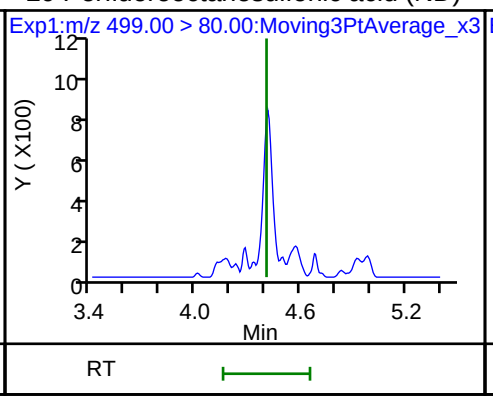
22 Perfluorooctanoic acid



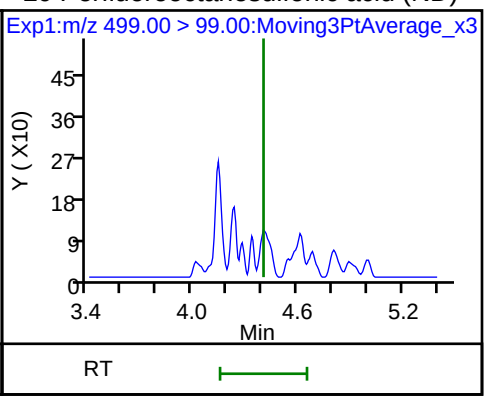
D 27 13C4 PFOS



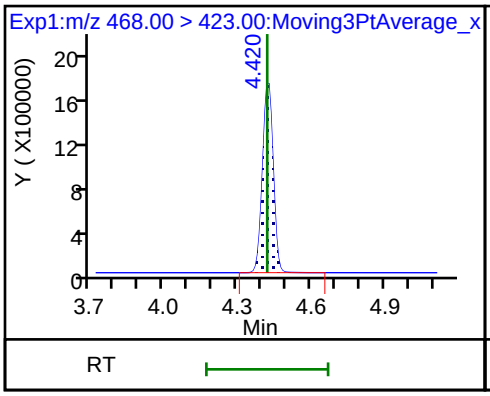
29 Perfluorooctanesulfonic acid (ND)



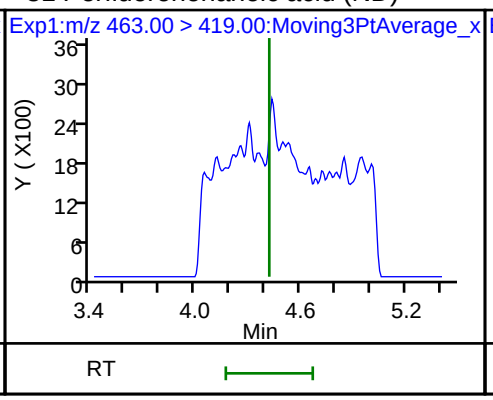
29 Perfluorooctanesulfonic acid (ND)



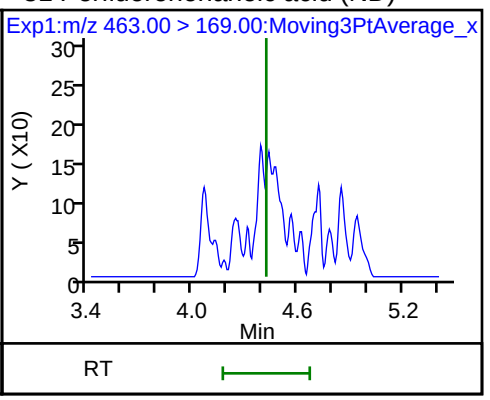
D 30 13C5 PFNA



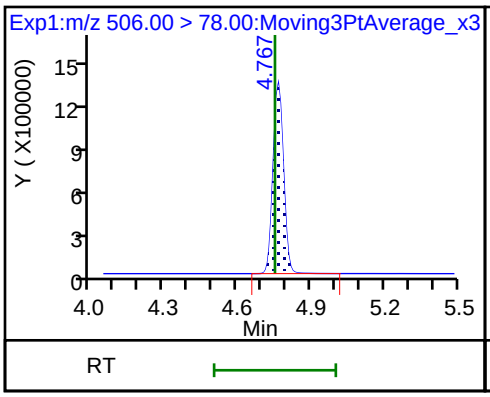
31 Perfluorononanoic acid (ND)



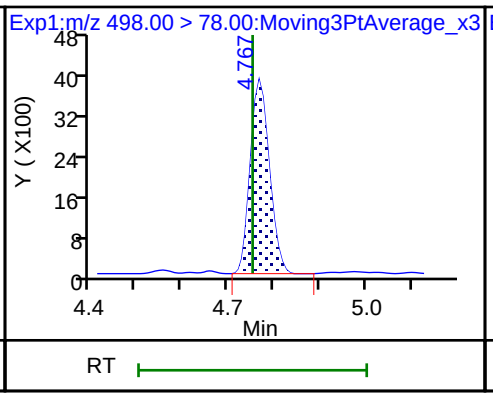
31 Perfluorononanoic acid (ND)



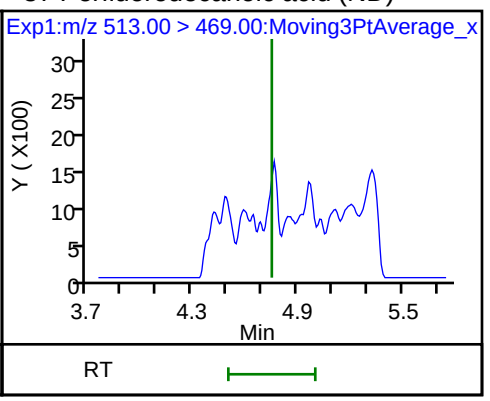
D 33 13C8 FOSA



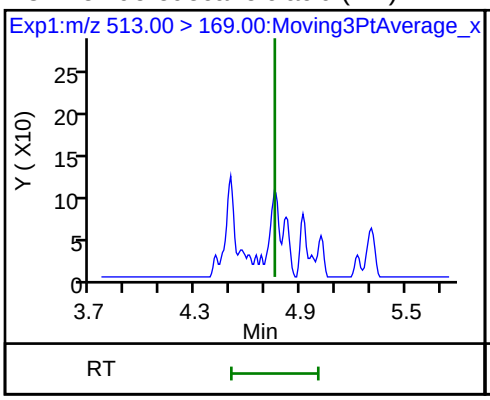
34 Perfluorooctanesulfonamide



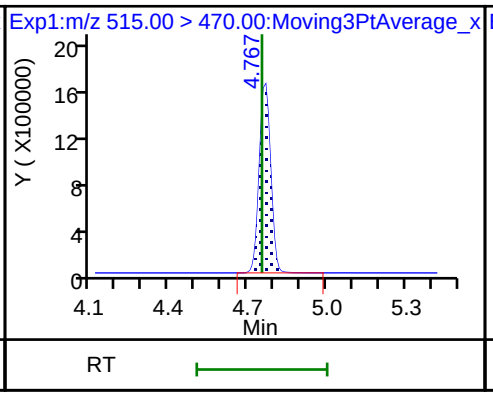
37 Perfluorodecanoic acid (ND)



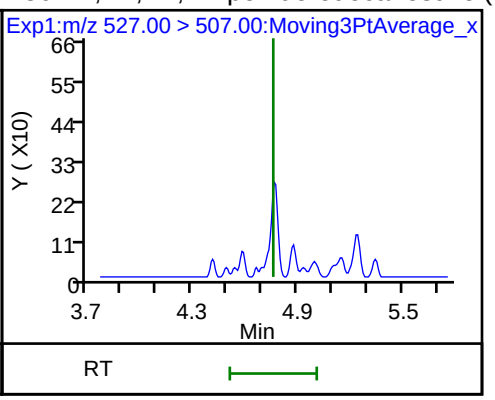
37 Perfluorodecanoic acid (ND)



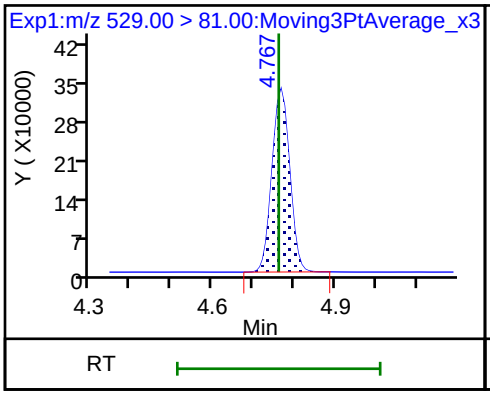
D 39 13C2 PFDA



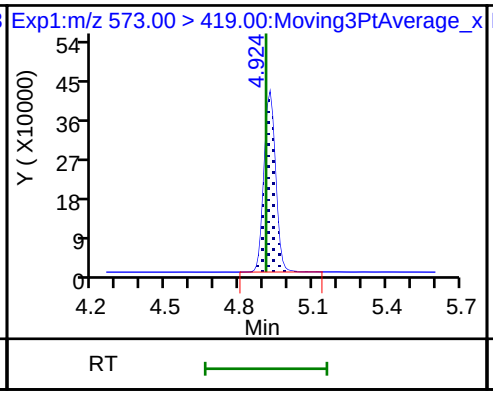
36 1H,1H,2H,2H-perfluorodecanesulfo (ND)



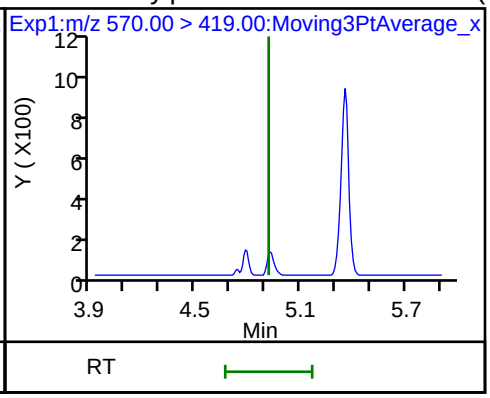
D 38 M2-8:2 FTS



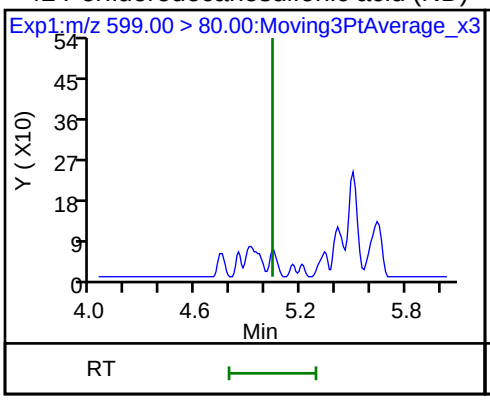
D 40 d3-NMeFOSAA



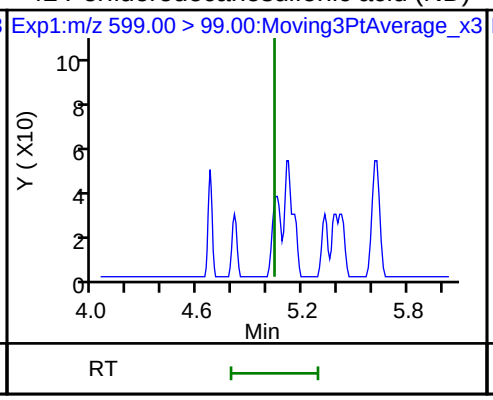
41 N-methylperfluorooctanesulfonami (ND)



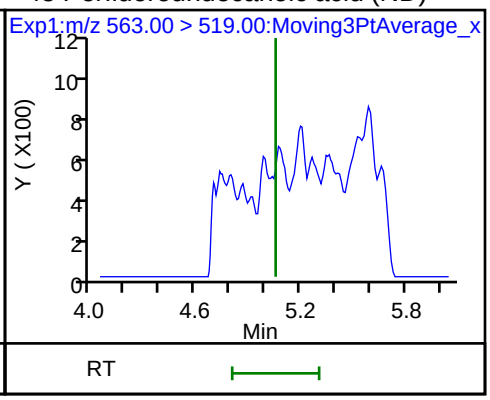
42 Perfluorodecanesulfonic acid (ND)



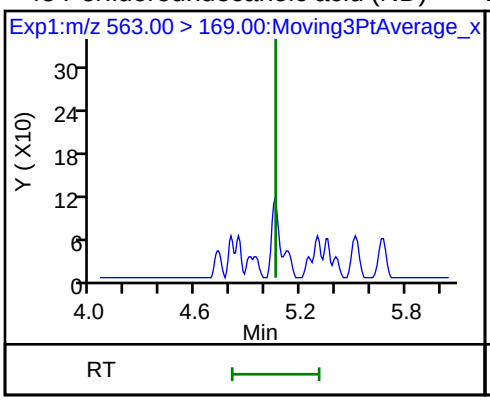
42 Perfluorodecanesulfonic acid (ND)



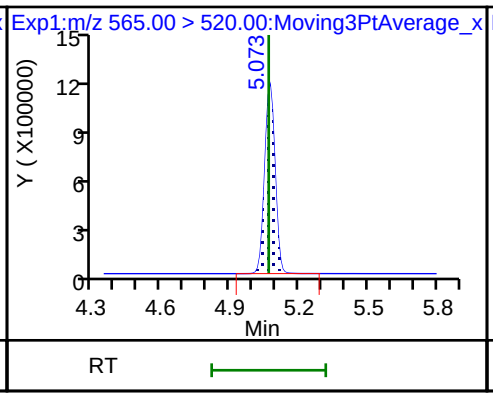
45 Perfluoroundecanoic acid (ND)



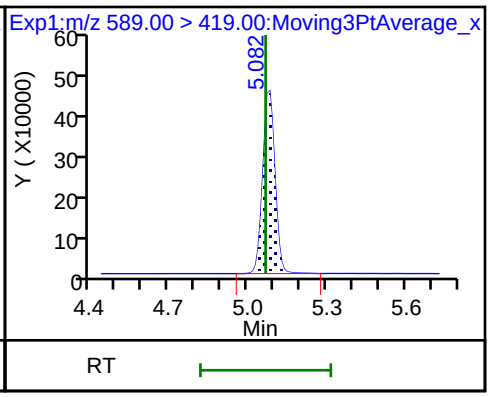
45 Perfluoroundecanoic acid (ND)



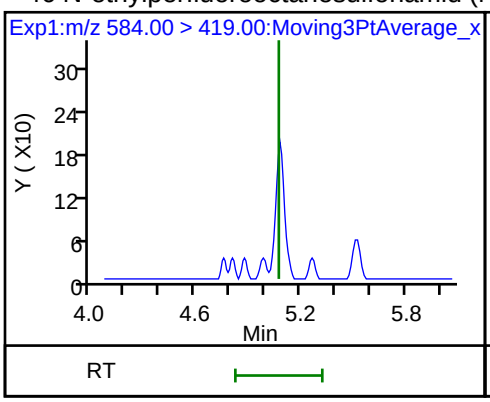
D 43 13C2 PFUnA



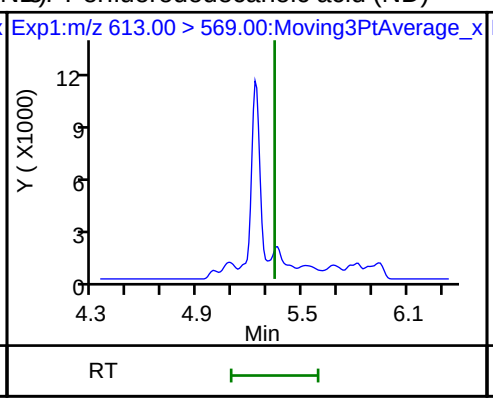
D 44 d5-NEtFOSAA



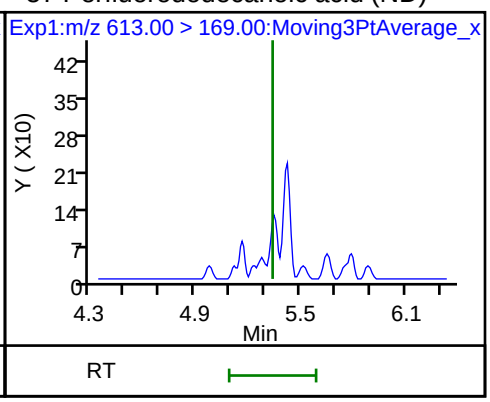
46 N-ethylperfluorooctanesulfonamid (ND)



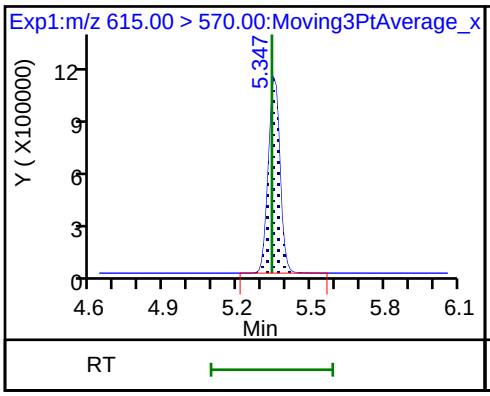
57 Perfluorododecanoic acid (ND)



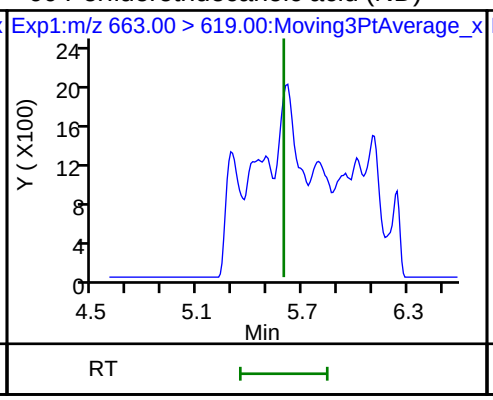
57 Perfluorododecanoic acid (ND)



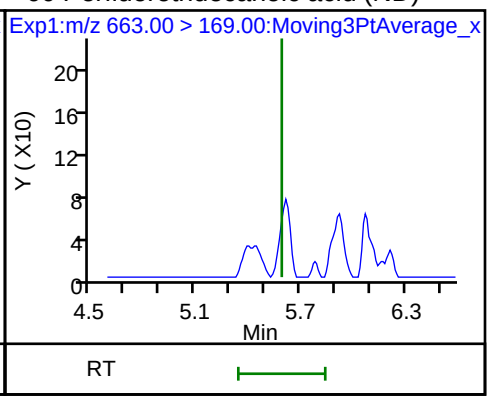
D 56 13C2 PFDoA



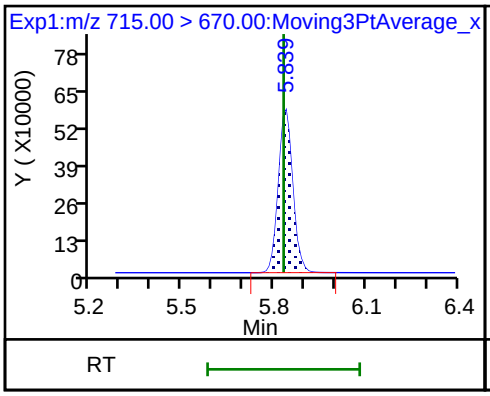
60 Perfluorotridecanoic acid (ND)



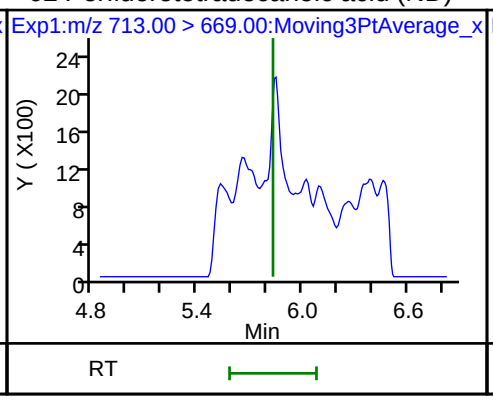
60 Perfluorotridecanoic acid (ND)



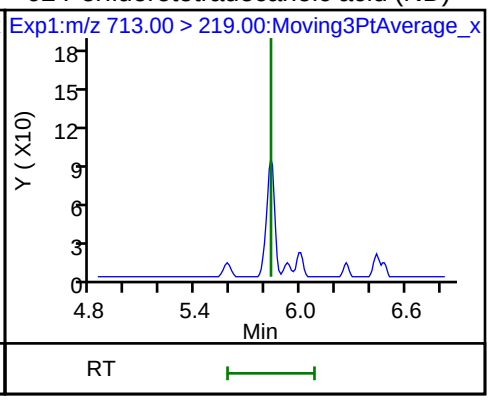
D 61 13C2 PFTeDA



62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



Eurofins TestAmerica, Sacramento

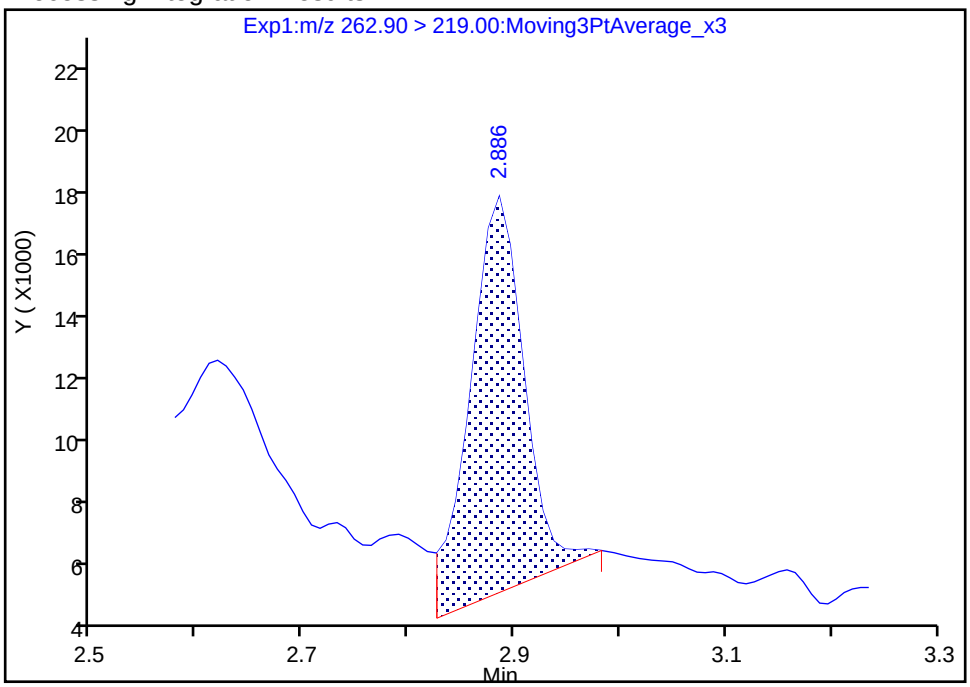
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_047.d				
Injection Date:	05-Jun-2020 06:59:18	Instrument ID:	A15		
Lims ID:	320-61353-A-5-A	Lab Sample ID:	320-61353-5		
Client ID:	EQUIPMENT BLANK				
Operator ID:	SACINSTA15	ALS Bottle#:	34	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

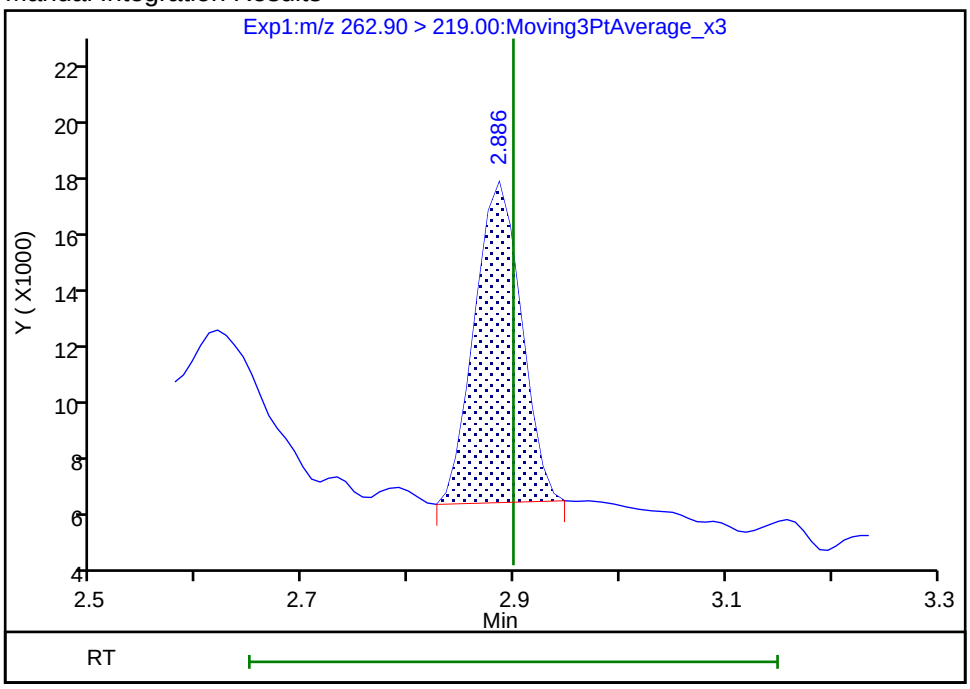
Processing Integration Results

RT: 2.89
Area: 41639
Amount: 0.011468
Amount Units: ng/ml



Manual Integration Results

RT: 2.89
Area: 32293
Amount: 0.008894
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:57:47
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

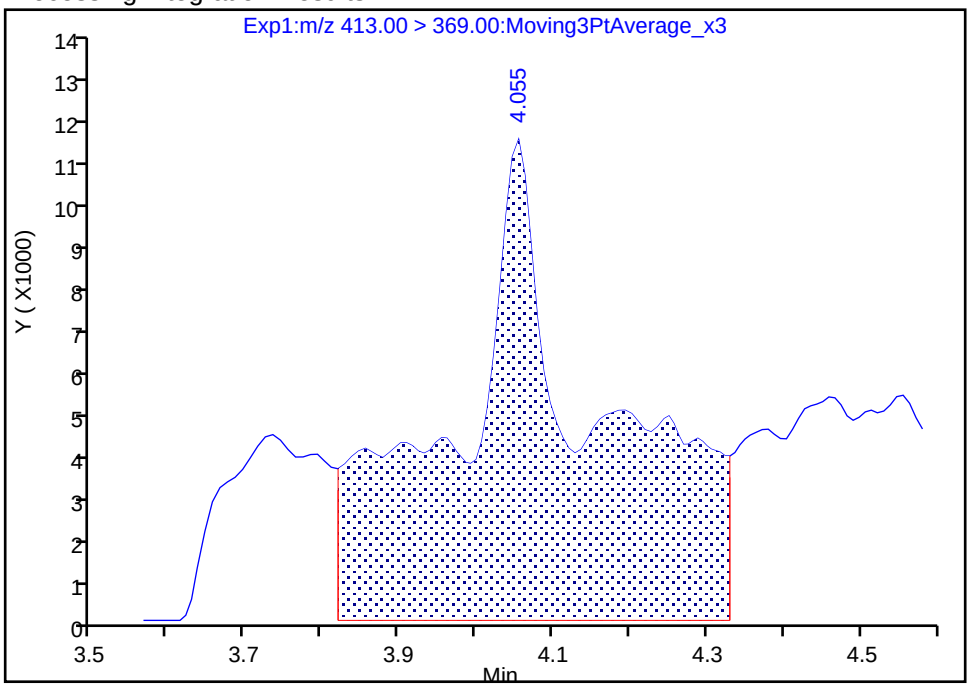
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_047.d				
Injection Date:	05-Jun-2020 06:59:18	Instrument ID:	A15		
Lims ID:	320-61353-A-5-A	Lab Sample ID:	320-61353-5		
Client ID:	EQUIPMENT BLANK				
Operator ID:	SACINSTA15	ALS Bottle#:	34	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

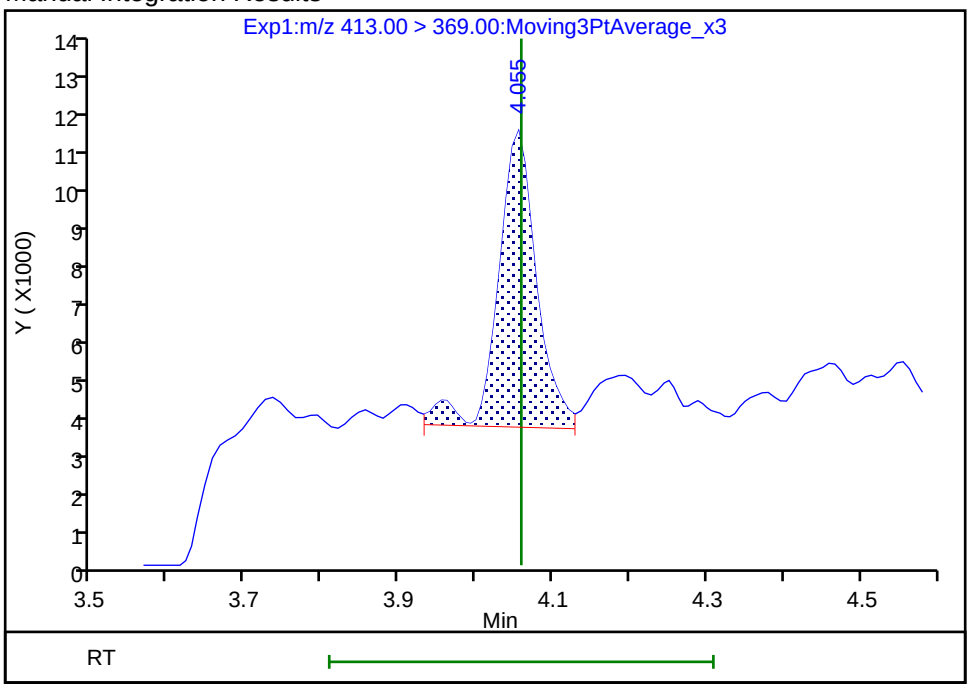
Processing Integration Results

RT: 4.06
Area: 142658
Amount: 0.050081
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 25478
Amount: 0.008944
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:58:07
Audit Action: Manually Integrated Audit Reason: Baseline

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 383313

SDG No.: 70132491

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-383313/2	2020.06.04_A15_PFC_ICAL_A_004.d
Level 2	IC 320-383313/3	2020.06.04_A15_PFC_ICAL_A_005.d
Level 3	IC 320-383313/4	2020.06.04_A15_PFC_ICAL_A_006.d
Level 4	IC 320-383313/5	2020.06.04_A15_PFC_ICAL_A_007.d
Level 5	IC 320-383313/6	2020.06.04_A15_PFC_ICAL_A_008.d
Level 6	IC 320-383313/7	2020.06.04_A15_PFC_ICAL_A_009.d
Level 7	IC 320-383313/8	2020.06.04_A15_PFC_ICAL_A_010.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid	0.8709 0.9638	0.8756 0.9761	0.8923	0.9495	0.9535	AveID		0.9260				4.8		35.0			
Perfluoropentanoic acid (PFPeA)	1.1935 0.9805	1.0291 0.9794	0.9557	0.9561	0.9575	AveID		1.0074				8.5		35.0			
Perfluorobutanesulfonic acid (PFBS)	0.9442 1.0308	0.9591 1.0073	0.9404	0.9551	0.9872	AveID		0.9749				3.5		35.0			
4:2 FTS	2.1261 2.3790	2.1158 2.3896	2.1001	2.3393	2.3370	AveID		2.2553				5.9		35.0			
Perfluorohexanoic acid (PFHxA)	1.0361 0.9239	0.9374 0.9063	0.9339	0.9094	0.9154	AveID		0.9375				4.8		35.0			
Perfluoropentanesulfonic acid (PFPeS)	0.6728 0.7572	0.6977 0.7690	0.7357	0.7331	0.7690	AveID		0.7335				5.0		50.0			
HFPO-DA (GenX)	0.8363 0.9180	0.8377 0.9640	0.8904	0.9761	0.9715	AveID		0.9134				6.6		35.0			
Perfluoroheptanoic acid	0.9402 1.0071	1.0140 0.9875	1.0193	1.0603	1.0476	AveID		1.0109				3.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3787 1.0411	1.1774 1.1082	1.0205	1.0479	1.0872	AveID		1.1230				11.1		35.0			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	7.0906 7.4945	6.9361 7.4829	7.3347	7.6829	7.2987	AveID		7.3315				3.5		50.0			
6:2 FTS	1.9168 2.0403	1.8359 2.0535	1.9744	1.9724	1.9653	AveID		1.9655				3.8		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.0350 1.1369	1.0389 1.1116	1.1007	1.1037	1.1090	AveID		1.0908				3.5		50.0			
Perfluorooctanoic acid (PFOA)	1.3300 0.9552	1.0422 0.9903	0.9441	1.0873	1.0468	AveID		1.0566				12.4		35.0			
Perfluorooctanesulfonic acid (PFOS)	1.0345 1.0164	0.9501 1.0272	0.9413	0.9621	0.9943	AveID		0.9894				3.9		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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 383313

SDG No.: 70132491

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorononanoic acid (PFNA)	1.0070 0.9970	0.9689 1.1717	0.9062	1.0041	1.0445	AveID		1.0142				8.0		35.0			
F-53B Major	2.5643 2.8578	2.4781 2.9156	2.6470	2.8157	2.8278	AveID		2.7295				6.1		50.0			
Perfluorononanesulfonic acid (PFNS)	0.6926 0.8230	0.8292 0.7965	0.7900	0.8304	0.8292	AveID		0.7987				6.2		50.0			
Perfluorooctanesulfonamide (FOSA)	0.8734 0.9115	0.8529 0.9151	0.8451	0.8620	0.8884	AveID		0.8783				3.2		35.0			
Perfluorodecanoic acid (PFDA)	0.9806 0.9594	0.9904 0.8981	1.0773	0.9900	0.8646	AveID		0.9658				7.2		35.0			
8:2 FTS	1.5717 1.6585	1.5796 1.6044	1.5858	1.6560	1.7645	AveID		1.6315				4.2		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.6647 0.8178	0.6551 0.8261	0.6973	0.7051	0.7419	AveID		0.7297				9.5		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.7146 0.7106	0.6635 0.7028	0.6740	0.7185	0.7222	AveID		0.7009				3.3		50.0			
Perfluoroundecanoic acid (PFUnA)	+++++ 0.7407	0.5590 0.7786	0.6999	0.8139	0.7363	AveID		0.7214				12.3		35.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.6911 0.8091	0.6465 0.8067	0.6488	0.6728	0.6718	AveID		0.7067				10.0		35.0			
F-53B Minor	2.3252 2.7430	2.4822 2.7287	2.5151	2.6237	2.6379	AveID		2.5794				5.8		50.0			
NMeFOSE	0.9299 1.2166	1.0272 1.1436	1.0039	1.0896	0.9154	AveID		1.0466				10.6		35.0			
NMeFOSA	0.8625 0.9665	0.8265 0.9400	0.8937	1.0539	1.0480	AveID		0.9416				9.3		35.0			
Perfluorododecanoic acid (PFDoA)	0.9549 1.0627	0.9712 0.9170	0.9189	0.9247	1.1214	AveID		0.9816				8.1		35.0			
10:2 FTS	1.2583 1.3448	1.1866 1.3995	1.1615	1.2581	1.3977	AveID		1.2866				7.5		50.0			
NEtFOSE	0.8493 1.0165	1.0035 1.0726	1.1133	1.0827	1.0283	AveID		1.0238				8.4		35.0			
NEtFOSA	0.8404 0.9794	0.9305 0.9951	1.0494	1.1064	1.1130	AveID		1.0020				9.7		35.0			
Perfluorododecanesulfonic acid (PFDoS)	0.2128 0.2682	0.2151 0.2627	0.2292	0.2549	0.2614	AveID		0.2435				9.7		50.0			
Perfluorotridecanoic acid (PFTriA)	0.9632 0.8869	0.6535 0.7192	0.7268	0.7200	0.8540	AveID		0.7891				14.3		50.0			
Perfluorotetradecanoic acid (PFTeA)	1.0766 0.8658	0.9453 0.9086	0.9730	1.2321	0.9990	AveID		1.0001				12.2		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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 383313

SDG No.: 70132491

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.6718 0.8308	1.1889 +++++	0.9296	1.0061	0.7831	L2ID	0.0198	0.8516							0.9900		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.5144 0.4468	0.4255 0.5655	0.4712	0.5788	0.4418	AveID		0.4920				12.5		50.0			
13C4 PFBA	1.5056 1.6894	1.5938 1.6858	1.5660	1.4987	1.5412	Ave		1.5829				5.0		50.0			
13C5 PFPeA	1.3557 1.4858	1.4665 1.4473	1.3736	1.3803	1.3893	Ave		1.4141				3.6		50.0			
13C3 PFBS	0.9649 1.0732	0.9689 1.0039	0.9498	0.9474	0.9543	Ave		0.9803				4.6		50.0			
M2-4:2 FTS	0.1242 0.1431	0.1327 0.1361	0.1301	0.1248	0.1223	Ave		0.1305				5.7		50.0			
13C2 PFHxA	1.2966 1.4269	1.3915 1.4278	1.3796	1.3376	1.3580	Ave		1.3740				3.5		50.0			
13C3 HFPO-DA	0.2995 0.3418	0.3170 0.3328	0.3136	0.2895	0.3073	Ave		0.3145				5.8		50.0			
13C4 PFHpA	1.0774 1.1133	1.1345 1.1553	1.0411	1.0519	1.0565	Ave		1.0900				4.1		50.0			
18O2 PFHxS	0.4489 0.5074	0.4721 0.4897	0.4643	0.4594	0.4587	Ave		0.4715				4.3		50.0			
M2-6:2 FTS	0.1445 0.1436	0.1541 0.1354	0.1485	0.1431	0.1388	Ave		0.1440				4.3		50.0			
13C4 PFOA	1.0019 0.9950	0.9939 0.9564	1.0065	0.9619	0.9837	Ave		0.9856				2.0		50.0			
13C4 PFOS	0.3468 0.3964	0.3616 0.3861	0.3553	0.3507	0.3647	Ave		0.3660				5.1		50.0			
13C5 PFNA	0.7726 0.8019	0.7550 0.6887	0.7825	0.7655	0.7144	Ave		0.7544				5.3		50.0			
13C8 FOSA	0.7152 0.7610	0.7534 0.6990	0.7291	0.7260	0.7110	Ave		0.7278				3.1		50.0			
13C2 PFDA	0.6921 0.7541	0.7120 0.6605	0.6957	0.7407	0.7790	Ave		0.7192				5.7		50.0			
M2-8:2 FTS	0.1723 0.1787	0.1872 0.1603	0.1786	0.1693	0.1552	Ave		0.1717				6.5		50.0			
d3-NMeFOSAA	0.2596 0.2856	0.2646 0.2946	0.2555	0.2590	0.2603	Ave		0.2685				5.7		50.0			
13C2 PFUnA	0.6198 0.6266	0.6602 0.5575	0.6278	0.6073	0.5931	Ave		0.6132				5.2		50.0			
d5-NEtFOSAA	0.2669 0.2825	0.2854 0.2747	0.2729	0.2614	0.2695	Ave		0.2733				3.1		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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 383313

SDG No.: 70132491

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
d7-N-MeFOSE-M	0.1789 0.1744	0.1839 0.1942	0.1785	0.1864	0.1870	Ave		0.1833				3.6		50.0			
d-N-MeFOSA-M	0.2071 0.2676	0.2203 0.2676	0.2128	0.2114	0.2231	Ave		0.2300				11.4		50.0			
13C2 PFDoA	0.5299 0.5251	0.5770 0.5287	0.5628	0.5885	0.4906	Ave		0.5432				6.3		50.0			
d9-N-EtFOSE-M	0.2246 0.2470	0.2188 0.2507	0.1994	0.2137	0.2177	Ave		0.2246				8.2		50.0			
d-N-EtFOSA-M	0.2089 0.2722	0.2257 0.2713	0.2137	0.2130	0.2292	Ave		0.2334				11.6		50.0			
13C2 PFTeDA	0.3193 0.4061	0.3482 0.3870	0.3702	0.3099	0.3450	Ave		0.3551				9.8		50.0			
13C2 PFHxDA	0.2952 0.3274	0.3293 0.2561	0.2776	0.2429	0.3323	Ave		0.2944				12.5		50.0			
13C8 PFOA	0.6239 0.6266	0.6190 0.6105	0.6248	0.5361	0.5939	Ave		0.6050				5.4		50.0			
13C8 PFOS	0.1212 0.1367	0.1254 0.1252	0.1206	0.1166	0.1255	Ave		0.1244				5.1		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
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 383313

SDG No.: 70132491

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-383313/2	2020.06.04_A15_PFC_ICAL_A_004.d
Level 2	IC 320-383313/3	2020.06.04_A15_PFC_ICAL_A_005.d
Level 3	IC 320-383313/4	2020.06.04_A15_PFC_ICAL_A_006.d
Level 4	IC 320-383313/5	2020.06.04_A15_PFC_ICAL_A_007.d
Level 5	IC 320-383313/6	2020.06.04_A15_PFC_ICAL_A_008.d
Level 6	IC 320-383313/7	2020.06.04_A15_PFC_ICAL_A_009.d
Level 7	IC 320-383313/8	2020.06.04_A15_PFC_ICAL_A_010.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid		AveID	84034 17523720	162849 34571646	843031	3470137	8607524	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	103688 15678192	176111 29781182	792080	3218181	7792020	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	51611 10524971	95864 18781556	476364	1950584	4878139	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	15810 3421017	30594 6380089	153907	665002	1563862	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	86092 14187904	152223 27188259	777330	2966517	7282094	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	39024 8202928	73997 15215091	395420	1588606	4032245	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	16050 3377071	30986 6739451	168499	689188	1748448	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid		AveID	64911 12066452	134247 23968023	640244	2719950	6482928	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	36094 5172852	59028 10374885	260169	1068371	2657927	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)		AveID	148456 30115737	275714 57185309	1480984	6190367	14689211	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	16828 2989847	31305 5537814	167725	652691	1514283	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	21900 4617036	41734 8584960	224605	898706	2255726	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanoic acid (PFOA)		AveID	85389 10227799	120876 19898971	573324	2550630	6031818	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	21338 4023416	37206 7733680	187236	763648	1971399	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	49862 8604297	85362 16953333	427845	1874281	4370924	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 383313

SDG No.: 70132491

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
F-53B Major		AveID	53119 11361857	97462 22044857	528793	2244602	5630815	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorononanesulfonic acid (PFNS)		AveID	14777 3370318	33593 6203149	162570	681848	1700810	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorooctanesulfonamide (FOSA)		AveID	40033 7465140	74988 13439661	371735	1526209	3700238	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanoic acid (PFDA)		AveID	43490 7786365	82296 12463138	452204	1788273	3945087	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	16627 3056319	33061 5175859	163721	654827	1536987	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	11058 2513798	20230 5113067	107484	445393	1131231	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	15310 2922028	26992 5496367	139279	592449	1487380	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluoroundecanoic acid (PFUnA)		AveID	+++++ 4994985	43073 9119579	265127	1205393	2558072	+++++ 5.00	0.0500 10.0	0.250	1.00	2.50
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	11820 2459976	21533 4655395	106821	428790	1060515	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	48683 11022366	98667 20853238	507842	2113979	5308994	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
NMeFOSE		AveID	10662 2283757	22047 4664590	108107	495182	1002590	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NMeFOSA		AveID	11445 2783078	21251 5283834	114727	543254	1369719	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)		AveID	32430 6005489	65400 10185088	312046	1327041	3222984	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	13395 2493812	24991 4543056	120671	500599	1225099	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
NEtFOSE		AveID	12226 2702114	25624 5649039	133940	564377	1311216	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NEtFOSA		AveID	11250 2868640	24512 5671182	135323	574700	1494414	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanesulfonic acid (PFDoS)		AveID	4578 1107494	8788 2062682	47563	211017	540600	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	32713 5012084	44007 7988248	246788	1033363	2454288	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	22029 3783988	38411 7387808	217351	931047	2018998	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	31624 2927071	45682 +++++	155680	595962	1524467	0.0250 5.00	0.0500 +++++	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	9731 1574210	16349 3042541	78914	342848	859961	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 383313

SDG No.: 70132491

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFBA	13PF OA	Ave	9648681 9090663	9299542 8854156	9448270	9136872	9027703	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	8688019 7995197	8556695 7601881	8287569	8414937	8137666	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	5750434 5370688	5257827 4903914	5329078	5371544	5198591	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	743608 718991	722978 667497	732852	710696	669176	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PF OA	Ave	8309413 7678162	8119512 7499391	8323323	8154944	7954661	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	1919188 1839459	1849556 1747744	1892293	1765106	1799762	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	6904259 5990467	6619945 6067869	6280993	6413151	6188566	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	2721638 2582641	2605903 2433067	2650257	2649716	2541523	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	879787 734246	854355 675627	851271	829038	772132	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	6420434 5354025	5799255 5023412	6072440	5864633	5761918	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	2124805 2039057	2017066 1938926	2049165	2044276	2042488	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	4951399 4315211	4405249 3617340	4721149	4666713	4184898	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	4583532 4095028	4396116 3671593	4398715	4426342	4164895	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	4435130 4057879	4154723 3469185	4197427	4515884	4562785	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	1057870 921429	1046506 806507	1032421	988595	871076	2.40 2.40	2.40 2.40	2.40	2.40	2.40
d3-NMeFOSAA	13PF OA	Ave	1663604 1536928	1544095 1547401	1541416	1579238	1524709	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	3972161 3371659	3852340 2928045	3787817	3702710	3474271	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1710239 1520185	1665421 1442788	1646406	1593419	1578577	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d7-N-MeFOSE-M	13PF OA	Ave	5733079 4693030	5365729 5098711	5384514	5680746	5476298	12.5 12.5	12.5 12.5	12.5	12.5	12.5
d-N-MeFOSA-M	13PF OA	Ave	1327001 1439720	1285651 1405336	1283749	1288669	1307025	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	3396149 2825569	3366889 2776822	3395718	3587872	2873956	2.50 2.50	2.50 2.50	2.50	2.50	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 383313

SDG No.: 70132491

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
d9-N-EtFOSE-M	13PF OA	Ave	7197559 6645712	6383659 6583228	6015322	6515560	6375503	12.5 12.5	12.5 12.5	12.5	12.5	12.5
d-N-EtFOSA-M	13PF OA	Ave	1338610 1464448	1317134 1424762	1289555	1298529	1342737	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	2046106 2185293	2031772 2032789	2233755	1889089	2021036	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	1891570 1761696	1921227 1345151	1674702	1480897	1946691	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOA	13PF OA	Ave	3914452 3300754	3536219 3139164	3690520	3199649	3405935	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C8 PFOS	13PF OA	Ave	742567 703067	699275 628417	695576	679528	702645	2.39 2.39	2.39 2.39	2.39	2.39	2.39

Curve Type Legend:

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

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 04-Jun-2020 11:56:53 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 1 (21)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:05 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 12:26:16
Ratio Calibration: Average of Initial Calibration

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	2.552	2.549	0.003	0.629	9648681	2.38		95.1	20607	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.552	2.551	0.001	1.000	84034	0.0235		94.1	22.4	
D 4 13C5 PFPeA										
267.90 > 223.00	2.903	2.895	0.008	0.716	8688019	2.40		95.9	17247	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.903	2.898	0.005	1.000	103688	0.0296		118	8.1	M
D 9 13C3 PFBS										
301.90 > 80.00	2.934	2.930	0.004	0.723	5750434	2.29		98.4	16170	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.934	2.930	0.004	1.000	51611	0.0214	Target=2.14	96.9	26.6	
298.90 > 99.00	2.934	2.930	0.004	1.000	24292		2.12(1.07-3.21)	96.9	17.1	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.228	3.226	0.002	0.796	743608	2.22		95.2	1657	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.228	3.227	0.001	1.000	15810	0.0220		94.3	444	
D 11 13C2 PFHxA										
315.00 > 270.00	3.276	3.267	0.009	0.808	8309413	2.36		94.4	14961	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.276	3.267	0.009	1.000	86092	0.0276	Target=15.73	111	42.2	
313.00 > 119.00	3.276	3.267	0.009	1.000	4904		17.56(7.86-23.59)	111	12.8	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.286	3.285	0.001	1.120	39024	0.0215	Target=2.69	91.7	287	
349.00 > 99.00	3.286	3.285	0.001	1.120	13293		2.94(1.35-4.04)	91.7	76.4	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.392	3.386	0.006	0.836	1919188	2.38		95.2	7863	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.392	3.386	0.006	1.000	16050	0.0229		91.6	318	
D 18 13C4 PFHpA										
367.00 > 322.00	3.667	3.661	0.006	0.904	6904259	2.47		98.8	15097	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.667	3.662	0.005	1.000	64911	0.0233	Target=3.80	93.0	25.4	
363.00 > 169.00	3.667	3.662	0.005	1.000	18763		3.46(1.90-5.71)	93.0	87.2	
D 17 18O2 PFHxS										
403.00 > 84.00	3.667	3.667	0.0	0.904	2721638	2.25		95.2	6937	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.677	3.670	0.007	1.003	36094	0.0279	Target=2.99	123	298	M
399.00 > 99.00	3.677	3.670	0.007	1.003	10219		3.53(1.50-4.49)	123	31.8	M
19 DONA										
377.00 > 251.00	3.716	3.709	0.007	0.844	148456	0.0228	Target=2.14	96.7	571	
377.00 > 85.00	3.716	3.709	0.007	0.844	66658		2.23(1.07-3.21)	96.7	254	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.031	4.030	0.001	0.994	879787	2.38		100	4456	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.031	4.032	-0.001	1.000	16828	0.0231		97.5	208	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.048	4.046	0.002	0.919	21900	0.0226	Target=3.77	94.9	329	
449.00 > 99.00	4.048	4.046	0.002	0.919	5570		3.93(1.89-5.66)	94.9	51.7	
$ 26 13C8 PFOA										
421.00 > 376.00	4.048	4.046	0.002	0.998	3914452	2.52		103	12719	
D 25 13C4 PFOA										
417.00 > 372.00	4.056	4.051	0.005	1.000	6420434	2.54		102	16054	
* 23 13C2 PFOA										
415.00 > 370.00	4.056	4.051	0.005		6408477	2.50			14141	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.056	4.052	0.004	1.000	85389	0.0315	Target=2.88	126	6.3	M
413.00 > 169.00	4.056	4.052	0.004	1.000	25450		3.36(1.44-4.31)	126	98.4	M
$ 28 13C8 PFOS										
507.00 > 99.00	4.404	4.400	0.004	1.086	742567	2.33		97.4	5123	
D 27 13C4 PFOS										
503.00 > 80.00	4.404	4.402	0.002	1.086	2124805	2.27		94.8	7192	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.404	4.403	0.001	1.000	21338	0.0243	Target=4.89	105	123	
499.00 > 99.00	4.404	4.403	0.001	1.000	4776		4.47(2.44-7.33)	105	33.7	M
31 Perfluorononanoic acid										
463.00 > 419.00	4.420	4.417	0.003	1.000	49862	0.0248	Target=7.00	99.3	8.7	
463.00 > 169.00	4.420	4.417	0.003	1.000	6140		8.12(3.50-10.51)	99.3	32.3	
D 30 13C5 PFNA										
468.00 > 423.00	4.420	4.417	0.003	1.090	4951399	2.56		102	11348	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.598	4.592	0.006	1.044	53119	0.0219		93.9	300	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.736	4.732	0.004	1.075	14777	0.0208	Target=2.77	86.7	38.9	
549.00 > 99.00	4.736	4.732	0.004	1.075	6064		2.44(1.38-4.15)	86.7	87.4	
D 33 13C8 FOSA										
506.00 > 78.00	4.751	4.747	0.004	1.171	4583532	2.46		98.3	7891	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.751	4.749	0.002	1.000	40033	0.0249		99.4	336	
37 Perfluorodecanoic acid										M
513.00 > 469.00	4.751	4.752	-0.001	1.000	43490	0.0254	Target=10.36	102	13.4	M
513.00 > 169.00	4.751	4.752	-0.001	1.000	4761		9.13(5.18-15.54)	102	47.1	
D 39 13C2 PFDA										
515.00 > 470.00	4.751	4.754	-0.003	1.171	4435130	2.41		96.2	10146	
36 1H,1H,2H,2H-perfluorodecanesulfo										M
527.00 > 507.00	4.759	4.755	0.004	1.000	16627	0.0231		96.3	147	M
D 38 M2-8:2 FTS										
529.00 > 81.00	4.759	4.755	0.004	1.173	1057870	2.40		100	4957	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.915	4.912	0.003	1.212	1663604	2.42		96.7	2242	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.915	4.915	0.0	1.000	11058	0.0228		91.1	14.8	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.038	5.037	0.001	1.144	15310	0.0246	Target=2.97	102	96.0	
599.00 > 99.00	5.038	5.037	0.001	1.144	4366		3.51(1.49-4.46)	102	50.6	
45 Perfluoroundecanoic acid										M
563.00 > 519.00	5.065	5.060	0.005	1.000	20441	0.0178	Target=7.56	71.3	13.1	M
563.00 > 169.00	5.056	5.060	-0.004	0.998	3958		5.16(3.78-11.34)	71.3	47.3	M
D 43 13C2 PFUnA										
565.00 > 520.00	5.065	5.062	0.003	1.249	3972161	2.53		101	14429	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.074	5.071	0.003	1.251	1710239	2.44		97.6	2464	
46 N-ethylperfluorooctanesulfonamid										M
584.00 > 419.00	5.074	5.075	-0.001	1.000	11820	0.0244		97.8	34.9	M
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.192	5.191	0.001	1.179	48683	0.0212		90.1	292	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.201	5.198	0.003	1.282	5733079	12.2		97.6	4421	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.209	5.209	0.0	1.002	10662	0.0222		88.8	29.6	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.218	5.215	0.003	1.287	1327001	2.25		90.0	239	
50 NMeFOSA										M
512.00 > 169.00	5.218	5.220	-0.002	1.000	11445	0.0229		91.6	123	M
57 Perfluorododecanoic acid										M
613.00 > 569.00	5.339	5.338	0.001	1.000	32430	0.0243	Target=7.18	97.3	6.2	M
613.00 > 169.00	5.348	5.338	0.010	1.002	5236		6.19(3.59-10.76)	97.3	40.5	
D 56 13C2 PFDoA										
615.00 > 570.00	5.339	5.339	0.0	1.316	3396149	2.44		97.6	8568	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.366	5.362	0.004	1.128	13395	0.0236		97.8	168	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.366	5.364	0.002	1.323	7197559	12.5		100	4997	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.374	5.376	-0.002	1.001	12226	0.0207		83.0	35.4	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.393	5.387	0.006	1.330	1338610	2.24		89.5	678	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.393	5.395	-0.002	1.000	11250	0.0210		83.9	89.9	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.566	5.562	0.004	1.264	4578	0.0212	Target=0.79	87.4	65.6	
699.00 > 99.00	5.566	5.562	0.004	1.264	6603		0.69(0.39-1.18)	87.4	190	
60 Perfluorotridecanoic acid										M
663.00 > 619.00	5.604	5.601	0.003	1.050	32713	0.0305	Target=6.63	122	5.7	M
663.00 > 169.00	5.604	5.601	0.003	1.050	4553		7.18(3.32-9.95)	122	54.0	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.839	5.835	0.004	1.440	2046106	2.25		89.9	9962	
62 Perfluorotetradecanoic acid										M
713.00 > 669.00	5.839	5.838	0.001	1.000	22029	0.0269	Target=8.46	108	6.3	M
713.00 > 219.00	5.830	5.838	-0.008	0.998	2823		7.80(4.23-12.69)	108	96.7	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.254	6.257	-0.003	1.542	1891570	2.51		100	4928	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.263	6.258	0.005	1.001	31624	0.0258	Target=7.92	103	4.2	
813.00 > 169.00	6.263	6.258	0.005	1.001	4041		7.83(3.96-11.88)	103	77.6	
65 Perfluorooctadecanoic acid										M
913.00 > 869.00	6.663	6.655	0.008	1.065	9731	0.0261	Target=10.24	105	1.8	M
913.00 > 169.00	6.656	6.655	0.001	1.064	863		11.28(5.12-15.36)	105	22.7	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00021 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:07 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d

Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15

Lims ID: IC L1 Full

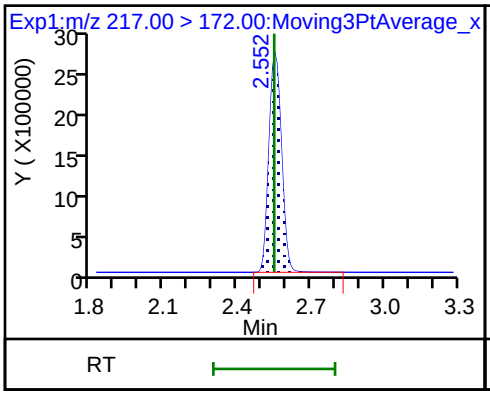
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2

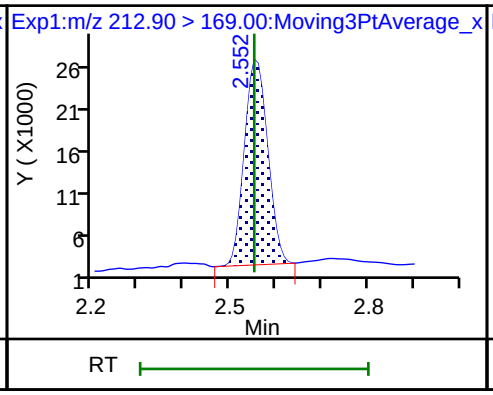
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

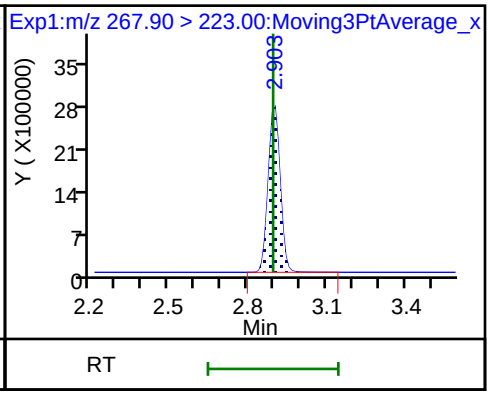
D 1 13C4 PFBA



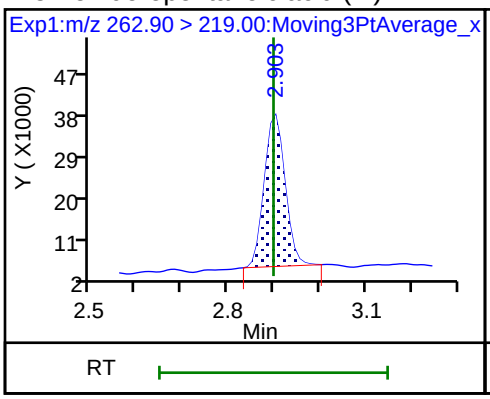
2 Perfluorobutanoic acid



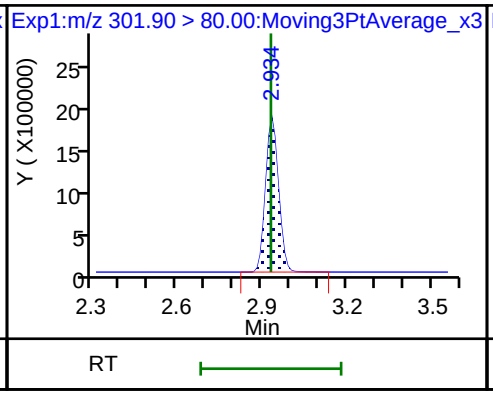
D 4 13C5 PFPeA



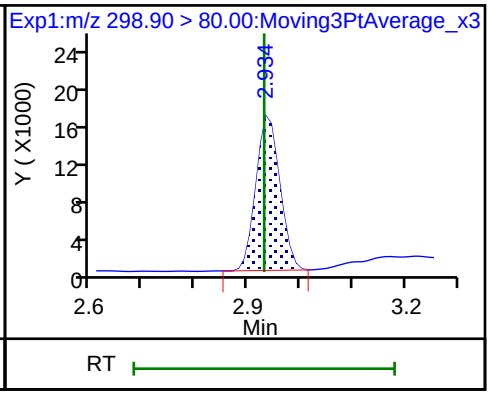
5 Perfluoropentanoic acid (M)



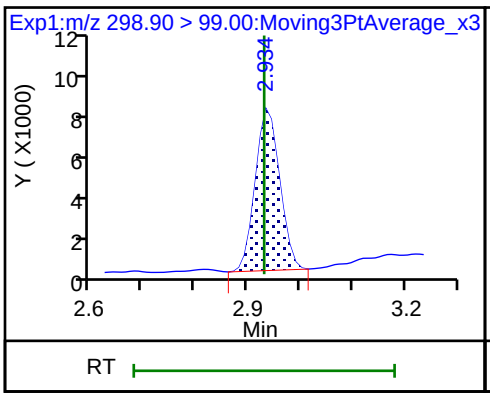
D 9 13C3 PFBS



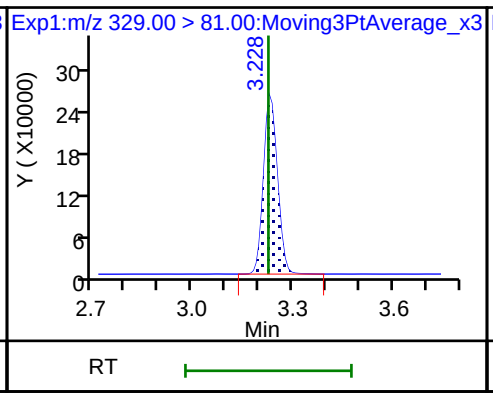
6 Perfluorobutanesulfonic acid



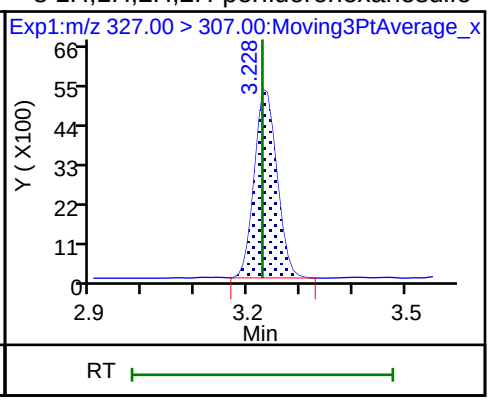
6 Perfluorobutanesulfonic acid



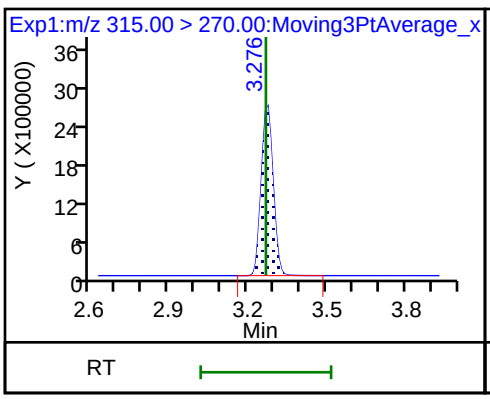
D 7 M2-4:2 FTS



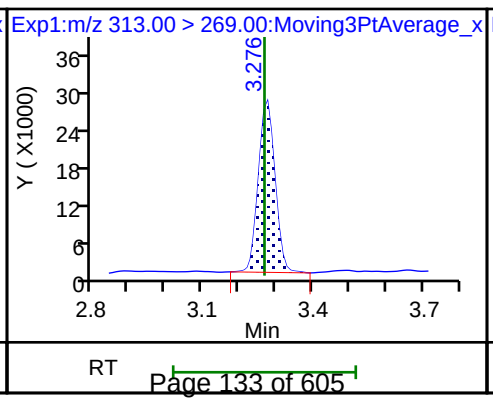
8 1H,1H,2H,2H-perfluorohexanesulfo



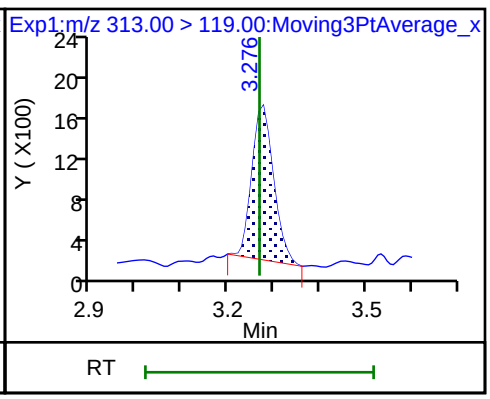
D 11 13C2 PFHxA



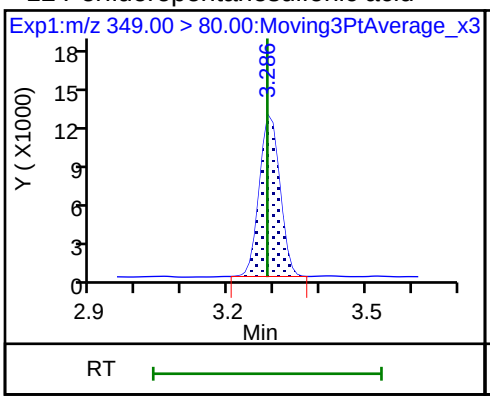
10 Perfluorohexanoic acid



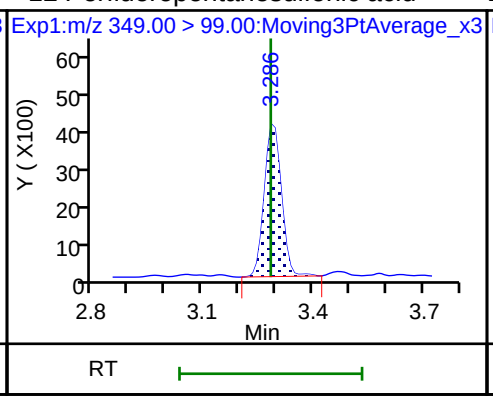
10 Perfluorohexanoic acid



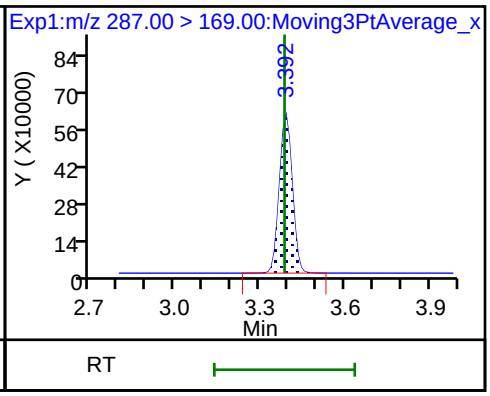
12 Perfluoropentanesulfonic acid



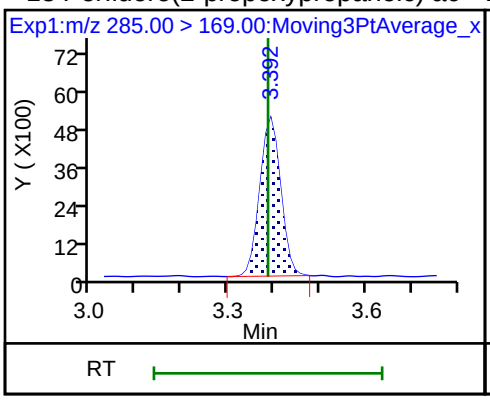
12 Perfluoropentanesulfonic acid



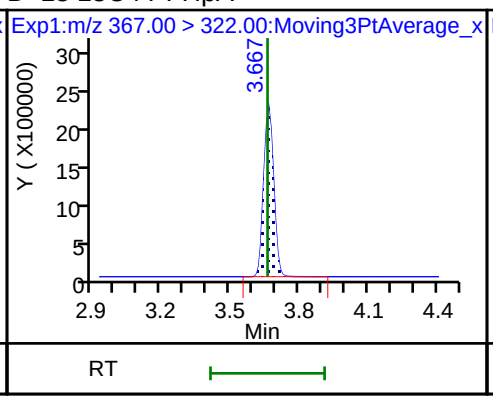
D 14 13C3 HFPO-DA



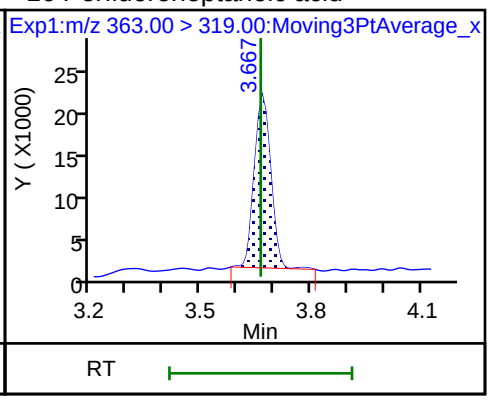
13 Perfluoro(2-propoxypropanoic) ac



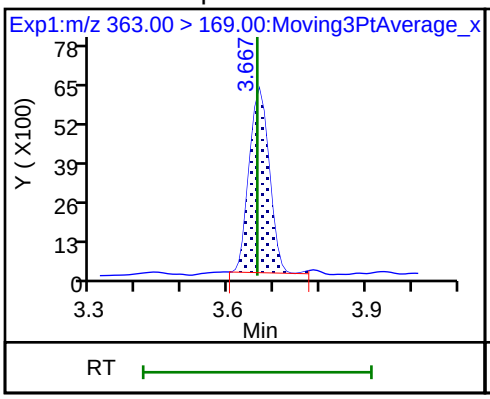
D 18 13C4 PFHpA



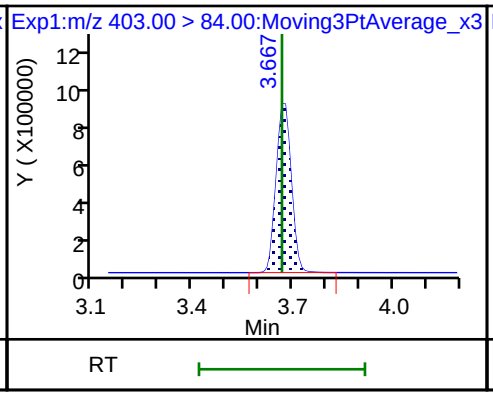
16 Perfluoroheptanoic acid



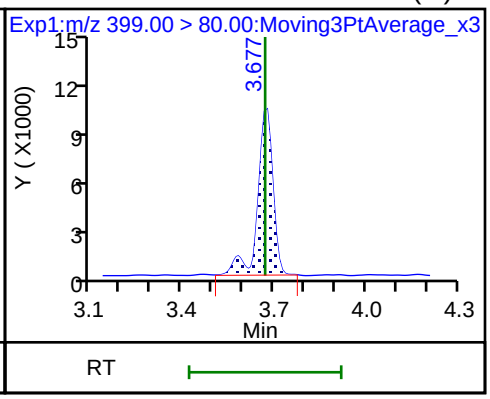
16 Perfluoroheptanoic acid



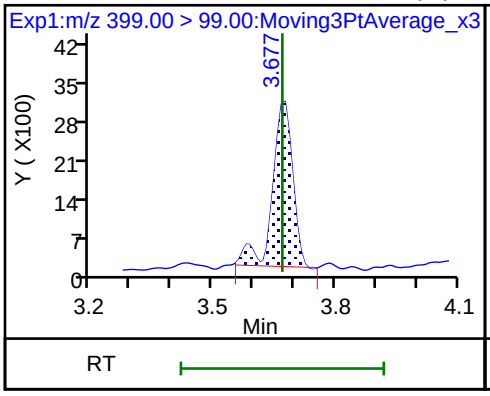
D 17 18O2 PFHxS



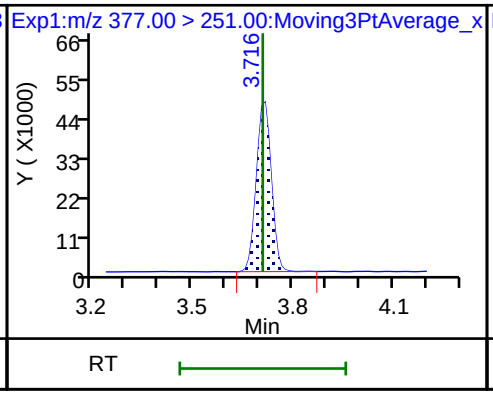
15 Perfluorohexanesulfonic acid (M)



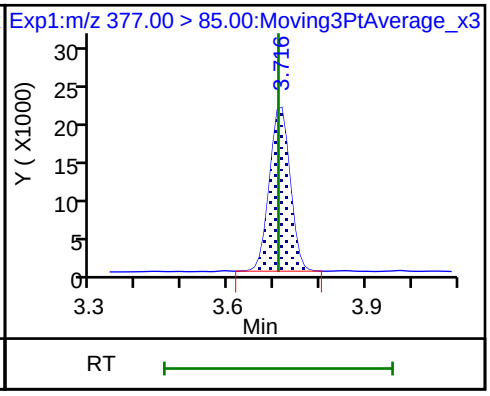
15 Perfluorohexanesulfonic acid (M)



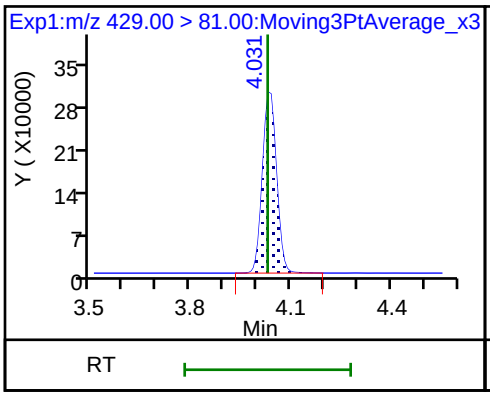
19 DONA



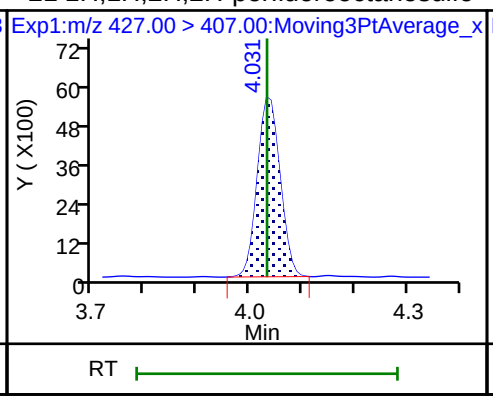
19 DONA



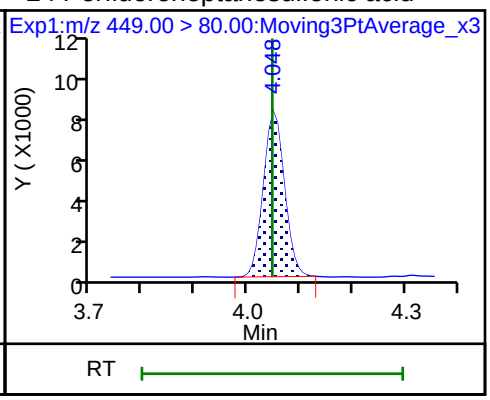
D 20 M2-6:2 FTS



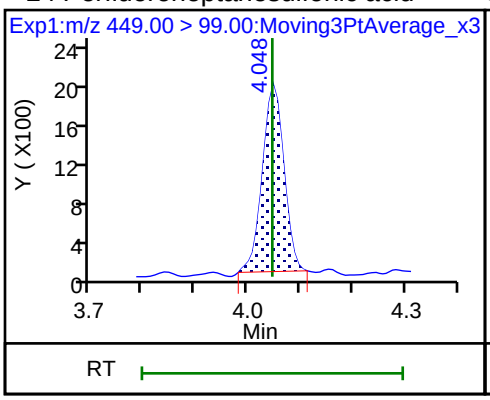
21 1H,1H,2H,2H-perfluorooctanesulfo



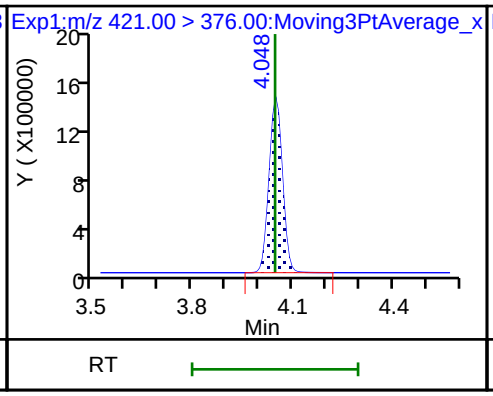
24 Perfluoroheptanesulfonic acid



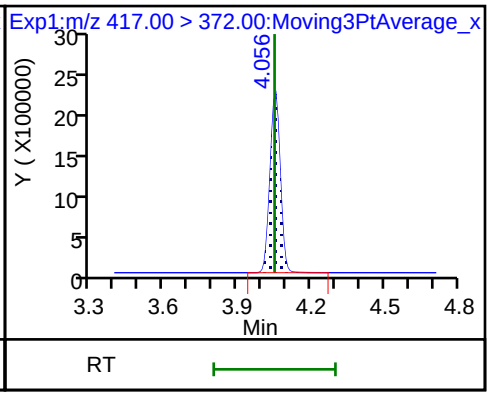
24 Perfluoroheptanesulfonic acid



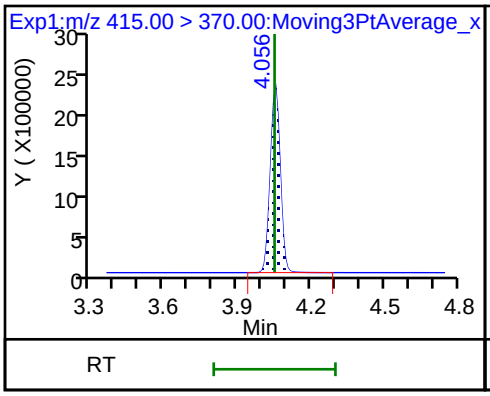
$ 26 13C8 PFOA



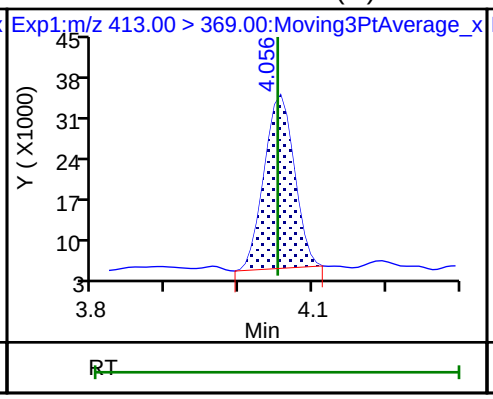
D 25 13C4 PFOA



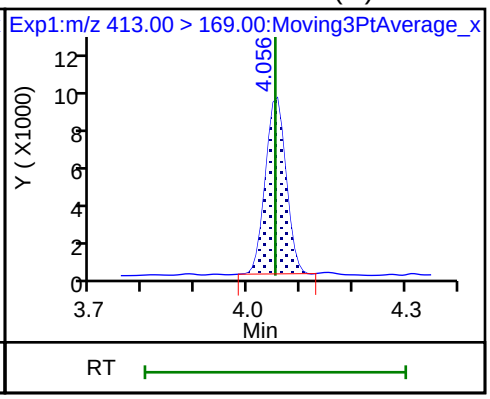
* 23 13C2 PFOA



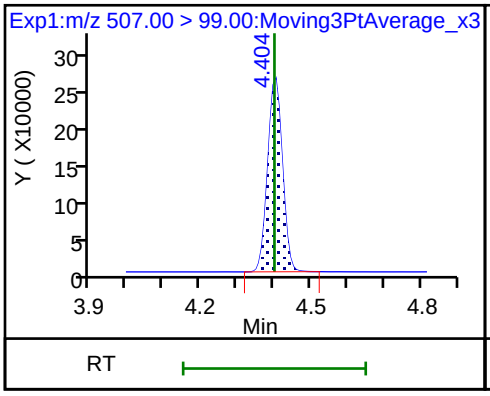
22 Perfluorooctanoic acid (M)



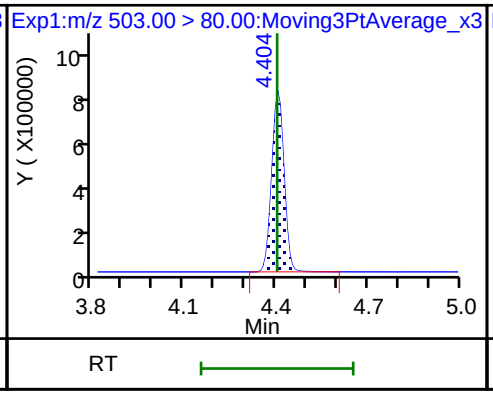
22 Perfluorooctanoic acid (M)



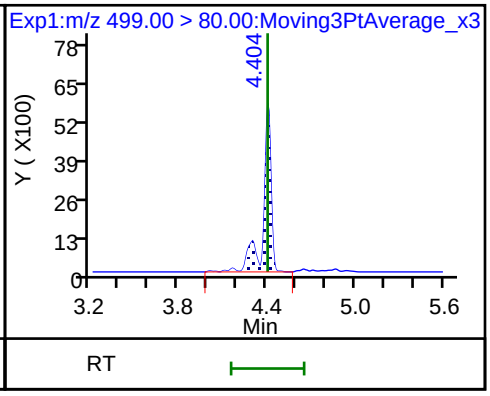
$ 28 13C8 PFOS



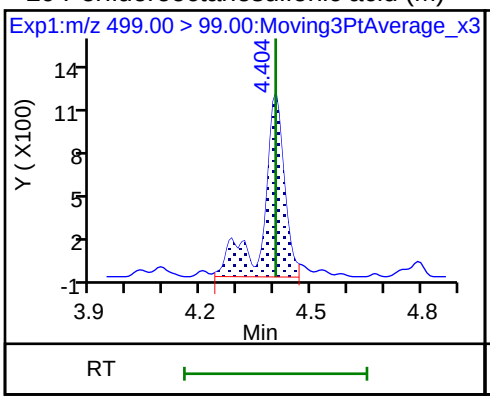
D 27 13C4 PFOS



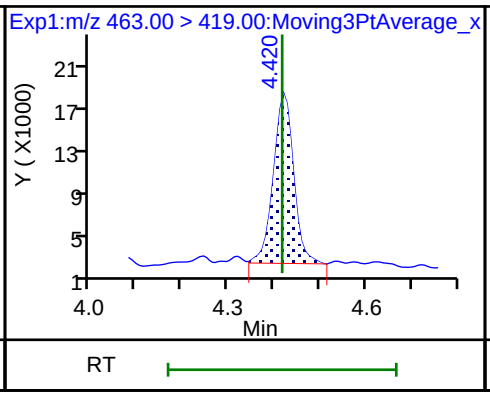
29 Perfluorooctanesulfonic acid



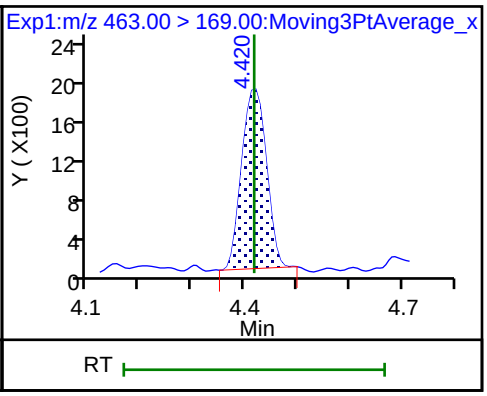
29 Perfluorooctanesulfonic acid (M)



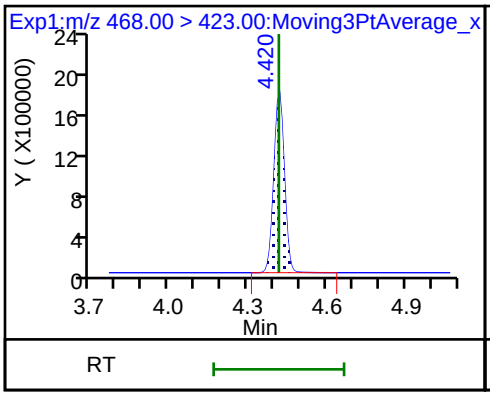
31 Perfluorononanoic acid



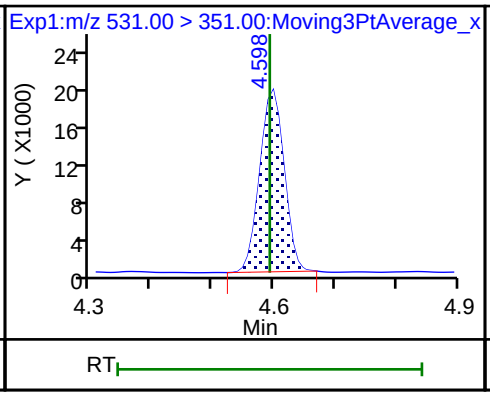
31 Perfluorononanoic acid



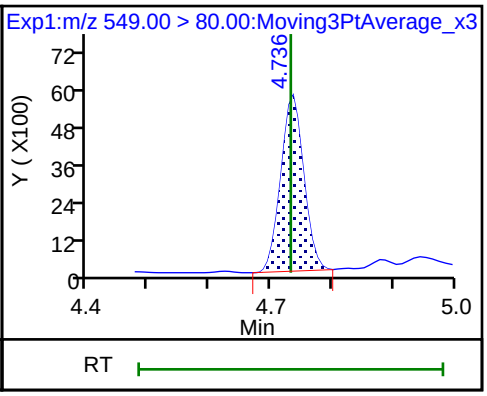
D 30 13C5 PFNA



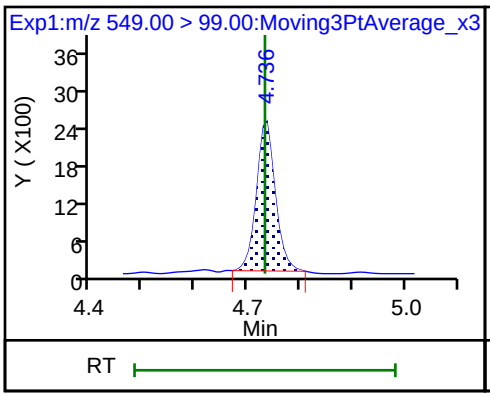
32 9-Chlorohexadecafluoro-3-oxanona



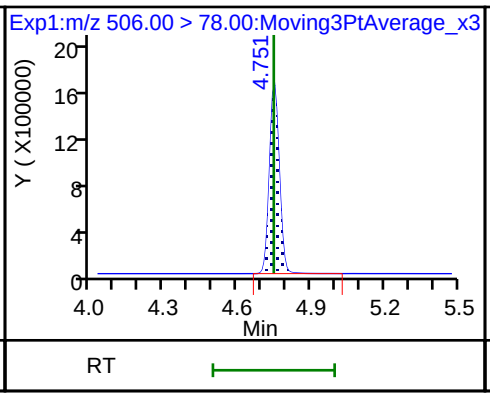
35 Perfluorononanesulfonic acid



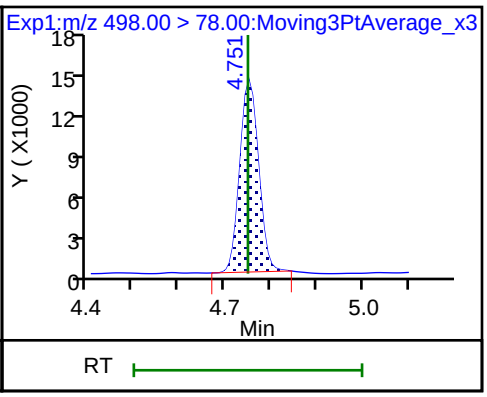
35 Perfluorononanesulfonic acid



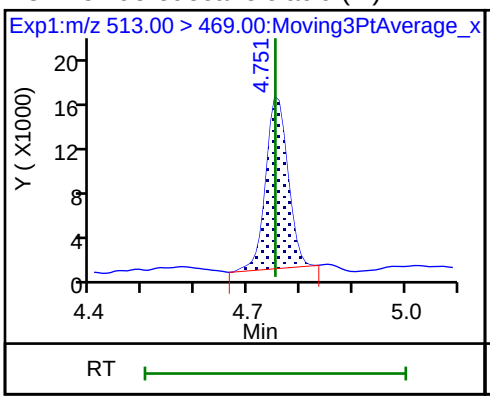
D 33 13C8 FOSA



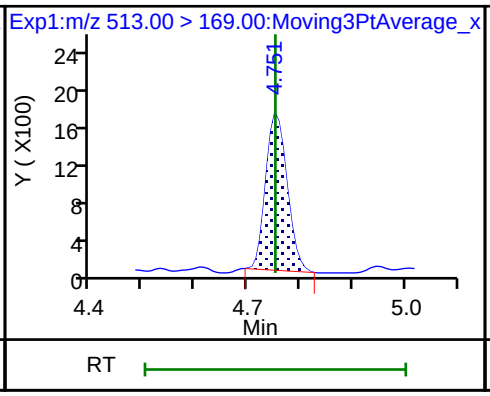
34 Perfluorooctanesulfonamide



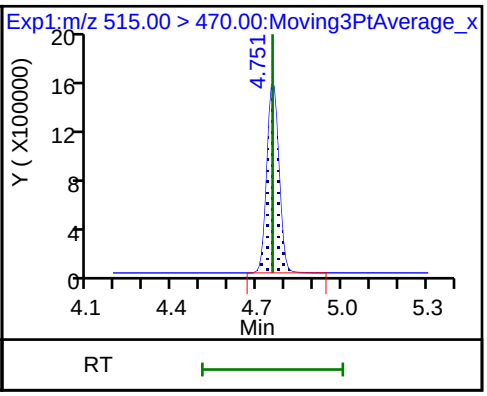
37 Perfluorodecanoic acid (M)



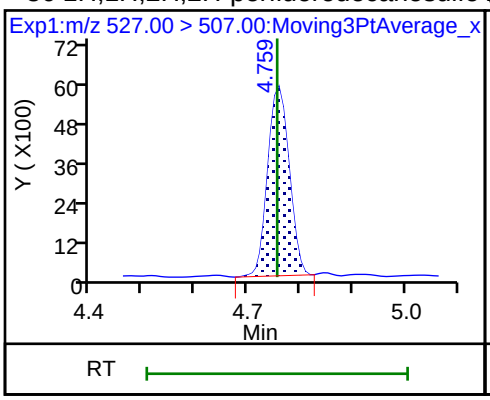
37 Perfluorodecanoic acid



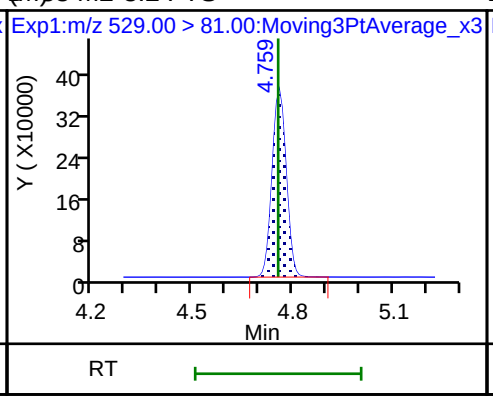
D 39 13C2 PFDA



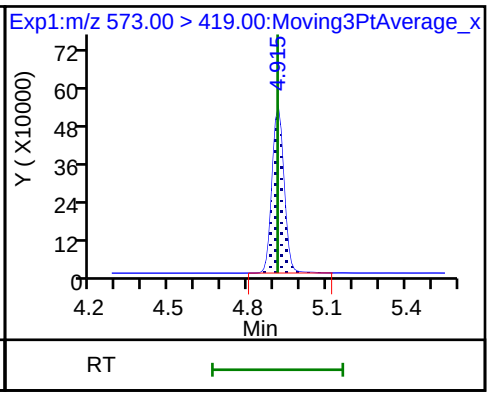
36 1H,1H,2H,2H-perfluorodecanesulfo (M)



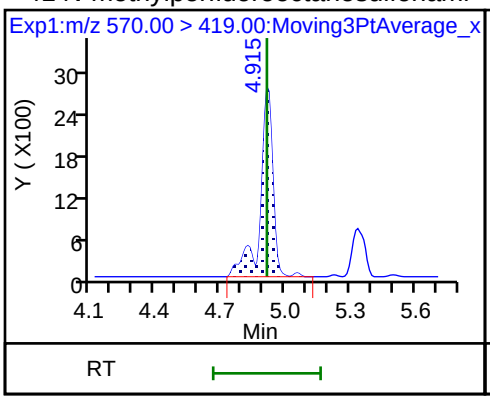
D 38 M2-8:2 FTS



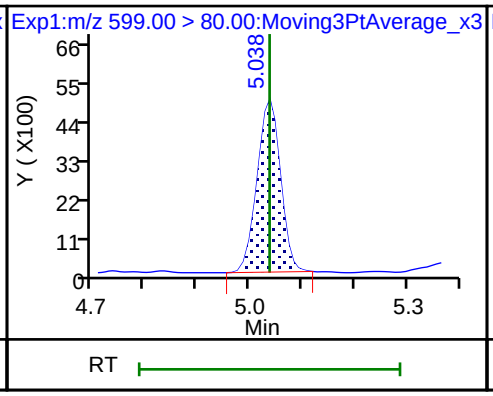
D 40 d3-NMeFOSAA



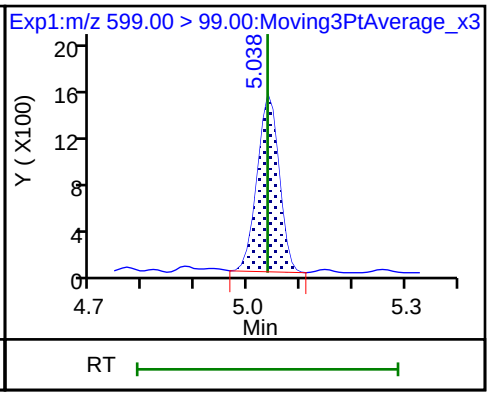
41 N-methylperfluorooctanesulfonami



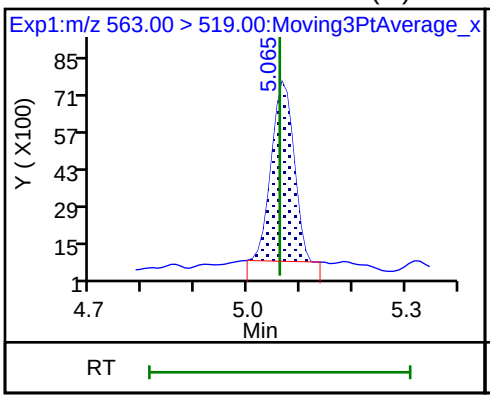
42 Perfluorodecanesulfonic acid



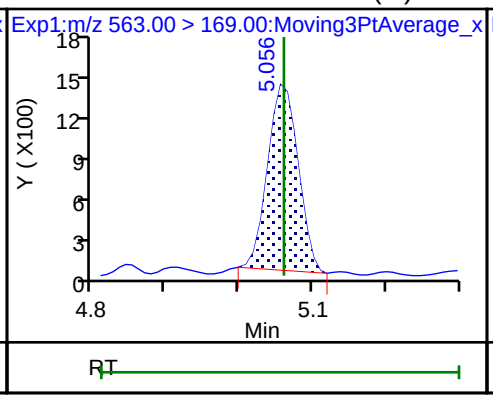
42 Perfluorodecanesulfonic acid



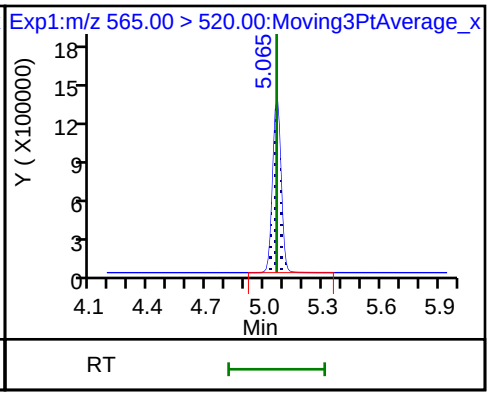
45 Perfluoroundecanoic acid (M)



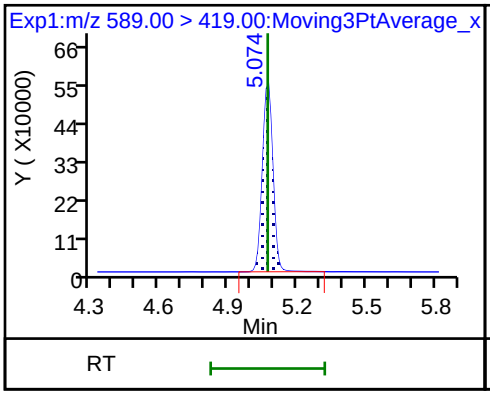
45 Perfluoroundecanoic acid (M)



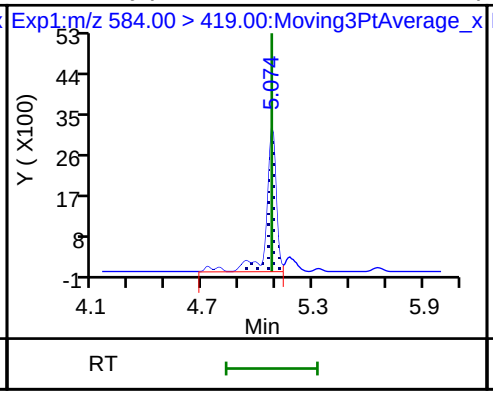
D 43 13C2 PFUnA



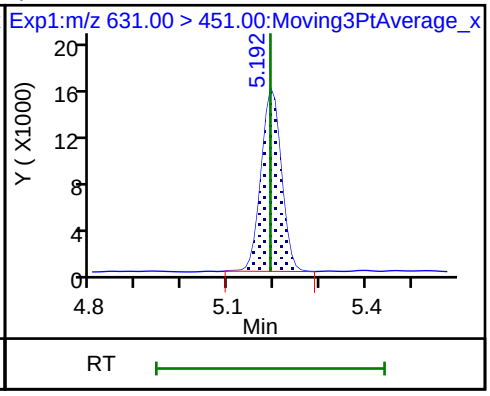
D 44 d5-NEtFOSAA



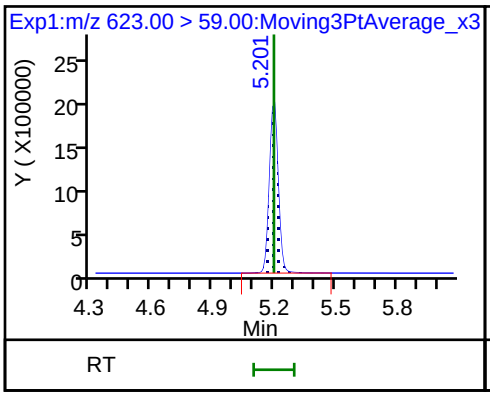
46 N-ethylperfluorooctanesulfonamid (M)



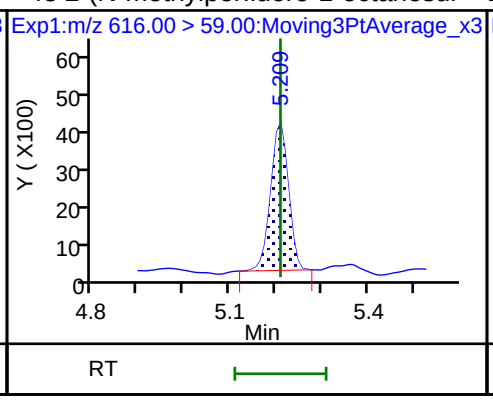
51 11-Chloroeicosafluoro-3-oxaundec



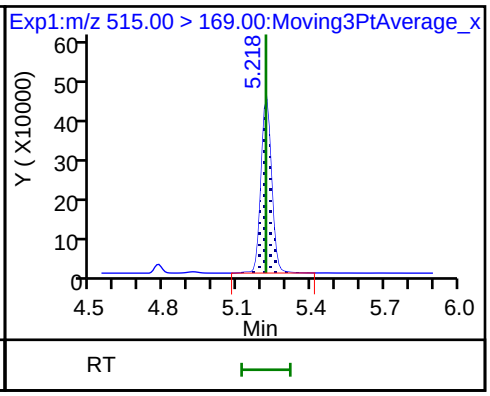
D 47 d7-N-MeFOSE-M



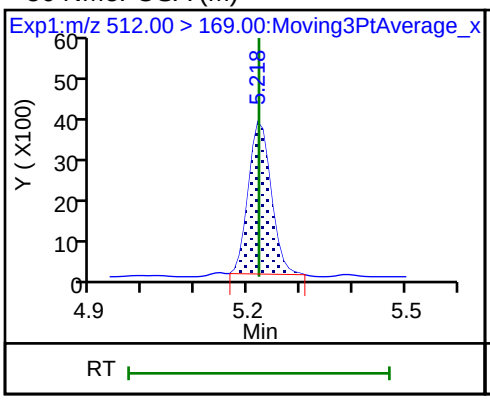
48 2-(N-methylperfluoro-1-octanesul



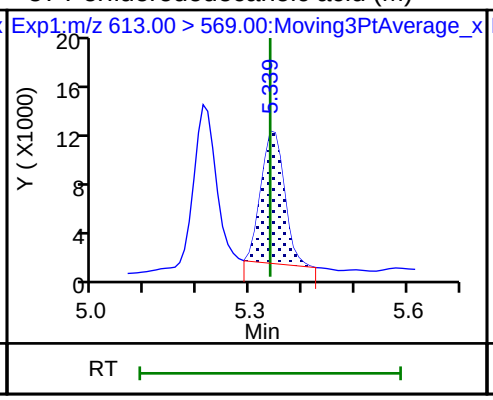
D 49 d-N-MeFOSA-M



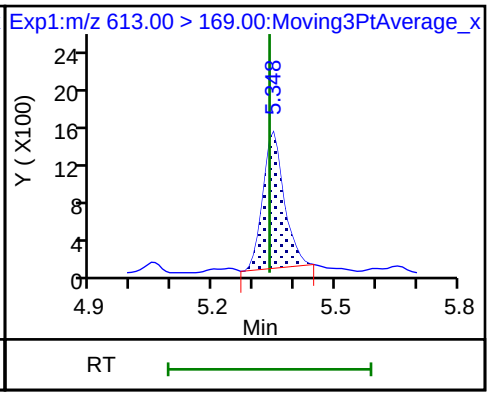
50 NMeFOSA (M)



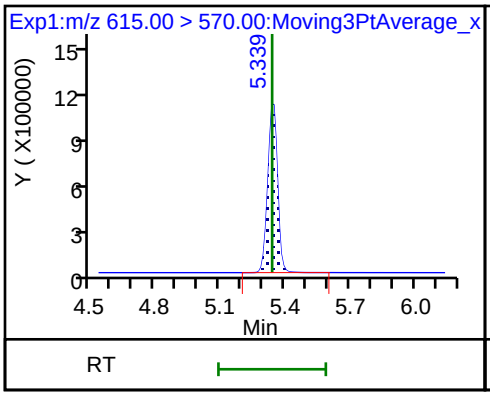
57 Perfluorododecanoic acid (M)



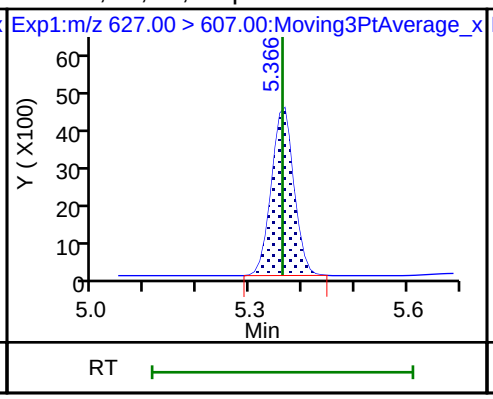
57 Perfluorododecanoic acid



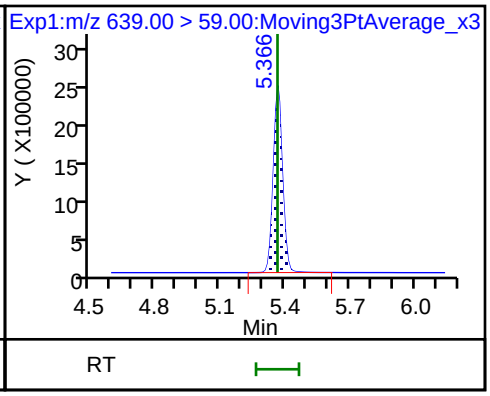
D 56 13C2 PFDoA



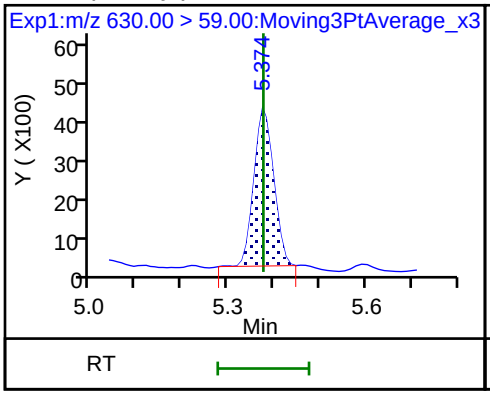
58 1H,1H,2H,2H-perfluorododecanesul



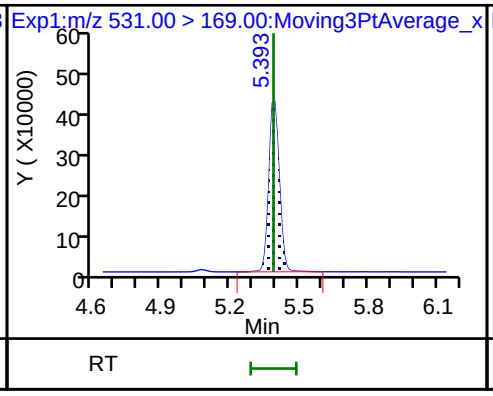
D 52 d9-N-EtFOSE-M



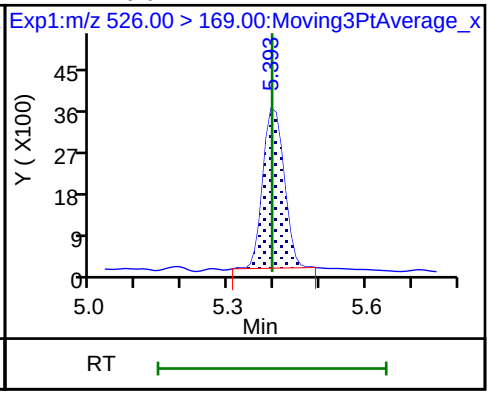
53 2-(N-ethylperfluoro-1-octanesulf



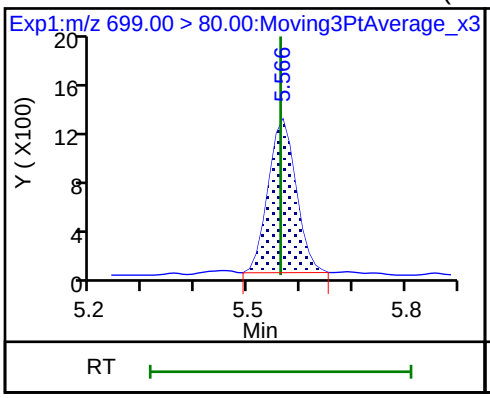
D 54 d-N-EtFOSA-M



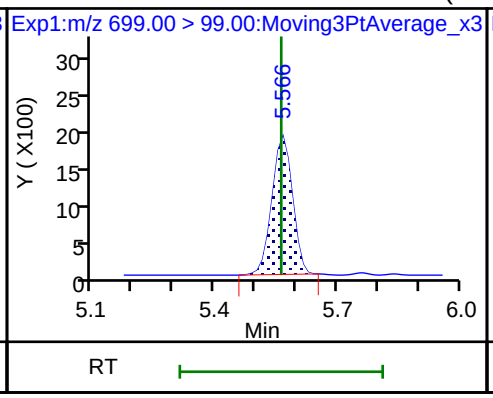
55 N-ethylperfluoro-1-octanesulfona



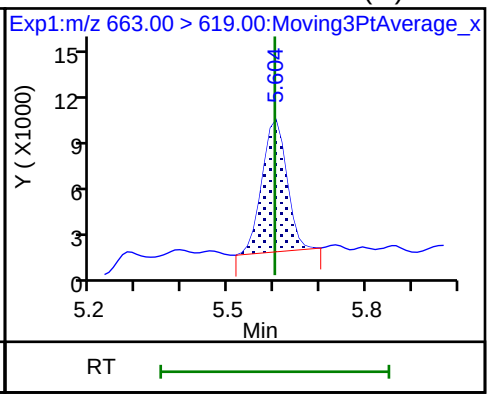
59 Perfluorododecanesulfonic acid (



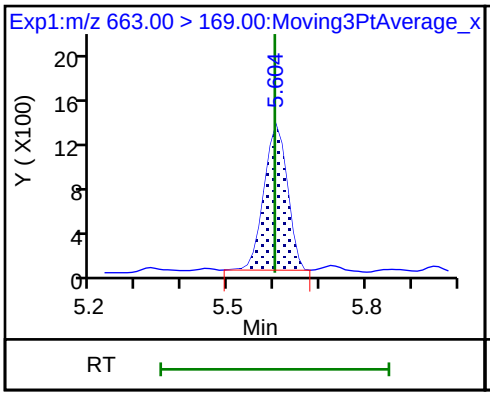
59 Perfluorododecanesulfonic acid (



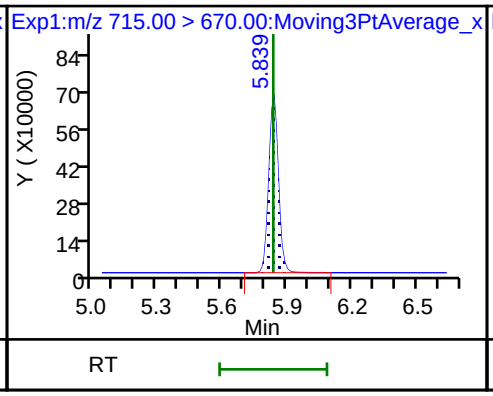
60 Perfluorotridecanoic acid (M)



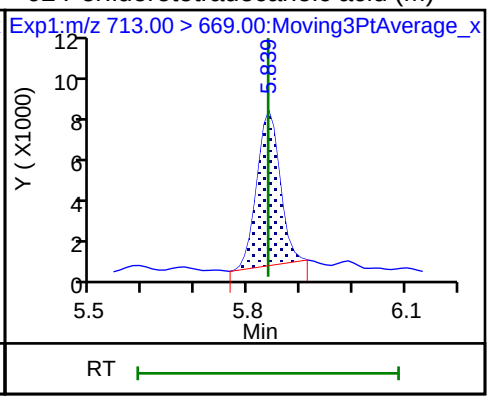
60 Perfluorotridecanoic acid



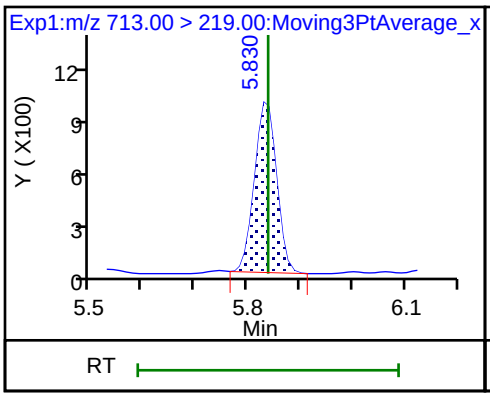
D 61 13C2 PFTeDA



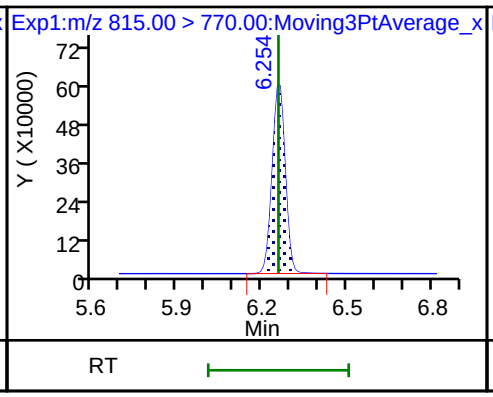
62 Perfluorotetradecanoic acid (M)



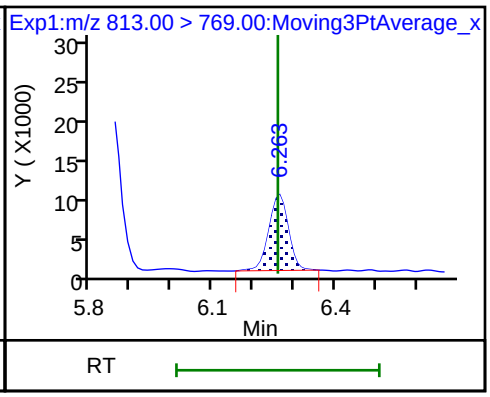
62 Perfluorotetradecanoic acid



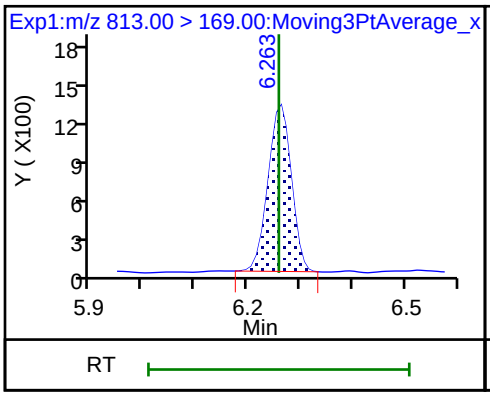
D 64 13C2 PFHxDA



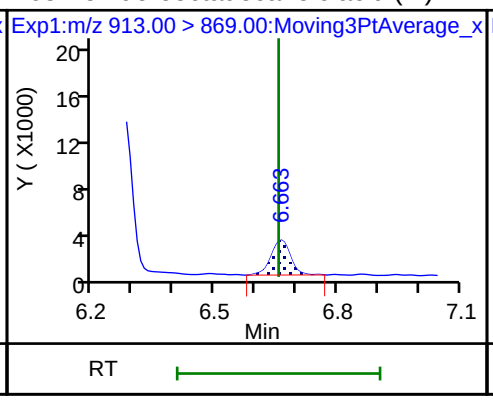
63 Perfluorohexadecanoic acid



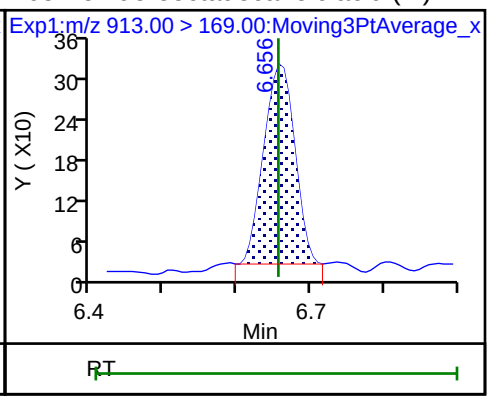
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid (M)



65 Perfluorooctadecanoic acid (M)



Eurofins TestAmerica, Sacramento

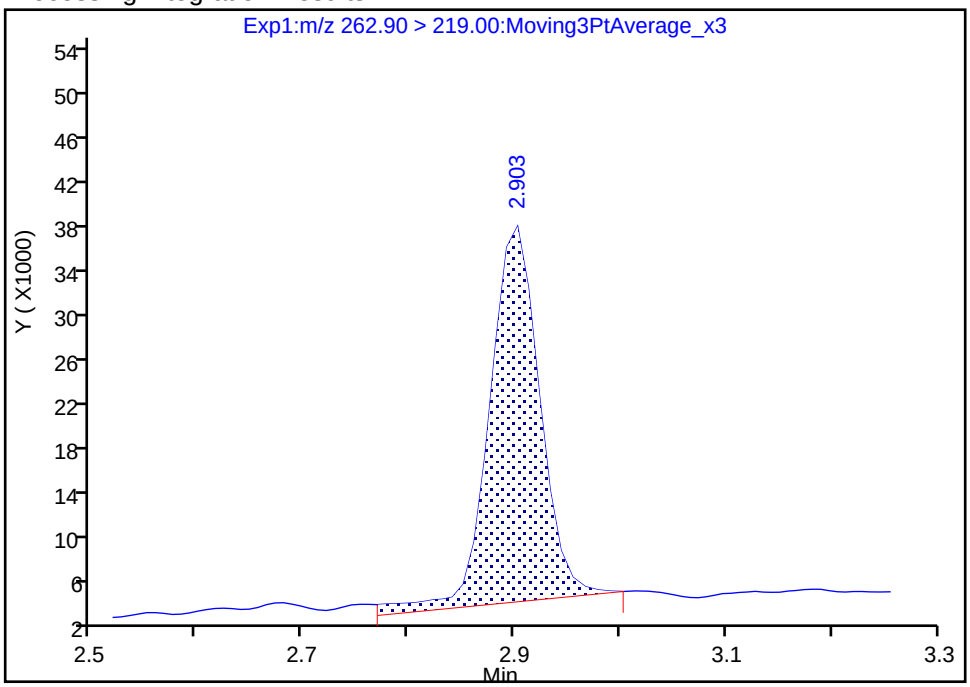
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

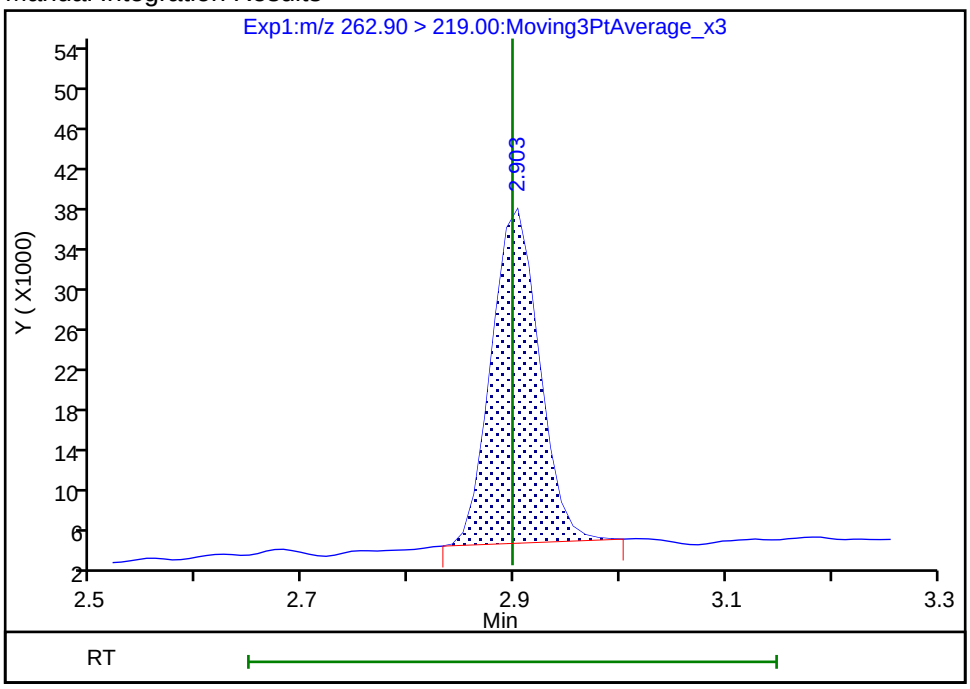
Processing Integration Results

RT: 2.90
Area: 111487
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 2.90
Area: 103688
Amount: 0.029617
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:16:39
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

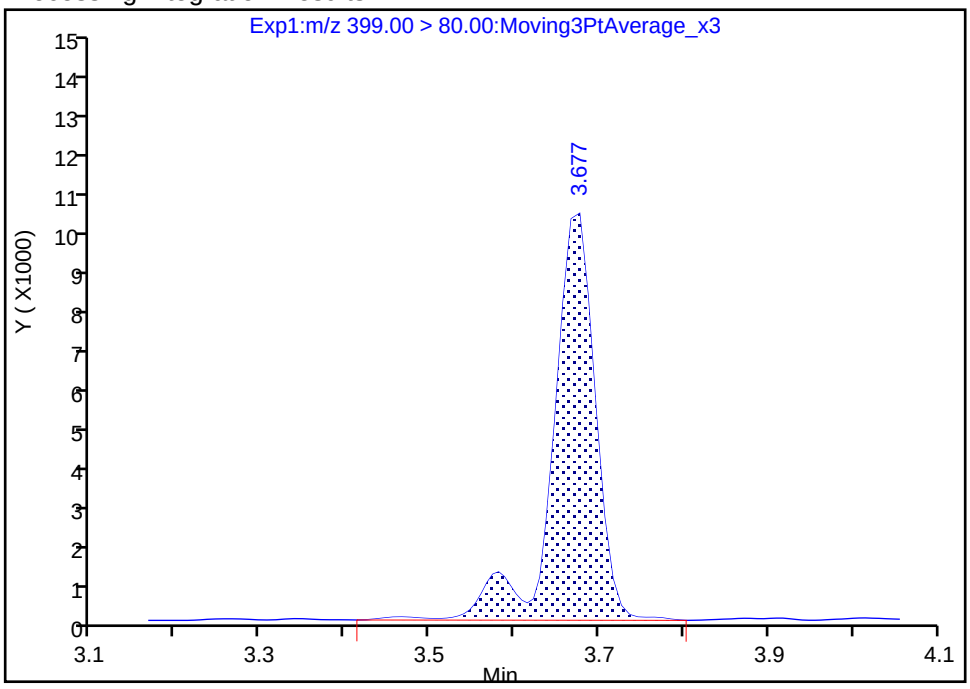
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

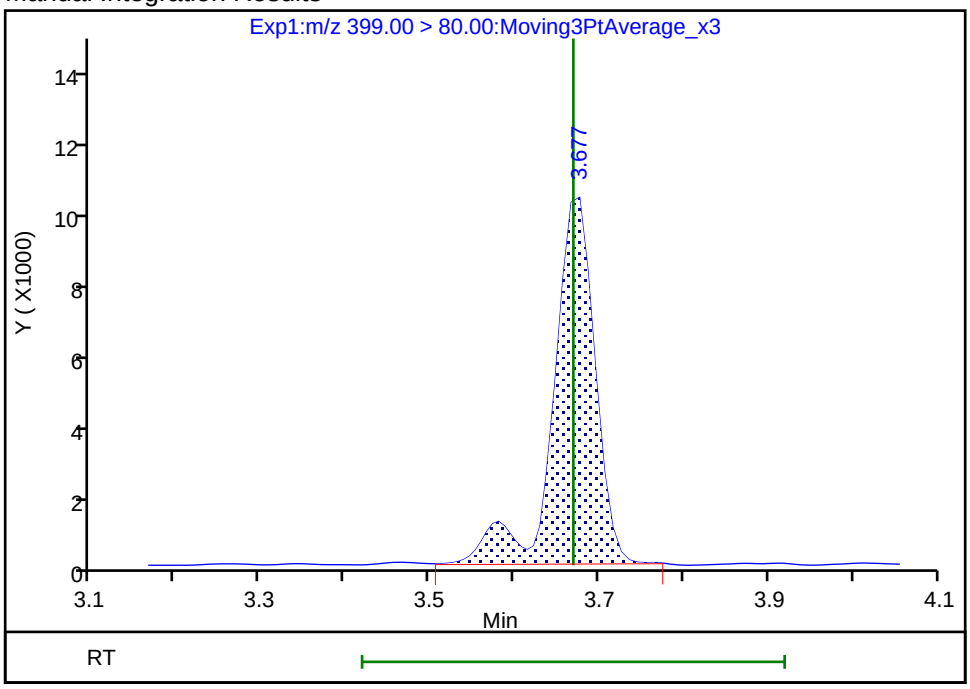
Processing Integration Results

RT: 3.68
Area: 36797
Amount: 0.022750
Amount Units: ng/ml



Manual Integration Results

RT: 3.68
Area: 36094
Amount: 0.027929
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:26:55
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

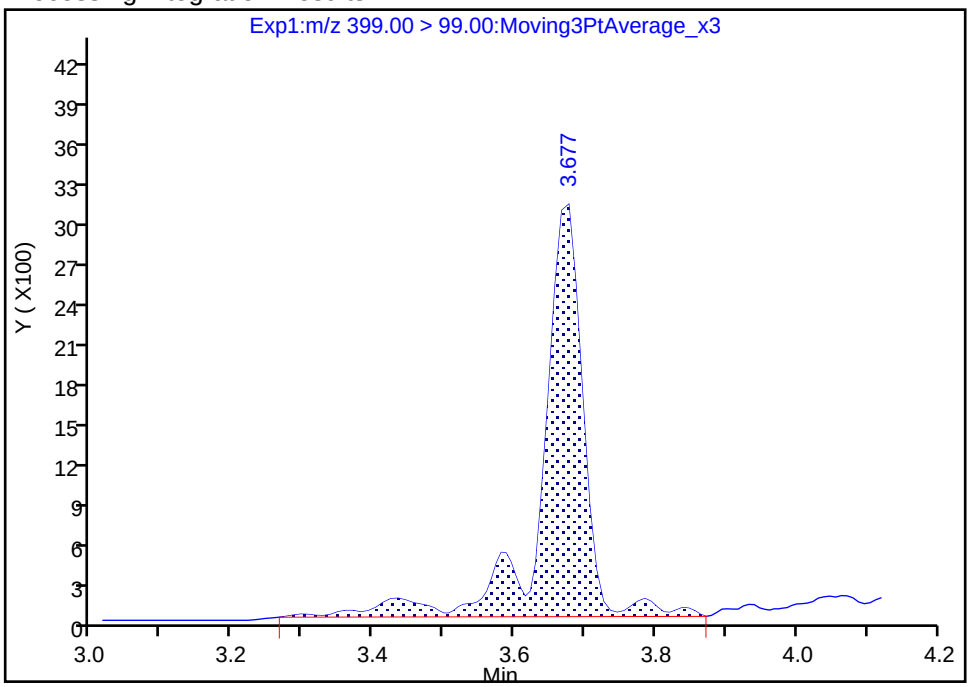
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

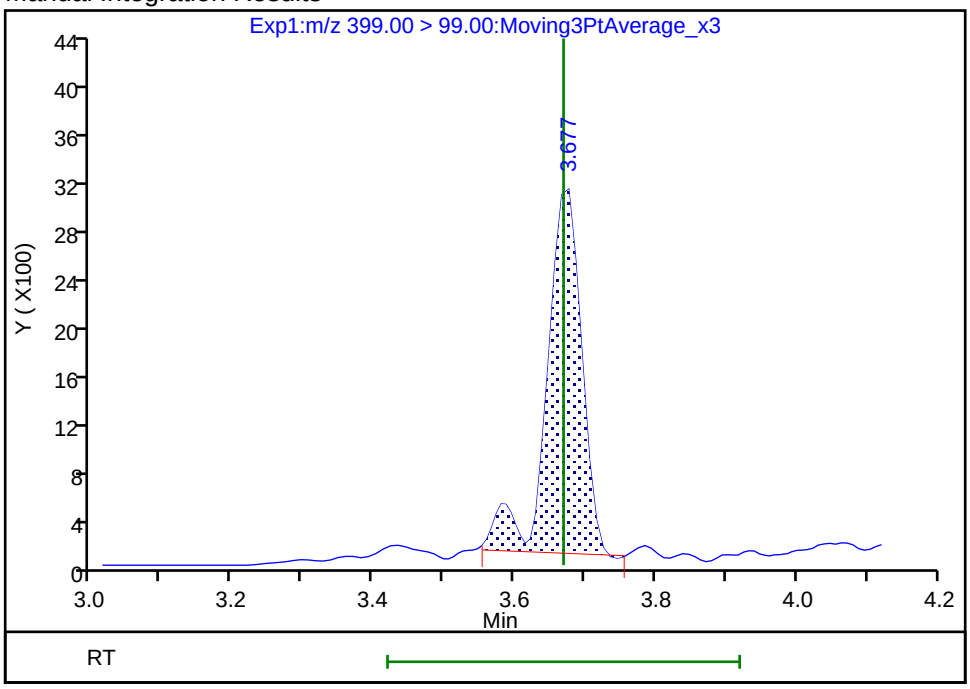
Processing Integration Results

RT: 3.68
Area: 12622
Amount: 0.022750
Amount Units: ng/ml



Manual Integration Results

RT: 3.68
Area: 10219
Amount: 0.027929
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:27:14
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

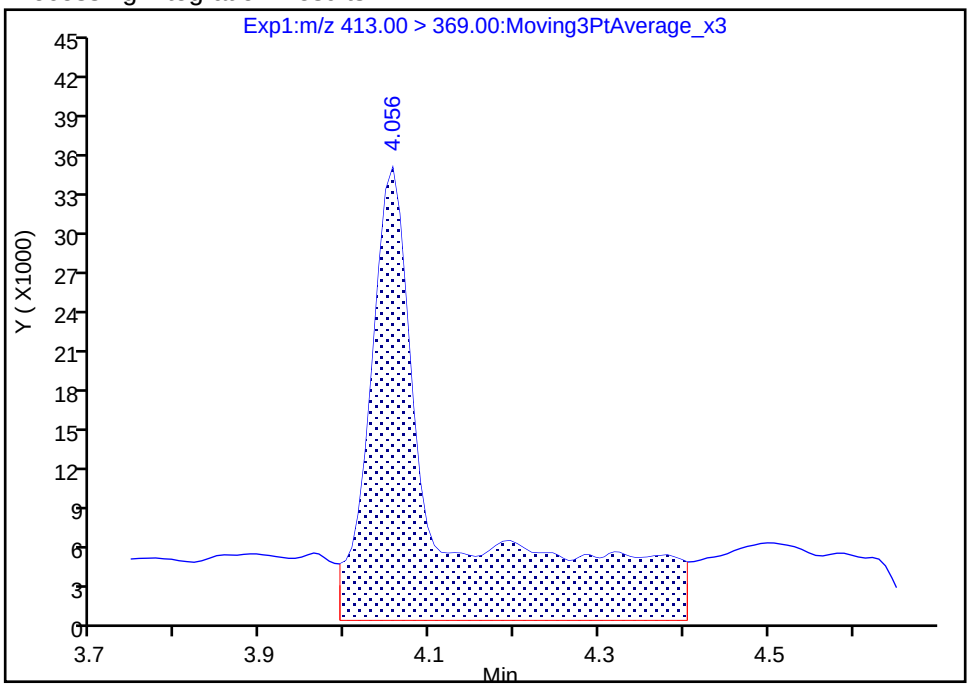
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

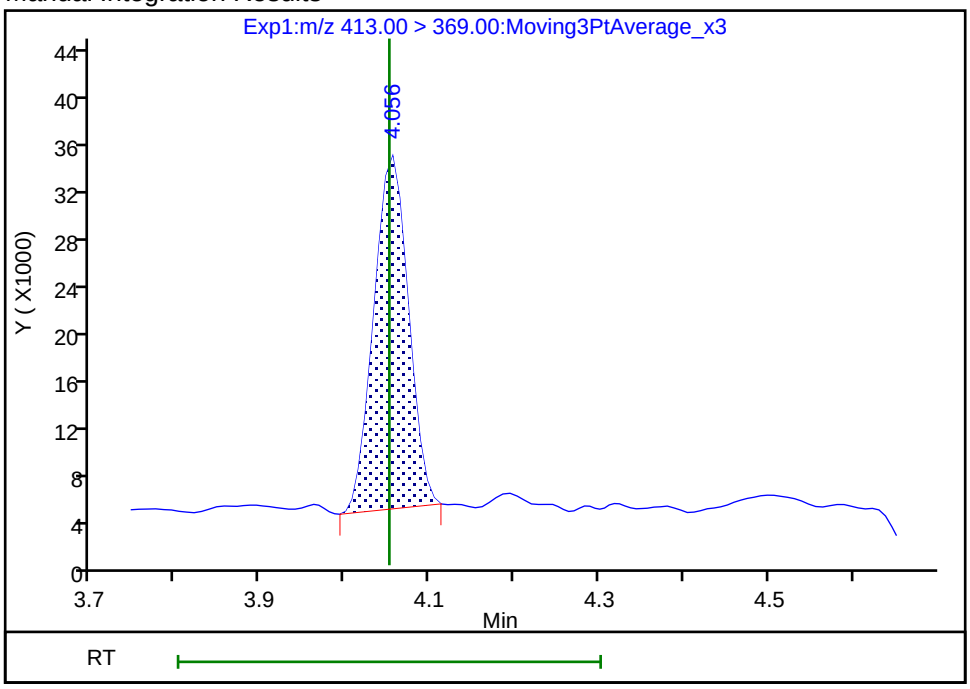
RT: 4.06
Area: 209334
Amount: 0.025000
Amount Units: ng/ml

Processing Integration Results



RT: 4.06
Area: 85389
Amount: 0.031469
Amount Units: ng/ml

Manual Integration Results



Reviewer: maxwellm, 04-Jun-2020 12:18:25
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

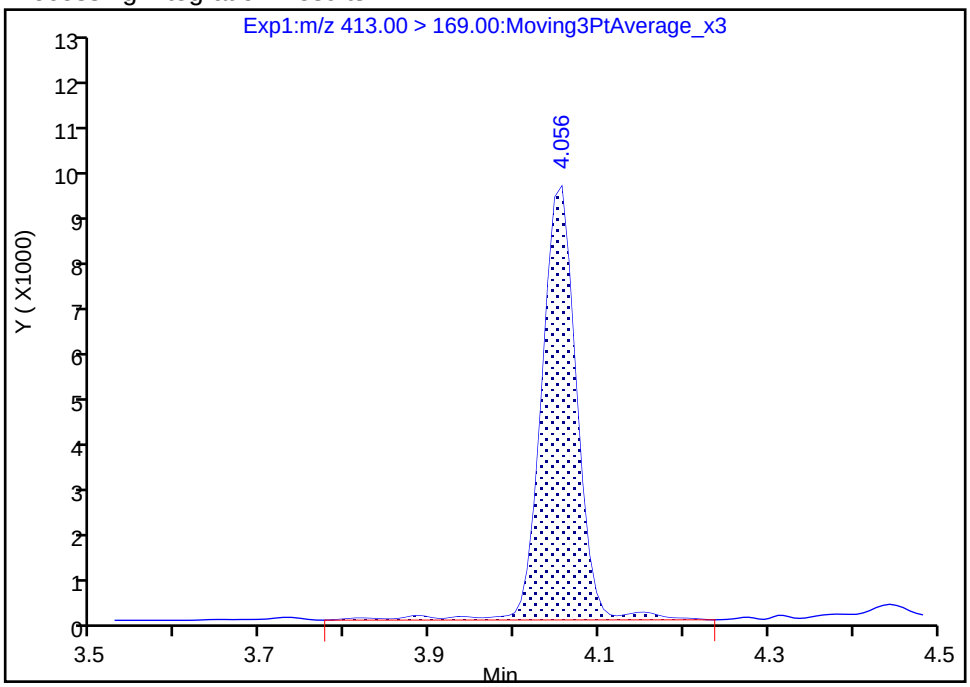
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

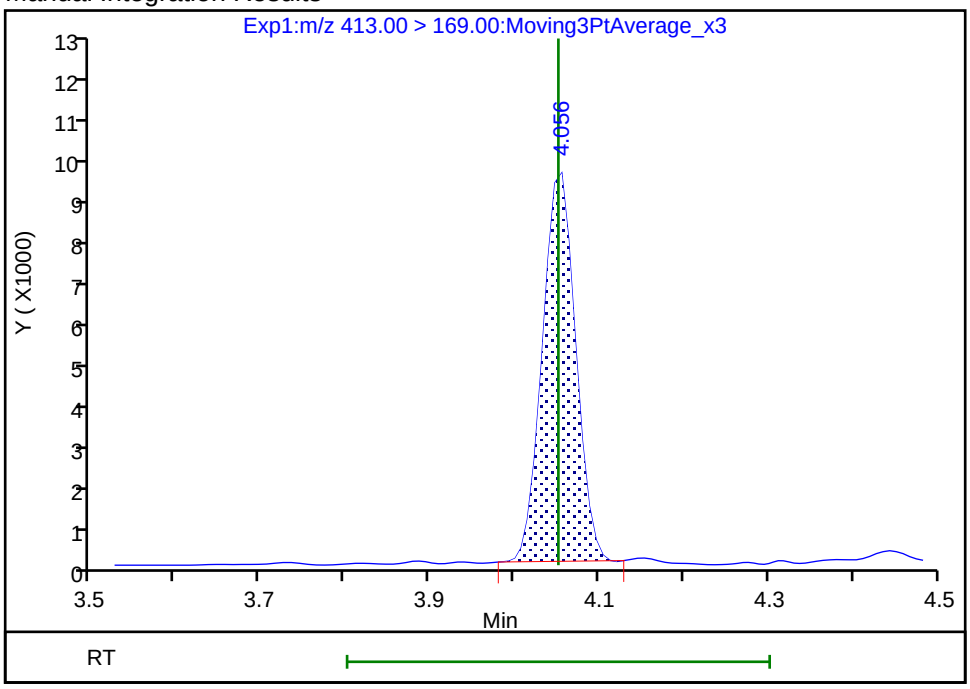
Processing Integration Results

RT: 4.06
Area: 27212
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 25450
Amount: 0.031469
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:24:24
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

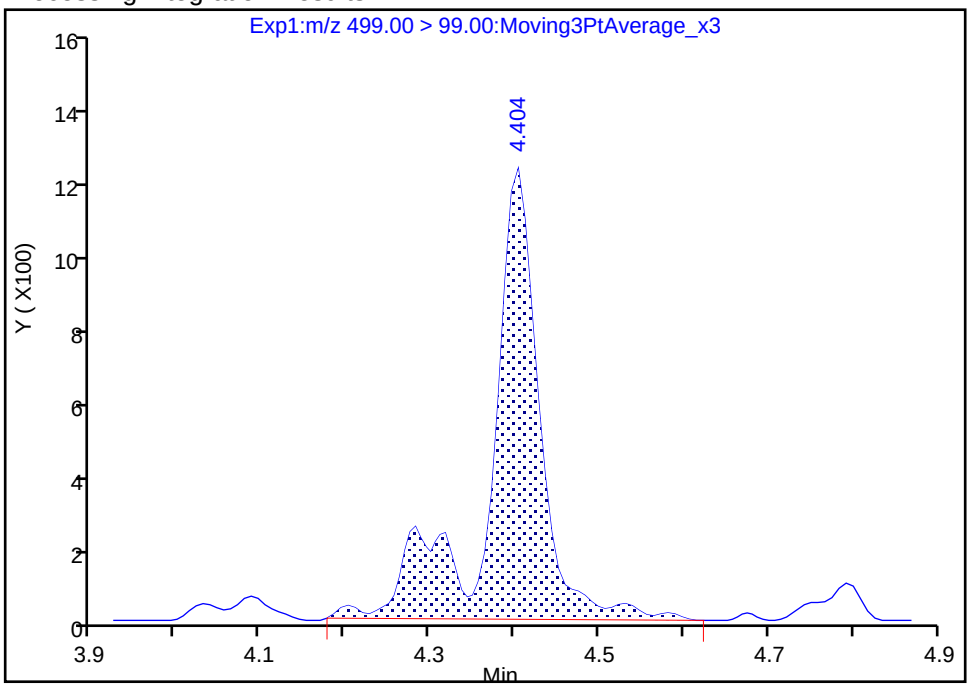
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

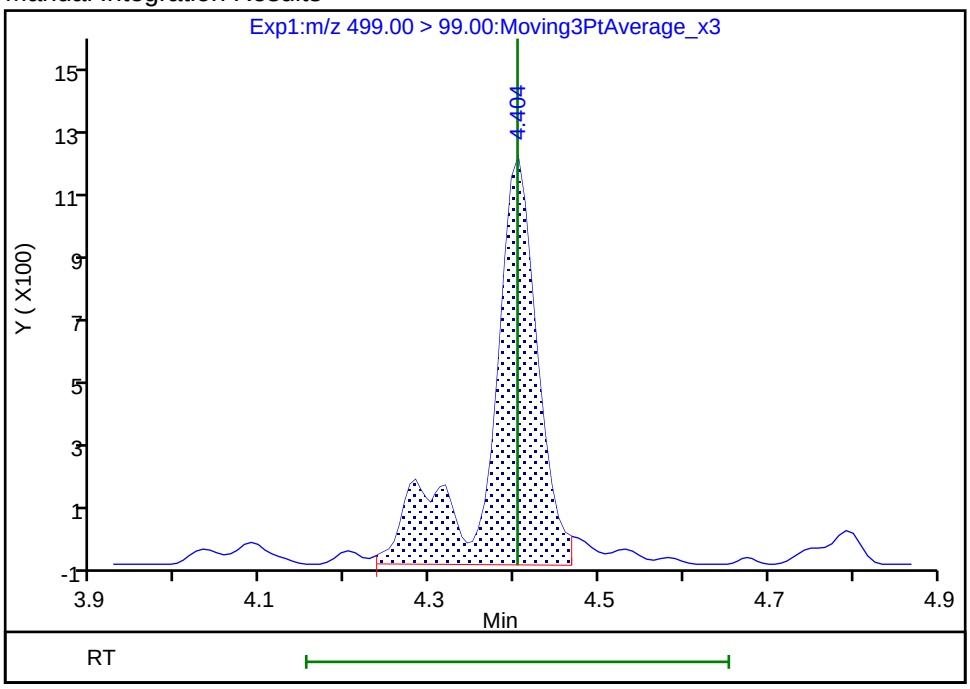
RT: 4.40
Area: 5055
Amount: 0.023200
Amount Units: ng/ml

Processing Integration Results



RT: 4.40
Area: 4776
Amount: 0.024258
Amount Units: ng/ml

Manual Integration Results



Reviewer: maxwellm, 04-Jun-2020 12:19:03
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

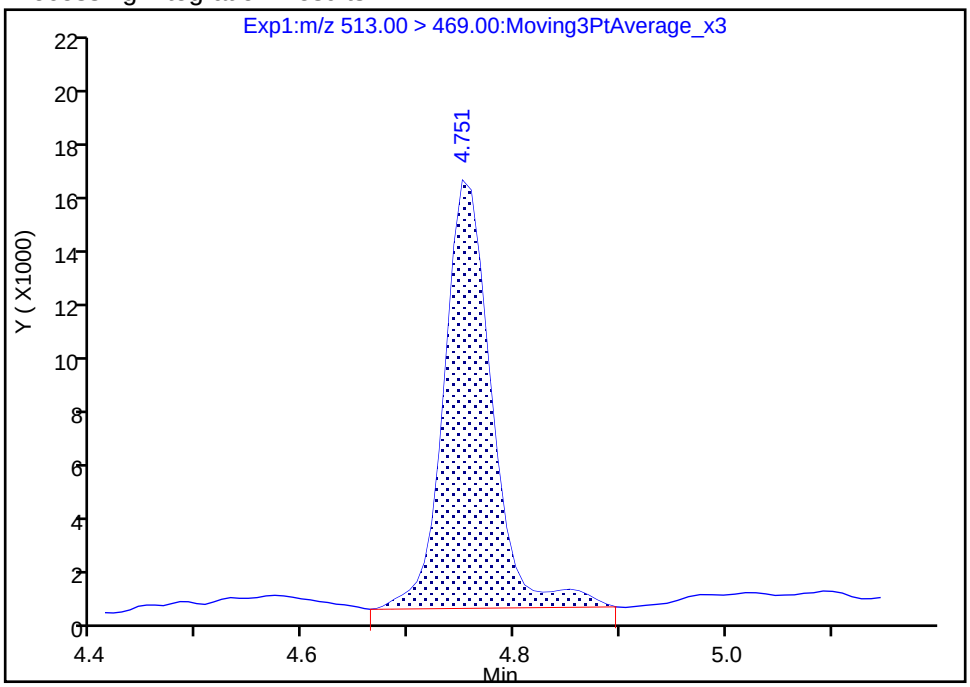
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

37 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

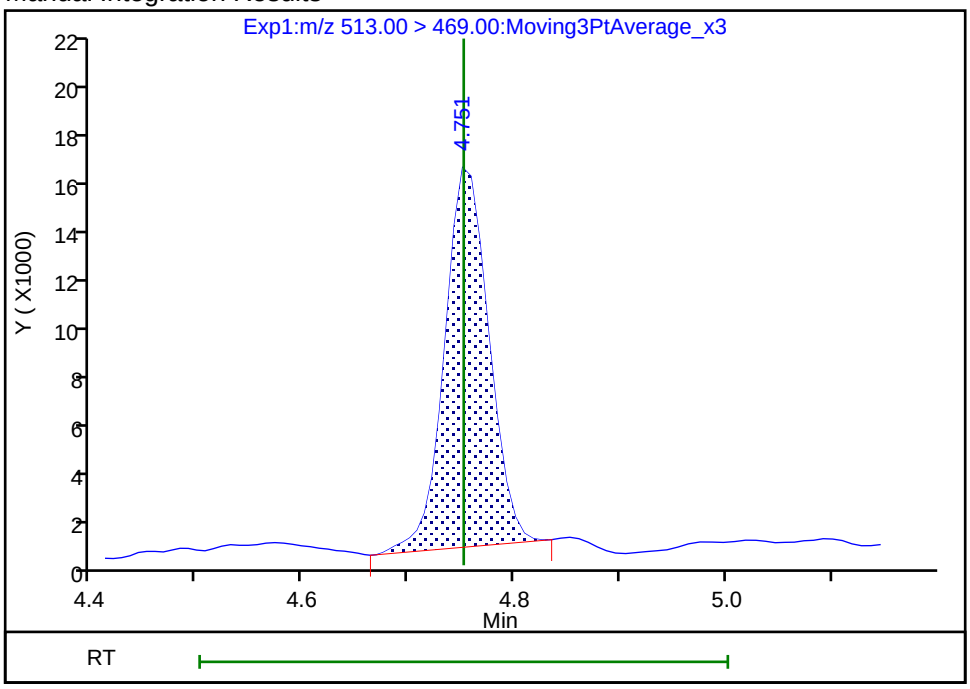
RT: 4.75
Area: 47810
Amount: 0.025000
Amount Units: ng/ml

Processing Integration Results



RT: 4.75
Area: 43490
Amount: 0.025383
Amount Units: ng/ml

Manual Integration Results



Reviewer: maxwellm, 04-Jun-2020 12:19:35
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

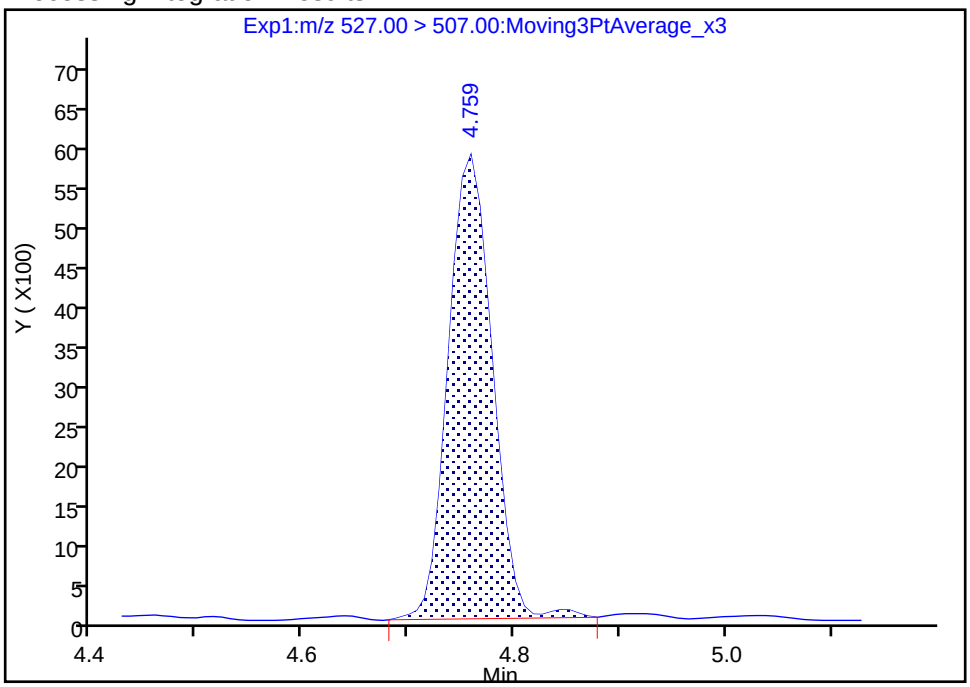
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

36 1H,1H,2H,2H-perfluorodecanesulfo, CAS: 39108-34-4

Signal: 1

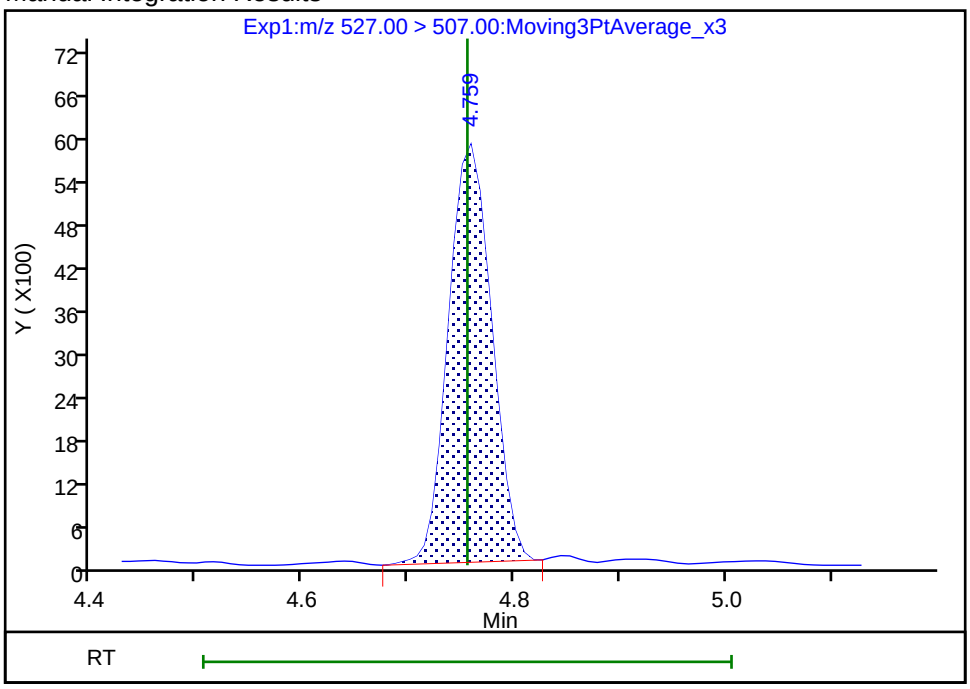
Processing Integration Results

RT: 4.76
Area: 16992
Amount: 0.023950
Amount Units: ng/ml



Manual Integration Results

RT: 4.76
Area: 16627
Amount: 0.023073
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:19:46
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

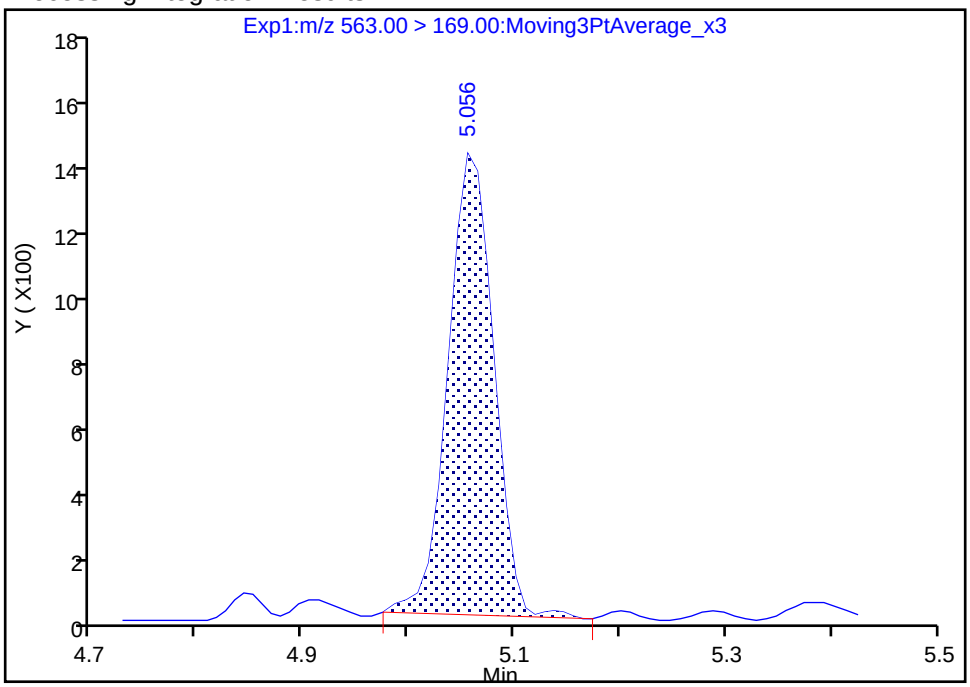
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

45 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

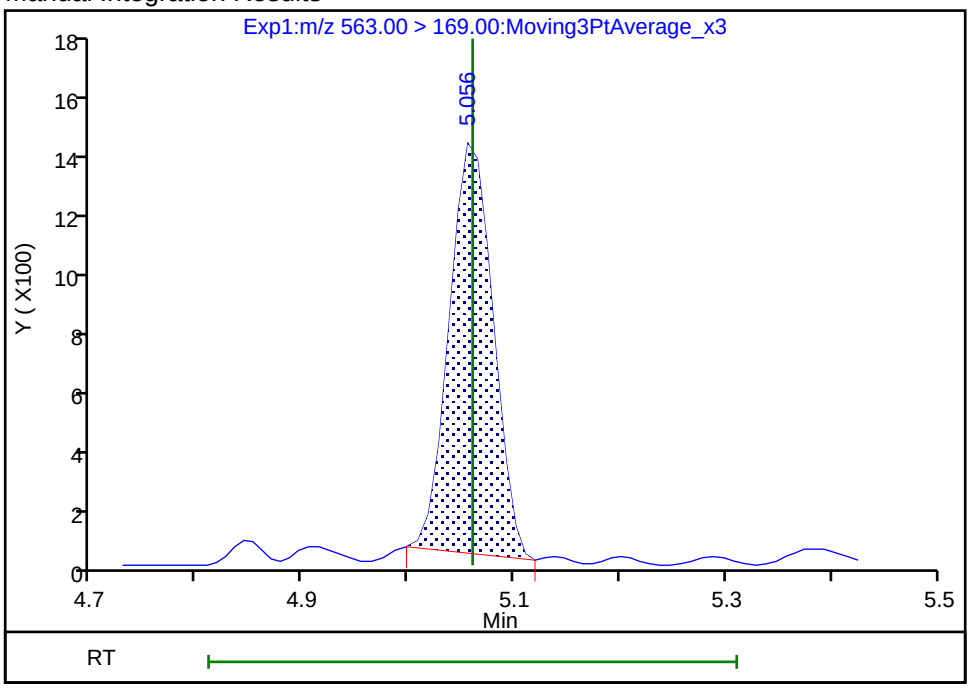
Processing Integration Results

RT: 5.06
Area: 4188
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.06
Area: 3958
Amount: 0.017833
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:24:55
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

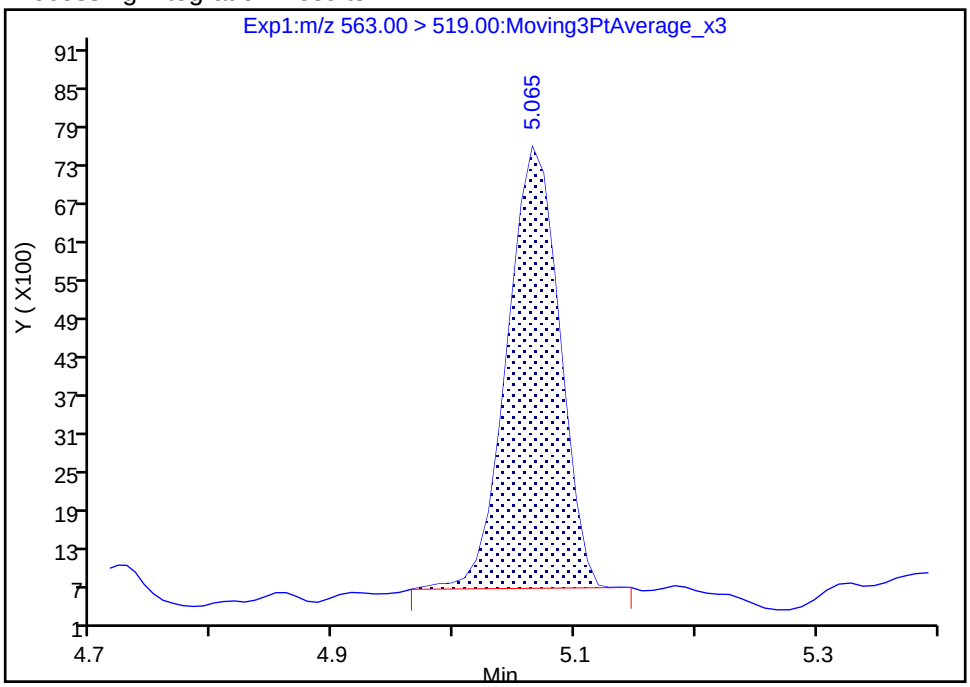
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

45 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

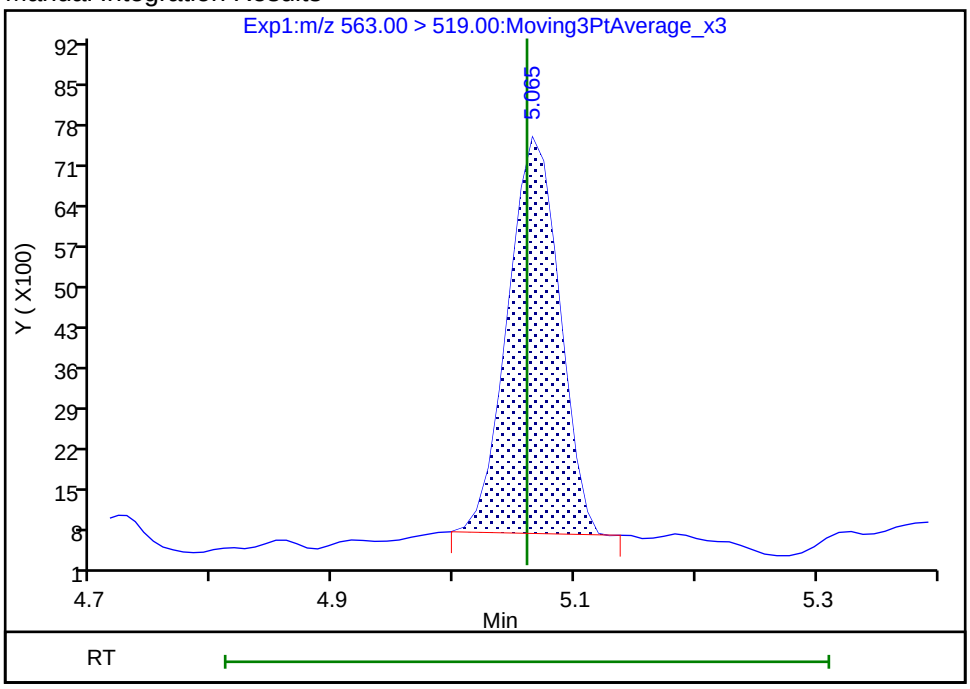
Processing Integration Results

RT: 5.06
Area: 20944
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.06
Area: 20441
Amount: 0.017833
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:25:03
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

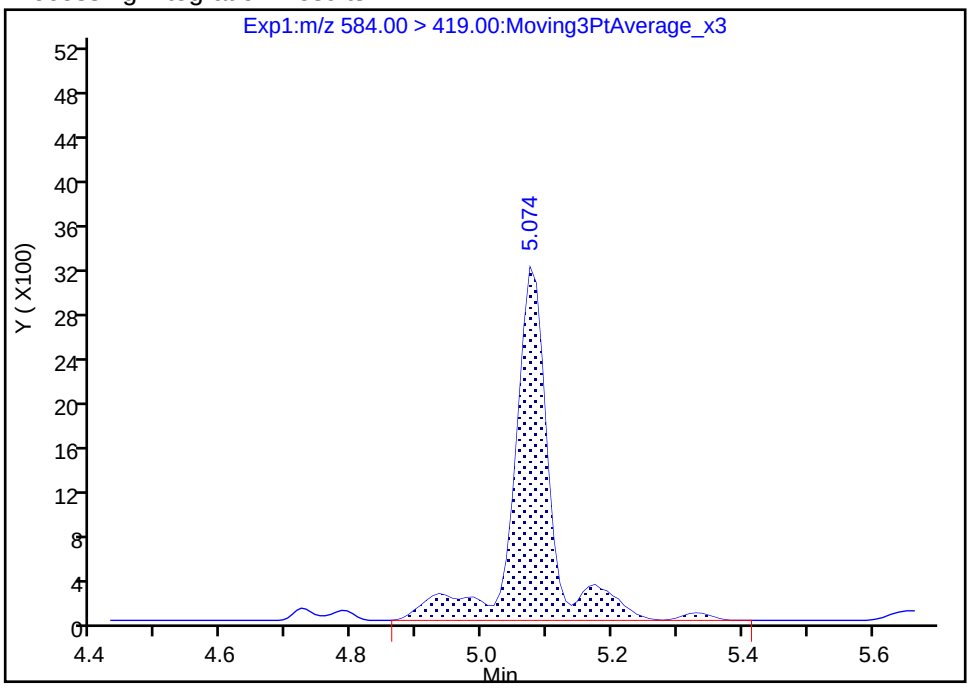
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

46 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

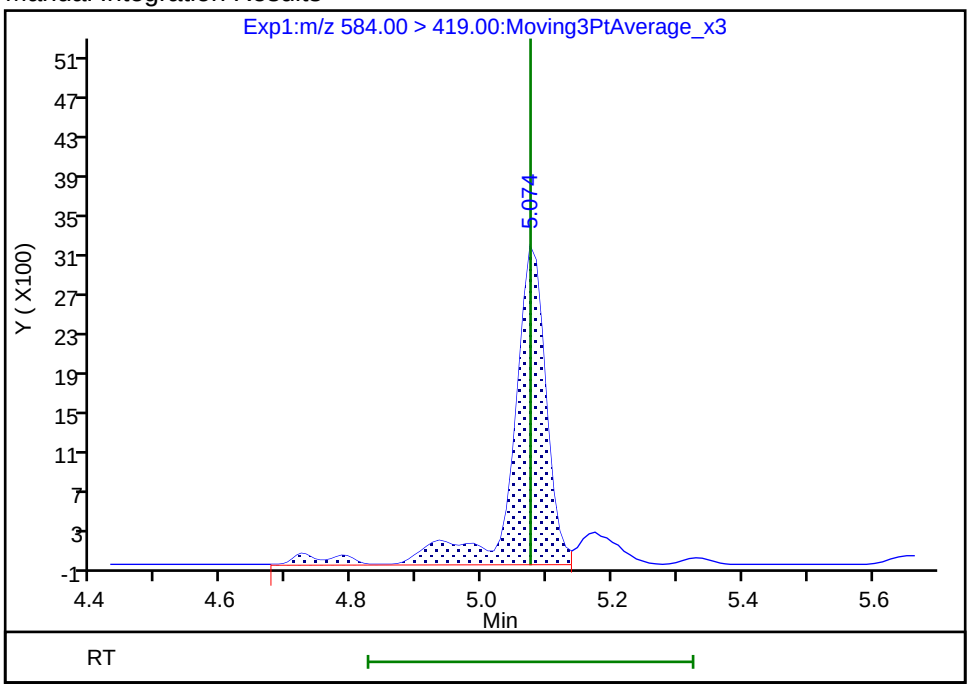
Processing Integration Results

RT: 5.07
Area: 12702
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.07
Area: 11820
Amount: 0.024450
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:20:27
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento

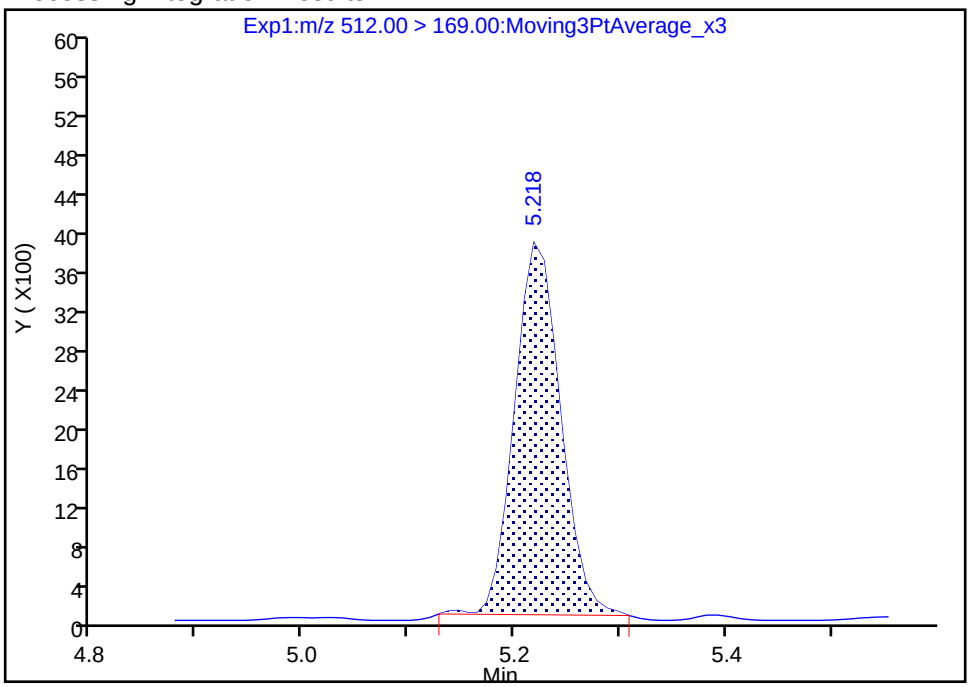
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

50 NMeFOSA, CAS: 31506-32-8

Signal: 1

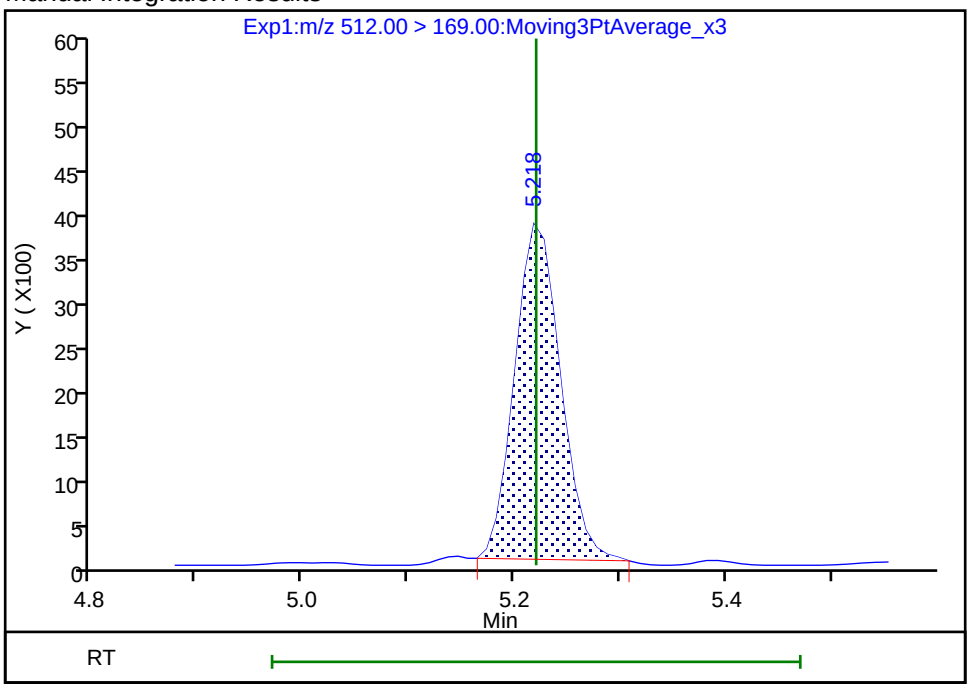
RT: 5.22
Area: 11566
Amount: 0.025000
Amount Units: ng/ml

Processing Integration Results



RT: 5.22
Area: 11445
Amount: 0.022900
Amount Units: ng/ml

Manual Integration Results



Reviewer: maxwellm, 04-Jun-2020 12:25:25
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

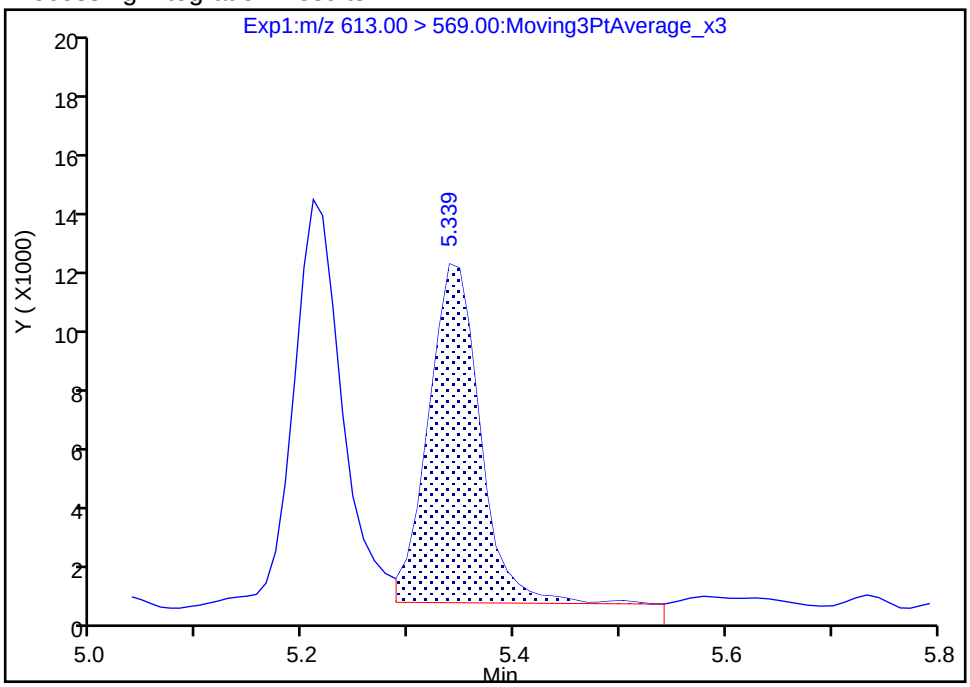
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

57 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

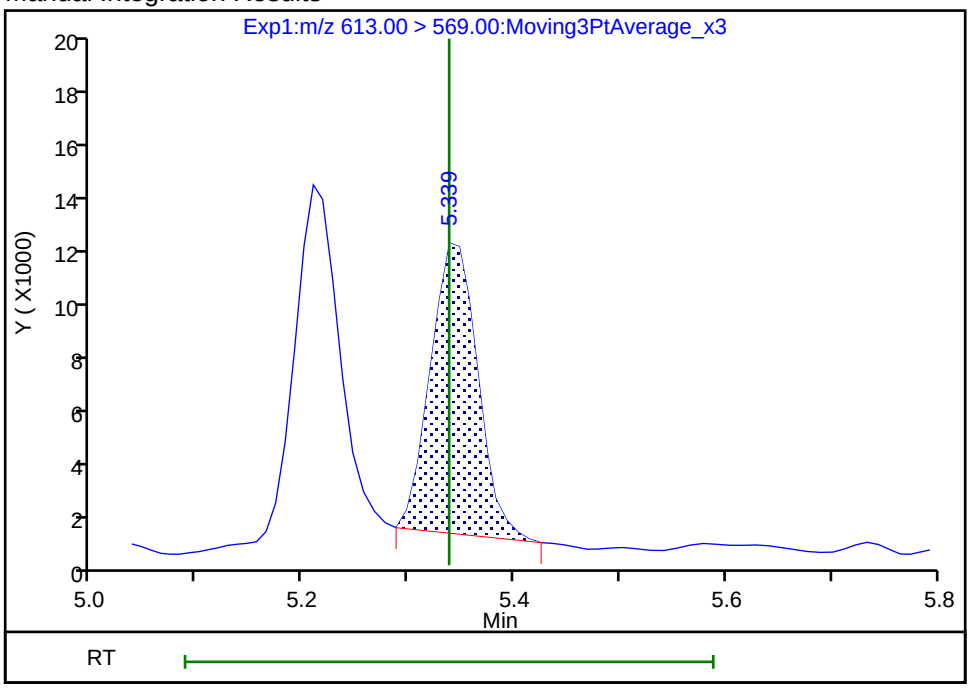
Processing Integration Results

RT: 5.34
Area: 37284
Amount: 0.027392
Amount Units: ng/ml



Manual Integration Results

RT: 5.34
Area: 32430
Amount: 0.024321
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:32:22
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

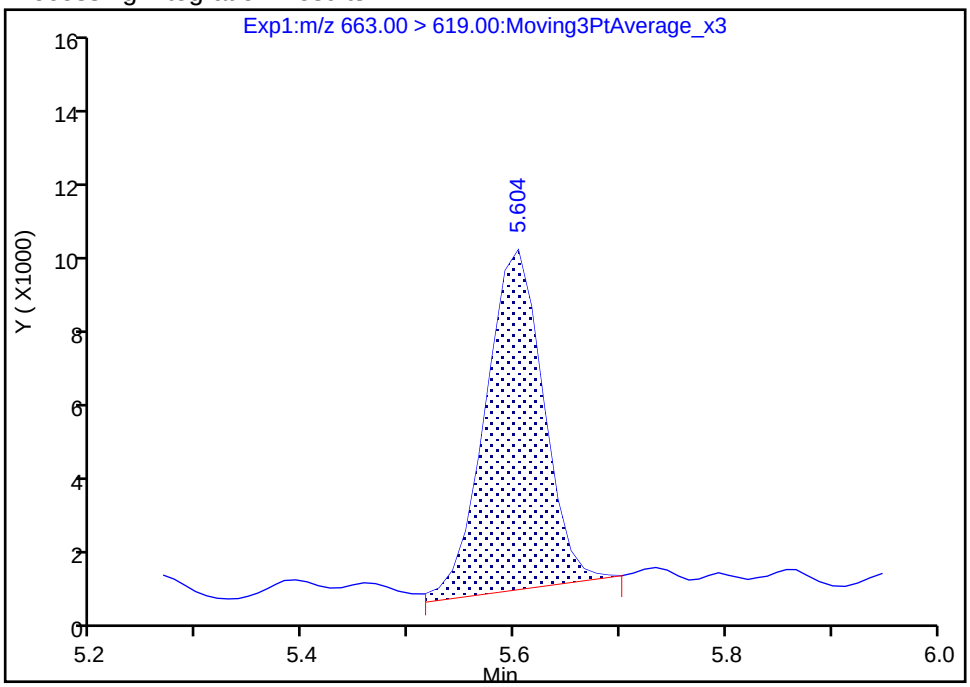
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

60 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

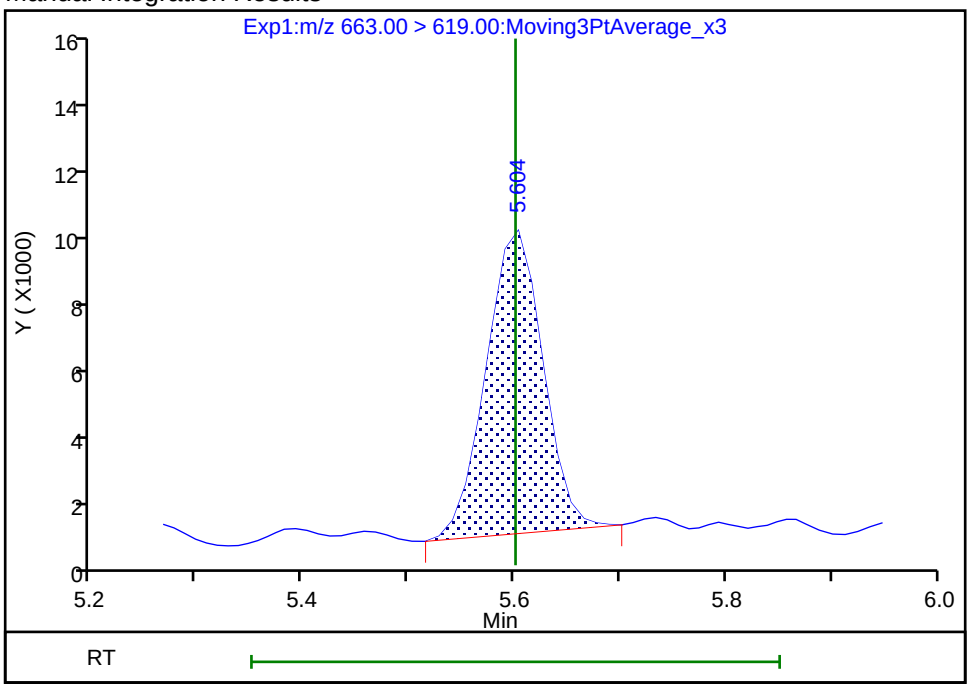
Processing Integration Results

RT: 5.60
Area: 33911
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.60
Area: 32713
Amount: 0.030517
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:26:03
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

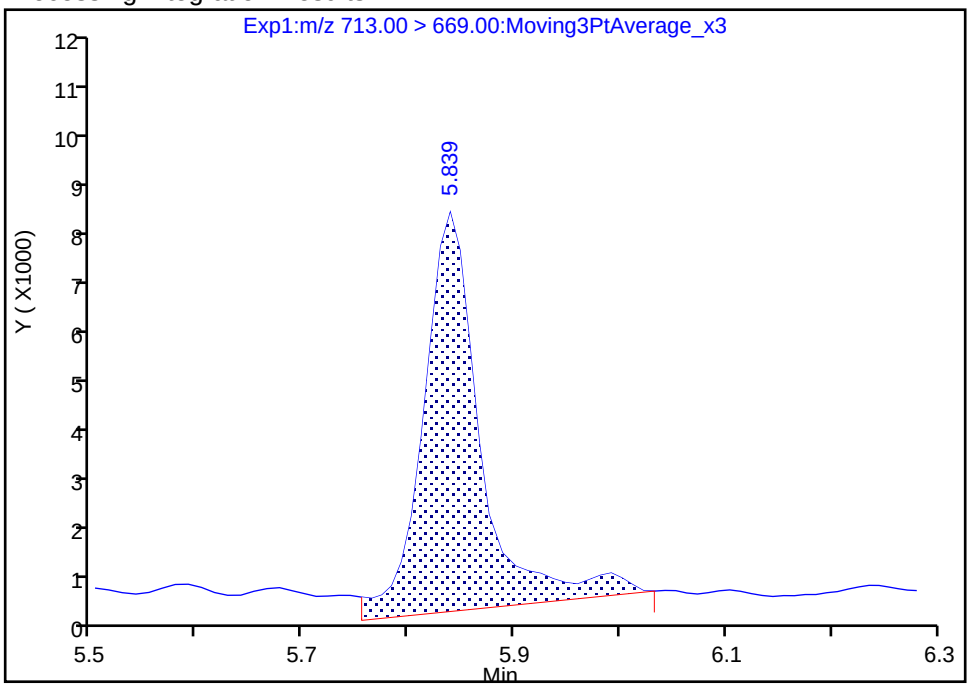
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

62 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

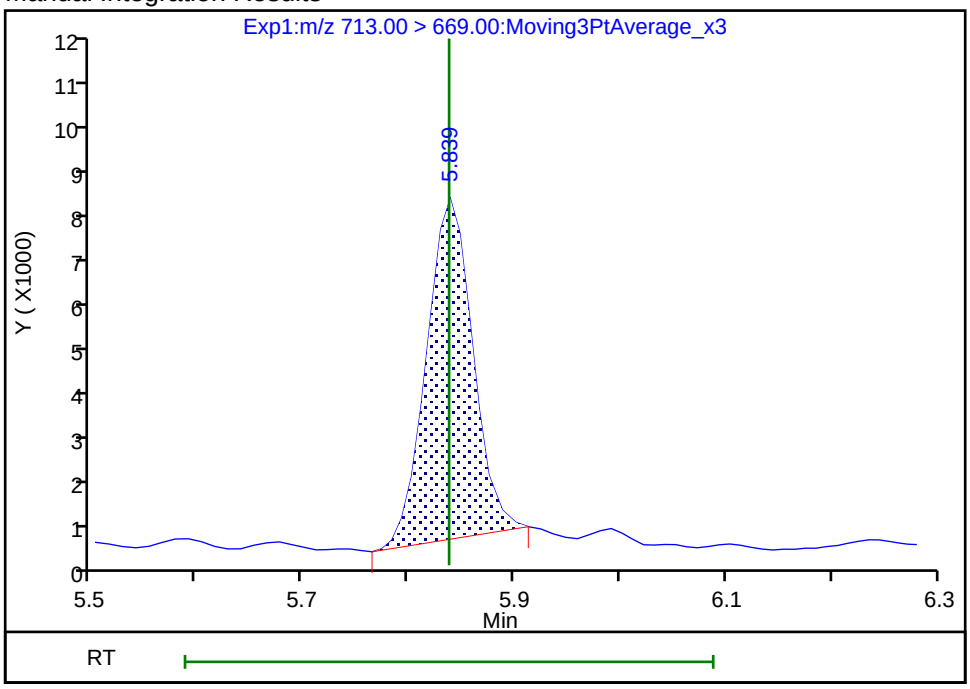
Processing Integration Results

RT: 5.84
Area: 29350
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.84
Area: 22029
Amount: 0.026914
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:23:22
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

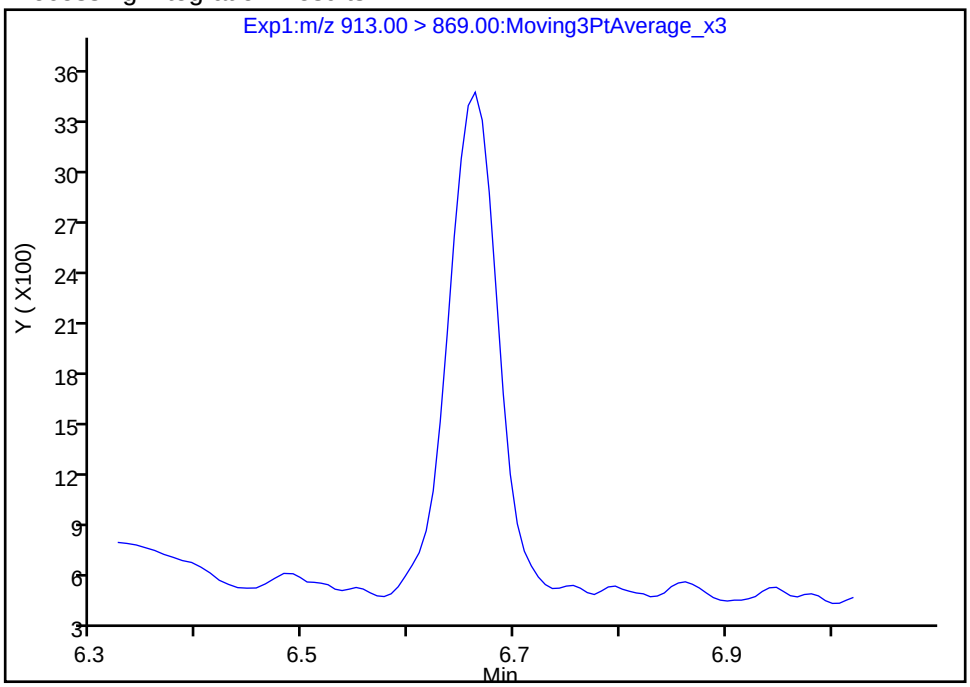
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

65 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 1

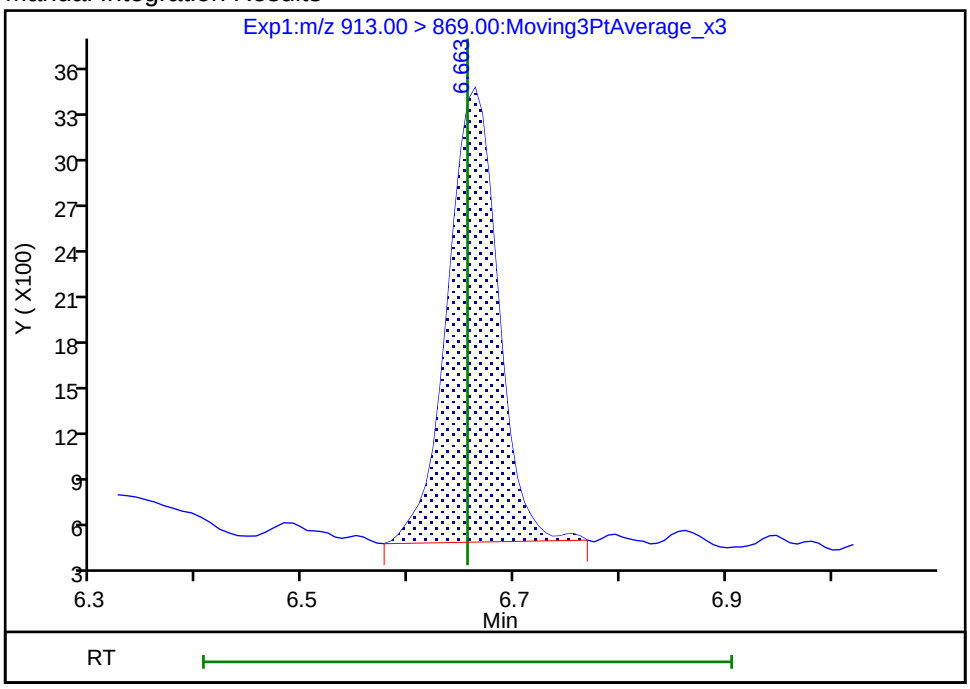
Not Detected
Expected RT: 6.66

Processing Integration Results



Manual Integration Results

RT: 6.66
Area: 9731
Amount: 0.026141
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:14:53
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

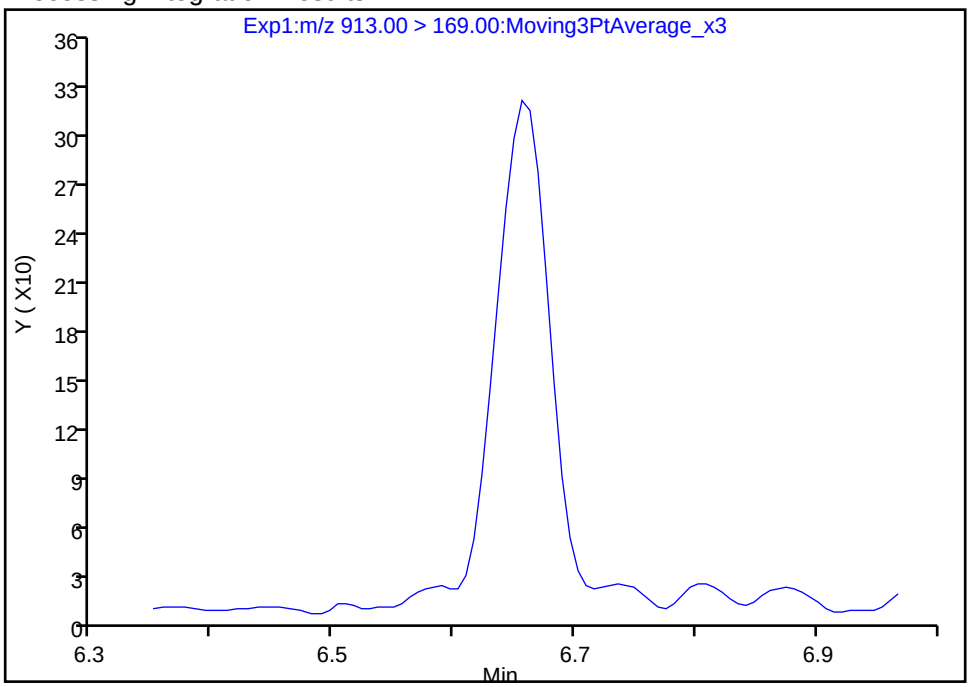
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

65 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 2

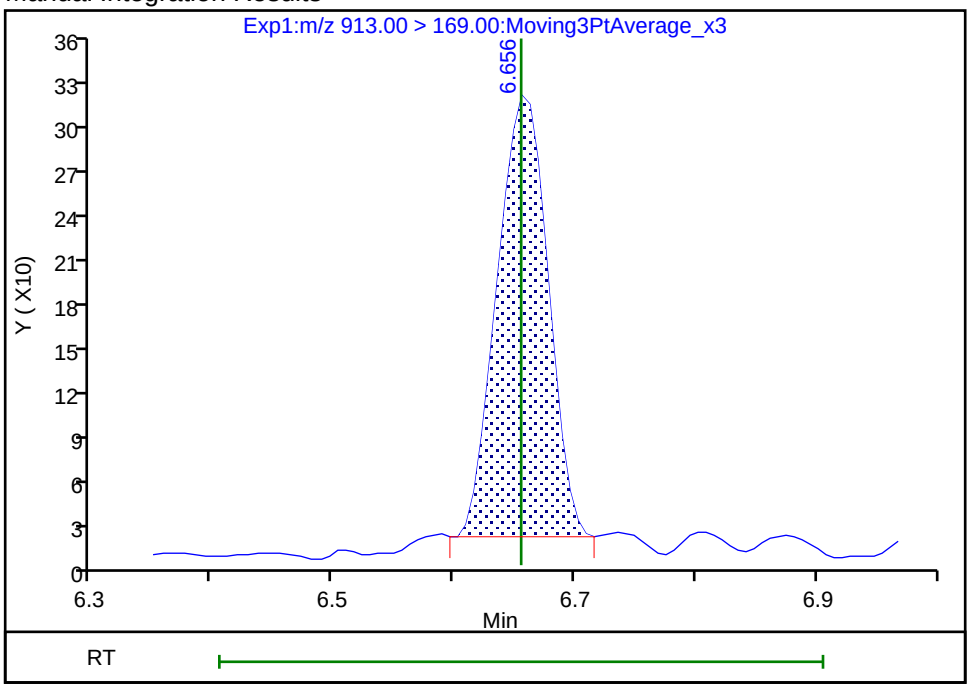
Not Detected
Expected RT: 6.66

Processing Integration Results



Manual Integration Results

RT: 6.66
Area: 863
Amount: 0.026141
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:14:58
Audit Action: Manually Integrated Audit Reason: Assign Peak

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 04-Jun-2020 12:06:02 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 2 (20)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:14 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 12:30:44
Ratio Calibration: Average of Initial Calibration

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	2.544	2.549	-0.005	0.629	9299542	2.52		101	21143	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.544	2.551	-0.007	1.000	162849	0.0473		94.6	46.0	
D 4 13C5 PFPeA										
267.90 > 223.00	2.893	2.895	-0.002	0.715	8556695	2.59		104	15057	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.893	2.898	-0.005	1.000	176111	0.0511		102	13.2	M
D 9 13C3 PFBS										
301.90 > 80.00	2.923	2.930	-0.007	0.723	5257827	2.30		98.8	13652	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.923	2.930	-0.007	1.000	95864	0.0435	Target=2.14	98.4	49.9	
298.90 > 99.00	2.923	2.930	-0.007	1.000	43026		2.23(1.07-3.21)	98.4	28.7	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.221	3.226	-0.005	0.796	722978	2.37		102	1611	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.221	3.227	-0.006	1.000	30594	0.0438		93.8	719	
D 11 13C2 PFHxA										
315.00 > 270.00	3.256	3.267	-0.011	0.805	8119512	2.53		101	14899	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.256	3.267	-0.011	1.000	152223	0.0500	Target=15.73	100.0	78.9	
313.00 > 119.00	3.256	3.267	-0.011	1.000	9386		16.22(7.86-23.59)	100.0	31.1	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.276	3.285	-0.009	1.121	73997	0.0446	Target=2.69	95.1	533	
349.00 > 99.00	3.276	3.285	-0.009	1.121	29851		2.48(1.35-4.04)	95.1	198	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.382	3.386	-0.004	0.836	1849556	2.52		101	8739	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.382	3.386	-0.004	1.000	30986	0.0459		91.7	443	
D 18 13C4 PFHpA										
367.00 > 322.00	3.654	3.661	-0.007	0.903	6619945	2.60		104	11550	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.654	3.662	-0.008	1.000	134247	0.0502	Target=3.80	100	52.5	
363.00 > 169.00	3.654	3.662	-0.008	1.000	33687		3.99(1.90-5.71)	100	180	
D 17 18O2 PFHxS										
403.00 > 84.00	3.664	3.667	-0.003	0.906	2605903	2.37		100	14821	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.664	3.670	-0.006	1.000	59028	0.0477	Target=2.99	105	582	
399.00 > 99.00	3.664	3.670	-0.006	1.000	19559		3.02(1.50-4.49)	105	75.7	M
19 DONA										
377.00 > 251.00	3.703	3.709	-0.006	0.843	275714	0.0446	Target=2.14	94.6	998	
377.00 > 85.00	3.703	3.709	-0.006	0.843	128834		2.14(1.07-3.21)	94.6	720	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.021	4.030	-0.009	0.994	854355	2.54		107	3846	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.021	4.032	-0.011	1.000	31305	0.0443		93.4	365	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.037	4.046	-0.009	0.919	41734	0.0453	Target=3.77	95.2	446	
449.00 > 99.00	4.037	4.046	-0.009	0.919	10947		3.81(1.89-5.66)	95.2	92.3	
$ 26 13C8 PFOA										
421.00 > 376.00	4.037	4.046	-0.009	0.998	3536219	2.50		102	12495	
D 25 13C4 PFOA										
417.00 > 372.00	4.045	4.051	-0.006	1.000	5799255	2.52		101	11925	
* 23 13C2 PFOA										
415.00 > 370.00	4.045	4.051	-0.006		5834898	2.50			9877	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.045	4.052	-0.007	1.000	120876	0.0493	Target=2.88	98.6	8.9	M
413.00 > 169.00	4.045	4.052	-0.007	1.000	47187		2.56(1.44-4.31)	98.6	147	M
$ 28 13C8 PFOS										
507.00 > 99.00	4.393	4.400	-0.007	1.086	699275	2.41		101	4391	
D 27 13C4 PFOS										
503.00 > 80.00	4.393	4.402	-0.009	1.086	2017066	2.36		98.8	5670	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.393	4.403	-0.010	1.000	37206	0.0446	Target=4.89	96.0	225	M
499.00 > 99.00	4.393	4.403	-0.010	1.000	7850		4.74(2.44-7.33)	96.0	59.2	M
31 Perfluorononanoic acid										M
463.00 > 419.00	4.409	4.417	-0.008	1.000	85362	0.0478	Target=7.00	95.5	16.9	M
463.00 > 169.00	4.409	4.417	-0.008	1.000	13218		6.46(3.50-10.51)	95.5	85.3	
D 30 13C5 PFNA										
468.00 > 423.00	4.409	4.417	-0.008	1.090	4405249	2.50		100	8193	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.586	4.592	-0.006	1.044	97462	0.0423		90.8	639	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.725	4.732	-0.007	1.076	33593	0.0498	Target=2.77	104	75.2	
549.00 > 99.00	4.725	4.732	-0.007	1.076	12630		2.66(1.38-4.15)	104	163	
D 33 13C8 FOSA										
506.00 > 78.00	4.739	4.747	-0.008	1.172	4396116	2.59		104	6942	
34 Perfluorooctanesulfonamide										M
498.00 > 78.00	4.739	4.749	-0.010	1.000	74988	0.0486		97.1	410	M
37 Perfluorodecanoic acid										M
513.00 > 469.00	4.746	4.752	-0.006	1.000	82296	0.0513	Target=10.36	103	24.6	M
513.00 > 169.00	4.746	4.752	-0.006	1.000	7292		11.29(5.18-15.54)	103	56.4	
D 39 13C2 PFDA										
515.00 > 470.00	4.746	4.754	-0.008	1.173	4154723	2.48		99.0	9894	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.746	4.755	-0.009	1.000	33061	0.0464		96.8	306	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.746	4.755	-0.009	1.173	1046506	2.61		109	7889	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.910	4.912	-0.002	1.214	1544095	2.46		98.6	2553	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.910	4.915	-0.005	1.000	20230	0.0449		89.8	44.0	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.032	5.037	-0.005	1.145	26992	0.0456	Target=2.97	94.7	133	
599.00 > 99.00	5.032	5.037	-0.005	1.145	10224		2.64(1.49-4.46)	94.7	102	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.050	5.060	-0.010	0.998	43073	0.0387	Target=7.56	77.5	25.0	
563.00 > 169.00	5.059	5.060	-0.001	1.000	6384		6.75(3.78-11.34)	77.5	60.9	
D 43 13C2 PFUnA										
565.00 > 520.00	5.059	5.062	-0.003	1.251	3852340	2.69		108	9771	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.068	5.071	-0.003	1.253	1665421	2.61		104	1948	
46 N-ethylperfluorooctanesulfonamid										M
584.00 > 419.00	5.068	5.075	-0.007	1.000	21533	0.0457		91.5	118	M
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.186	5.191	-0.005	1.180	98667	0.0453		96.2	427	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.195	5.198	-0.003	1.284	5365729	12.5		100	4293	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.204	5.209	-0.005	1.002	22047	0.0491		98.1	57.1	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.213	5.215	-0.002	1.289	1285651	2.40		95.8	284	
50 NMeFOSA										M
512.00 > 169.00	5.213	5.220	-0.007	1.000	21251	0.0439		87.8	163	M
57 Perfluorododecanoic acid										M
613.00 > 569.00	5.333	5.338	-0.005	1.000	65400	0.0495	Target=7.18	98.9	11.6	M
613.00 > 169.00	5.342	5.338	0.004	1.002	10066		6.50(3.59-10.76)	98.9	98.0	
D 56 13C2 PFDoA										
615.00 > 570.00	5.333	5.339	-0.006	1.318	3366889	2.66		106	9839	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.361	5.362	-0.001	1.129	24991	0.0445		92.2	283	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.361	5.364	-0.003	1.325	6383659	12.2		97.4	4523	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.376	5.376	0.0	1.003	25624	0.0490		98.0	70.9	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.384	5.387	-0.003	1.331	1317134	2.42		96.7	699	
55 N-ethylperfluoro-1-octanesulfona										M
526.00 > 169.00	5.384	5.395	-0.011	1.000	24512	0.0464		92.9	180	M
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.558	5.562	-0.004	1.265	8788	0.0428	Target=0.79	88.4	214	
699.00 > 99.00	5.558	5.562	-0.004	1.265	12117		0.73(0.39-1.18)	88.4	219	
60 Perfluorotridecanoic acid										M
663.00 > 619.00	5.595	5.601	-0.006	1.049	44007	0.0414	Target=6.63	82.8	7.6	M
663.00 > 169.00	5.595	5.601	-0.006	1.049	7836		5.62(3.32-9.95)	82.8	120	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.833	5.835	-0.002	1.442	2031772	2.45		98.1	7513	
62 Perfluorotetradecanoic acid										M
713.00 > 669.00	5.833	5.838	-0.005	1.000	38411	0.0473	Target=8.46	94.5	10.5	M
713.00 > 219.00	5.833	5.838	-0.005	1.000	5859		6.56(4.23-12.69)	94.5	154	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.257	6.257	0.0	1.547	1921227	2.80		112	6321	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.257	6.258	-0.001	1.000	45682	0.0465	Target=7.92	93.0	6.9	
813.00 > 169.00	6.257	6.258	-0.001	1.000	6195		7.37(3.96-11.88)	93.0	107	
65 Perfluorooctadecanoic acid										M
913.00 > 869.00	6.652	6.655	-0.003	1.063	16349	0.0432	Target=10.24	86.5	3.7	M
913.00 > 169.00	6.652	6.655	-0.003	1.063	1654		9.88(5.12-15.36)	86.5	42.0	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00020 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:16 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d

Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15

Lims ID: IC L2 Full

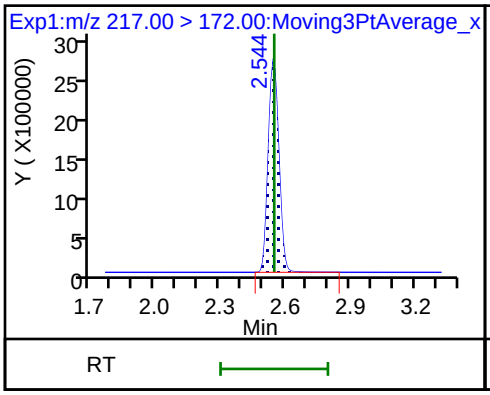
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3

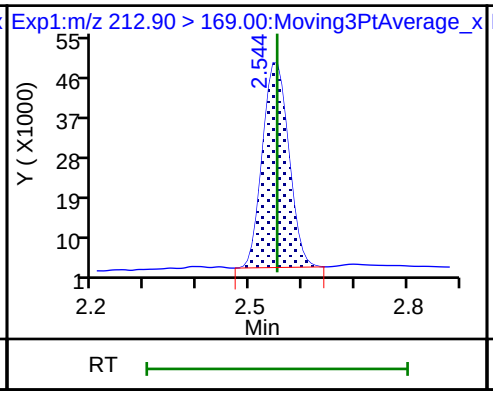
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

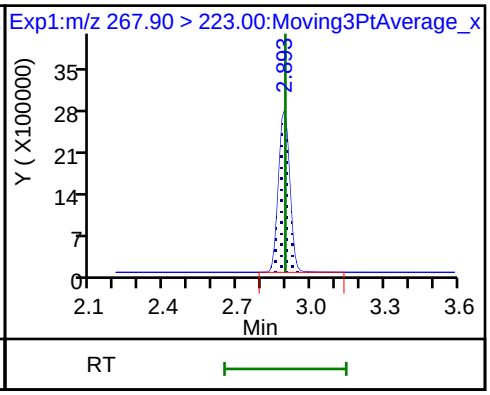
D 1 13C4 PFBA



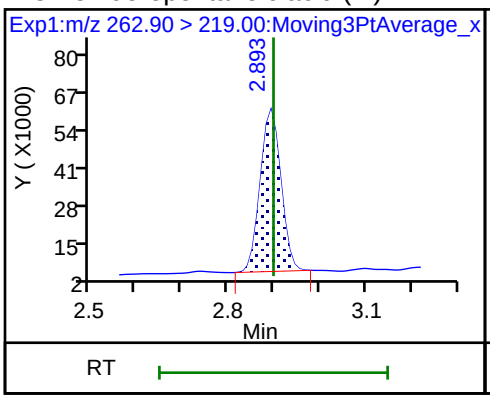
2 Perfluorobutanoic acid



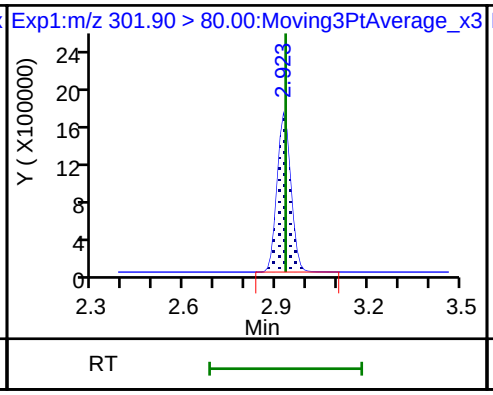
D 4 13C5 PFPeA



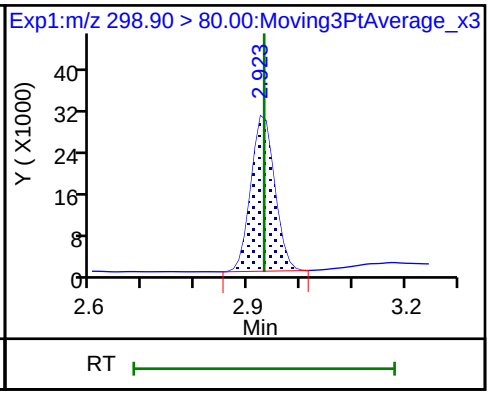
5 Perfluoropentanoic acid (M)



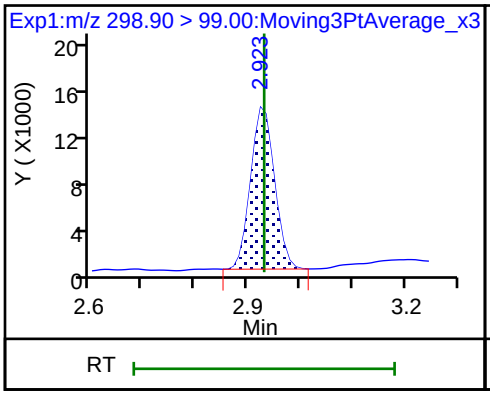
D 9 13C3 PFBS



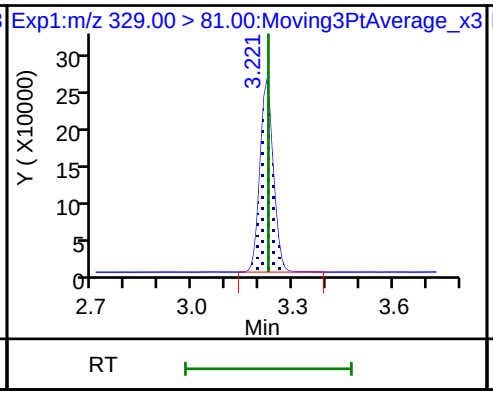
6 Perfluorobutanesulfonic acid



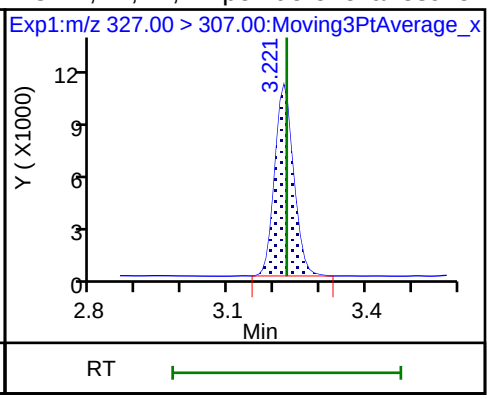
6 Perfluorobutanesulfonic acid



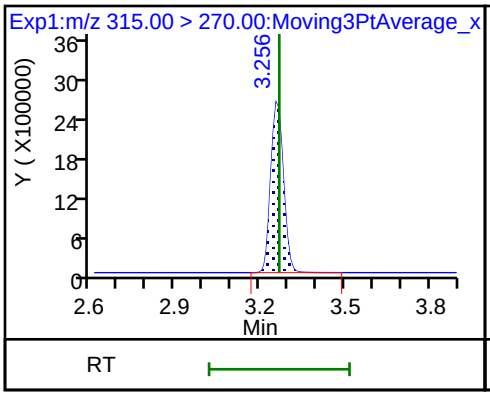
D 7 M2-4:2 FTS



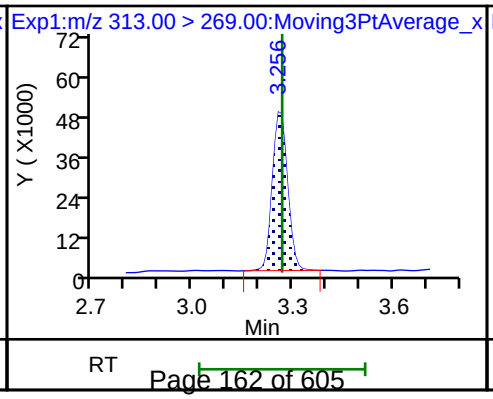
8 1H,1H,2H,2H-perfluorohexanesulfo



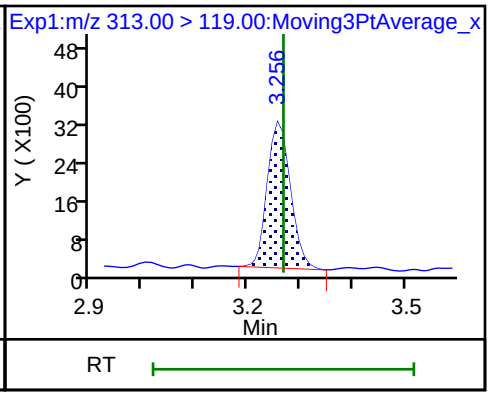
D 11 13C2 PFHxA



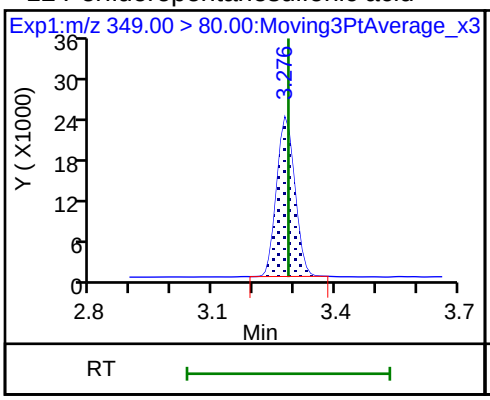
10 Perfluorohexanoic acid



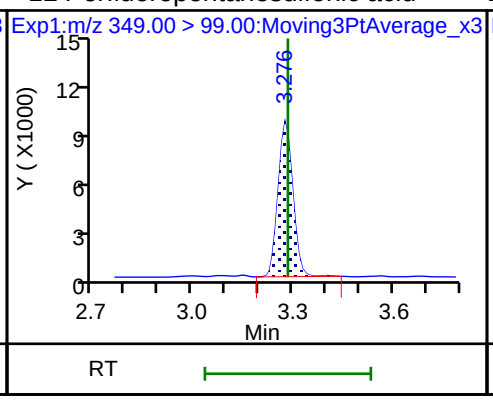
10 Perfluorohexanoic acid



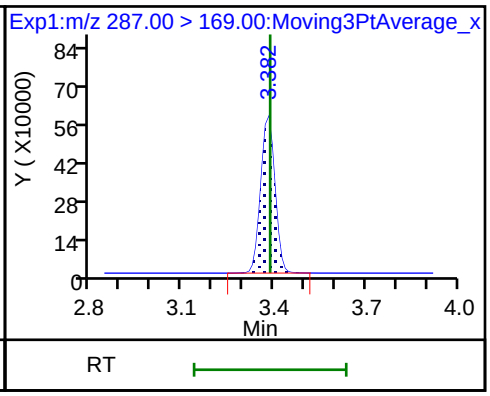
12 Perfluoropentanesulfonic acid



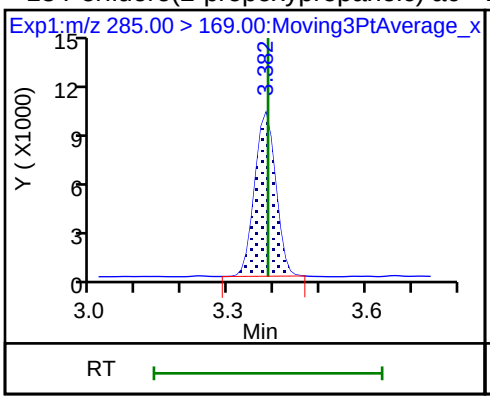
12 Perfluoropentanesulfonic acid



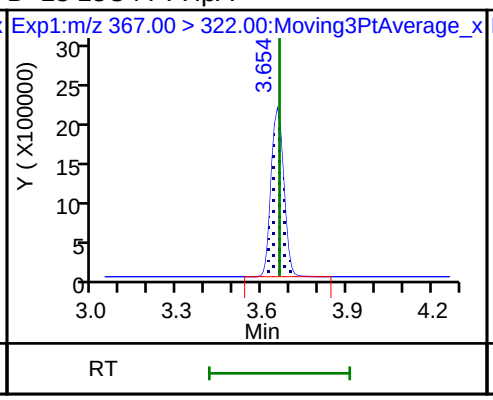
D 14 13C3 HFPO-DA



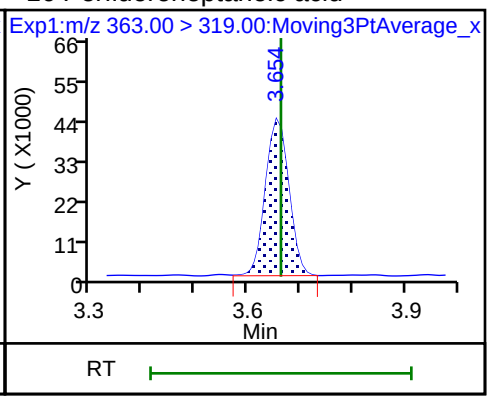
13 Perfluoro(2-propoxypropanoic) ac



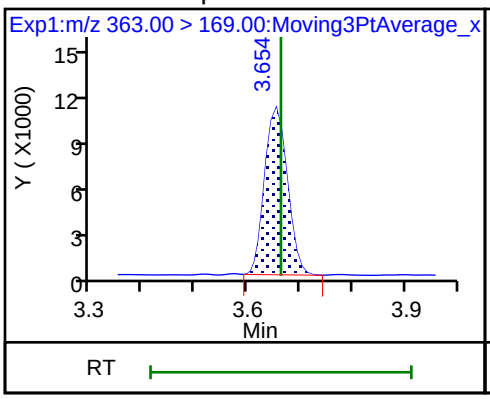
D 18 13C4 PFHpA



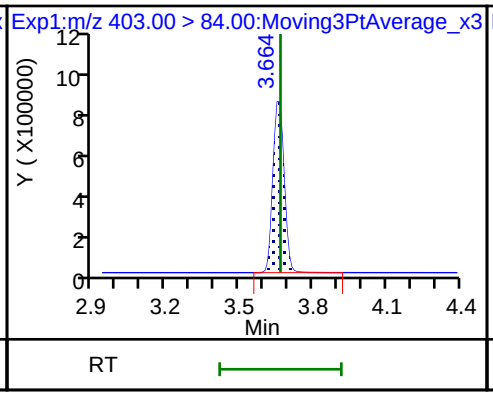
16 Perfluoroheptanoic acid



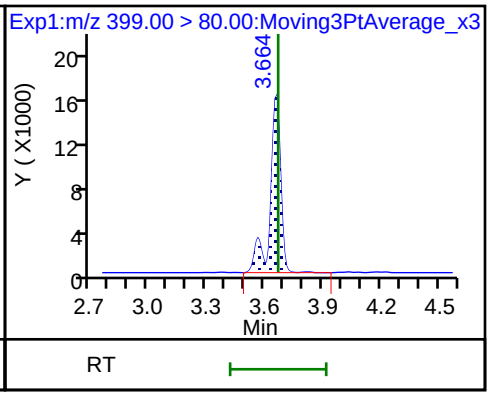
16 Perfluoroheptanoic acid



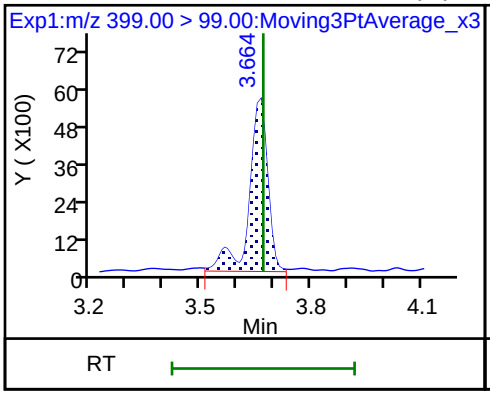
D 17 18O2 PFHxS



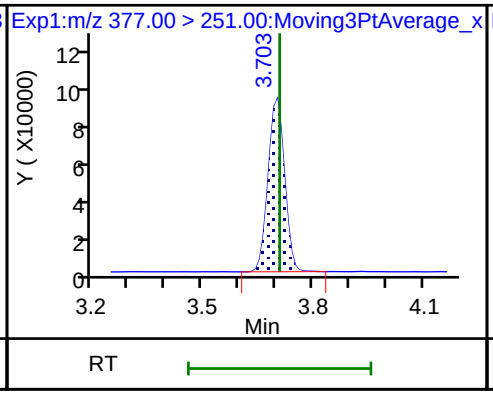
15 Perfluorohexanesulfonic acid



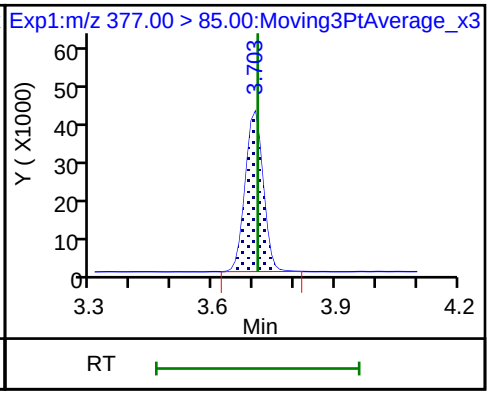
15 Perfluorohexanesulfonic acid (M)



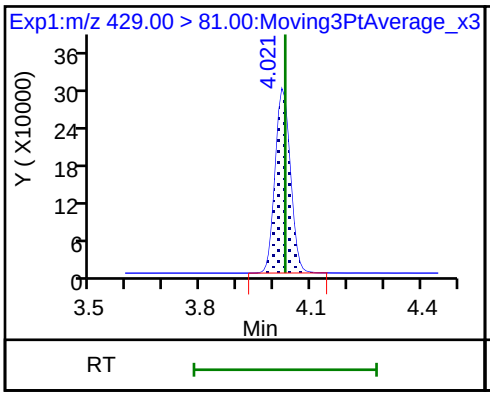
19 DONA



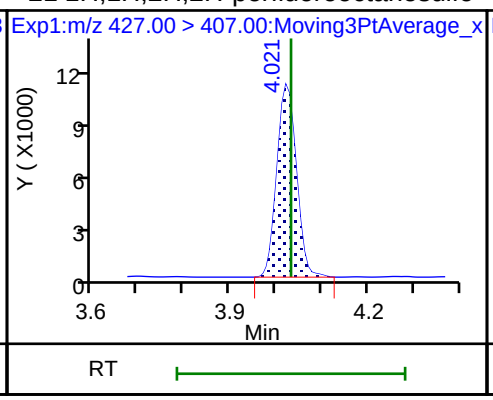
19 DONA



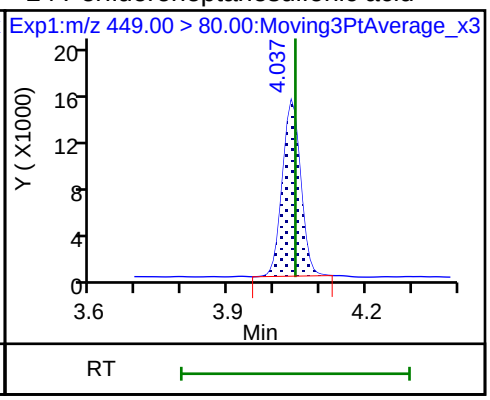
D 20 M2-6:2 FTS



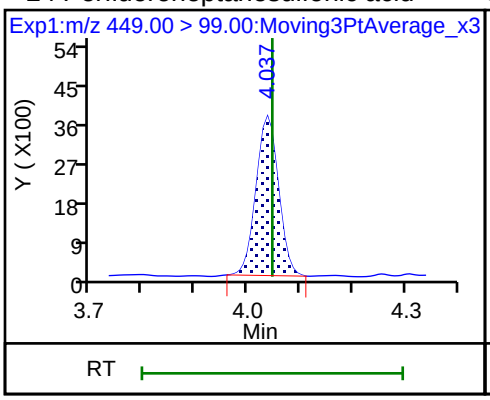
21 1H,1H,2H,2H-perfluorooctanesulfo



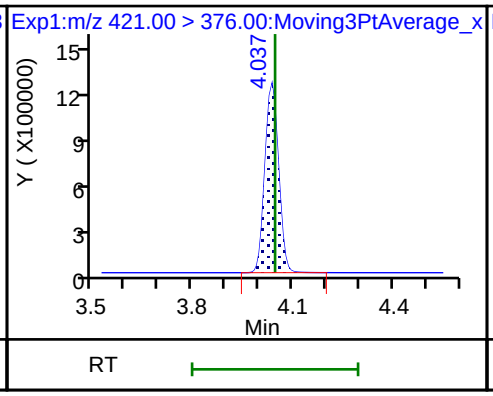
24 Perfluoroheptanesulfonic acid



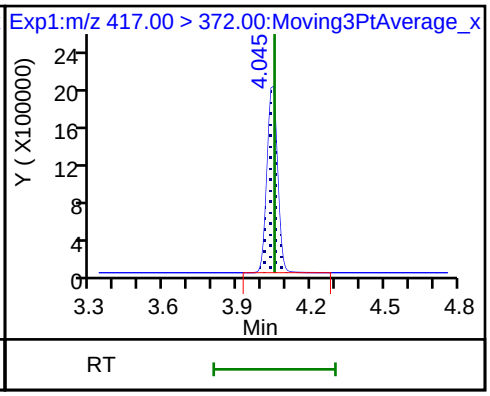
24 Perfluoroheptanesulfonic acid



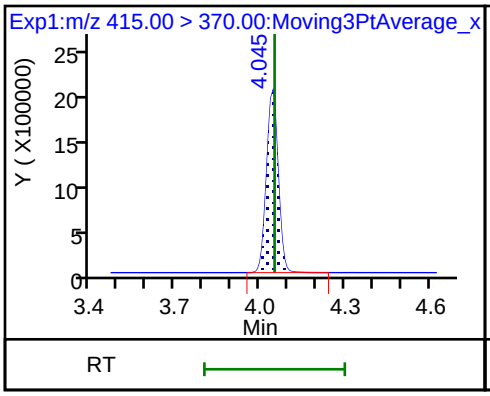
$ 26 13C8 PFOA



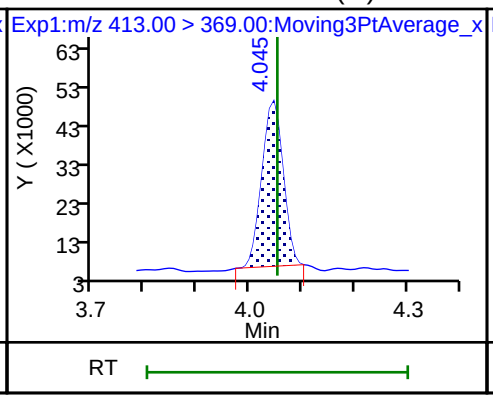
D 25 13C4 PFOA



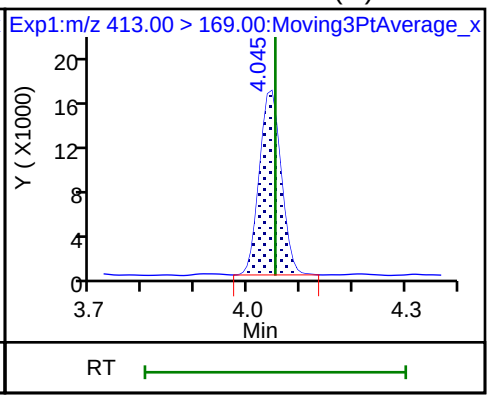
* 23 13C2 PFOA



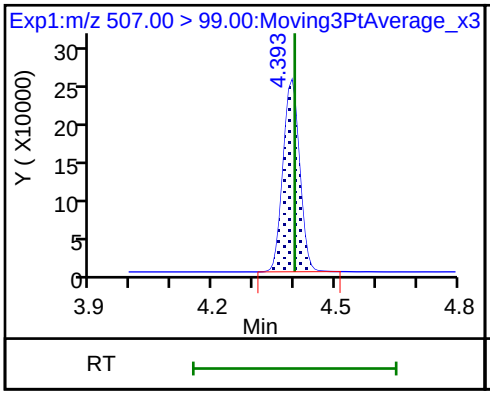
22 Perfluorooctanoic acid (M)



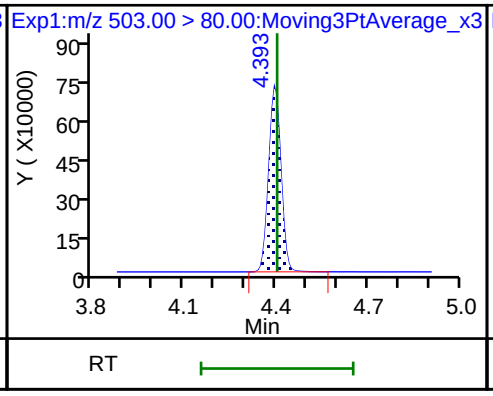
22 Perfluorooctanoic acid (M)



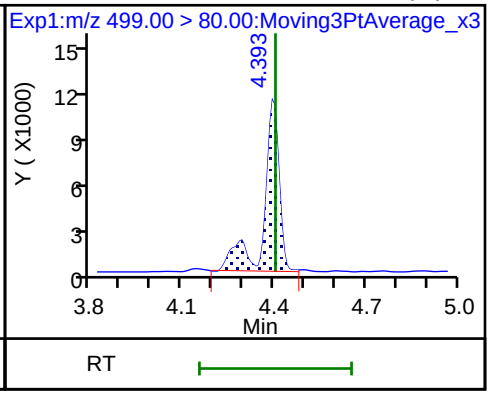
$ 28 13C8 PFOS



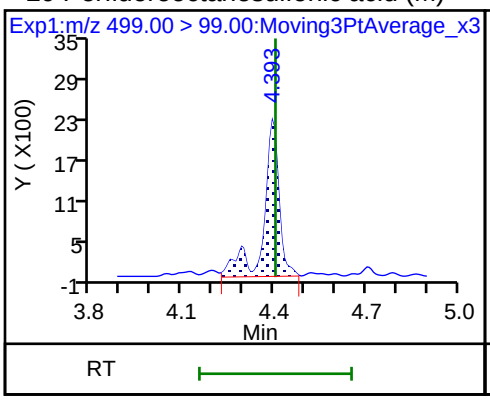
D 27 13C4 PFOS



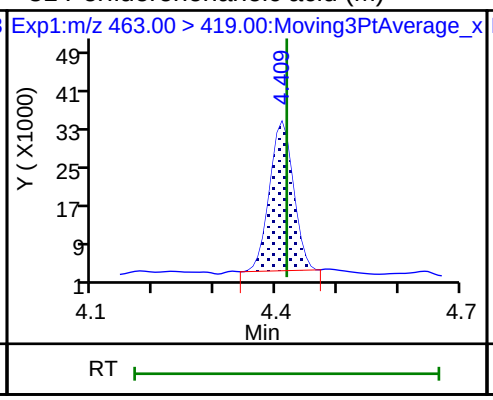
29 Perfluorooctanesulfonic acid (M)



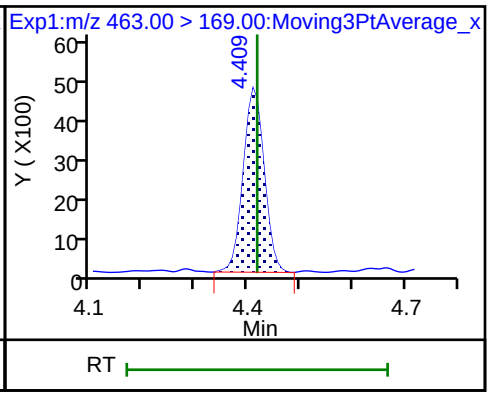
29 Perfluorooctanesulfonic acid (M)



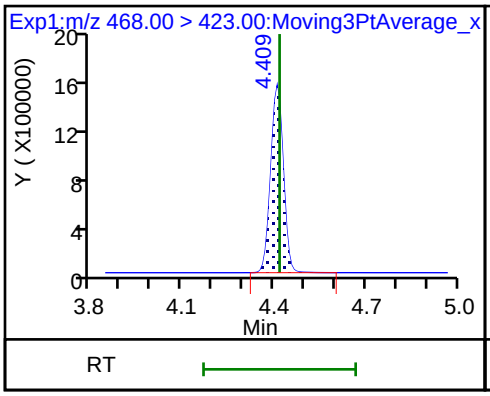
31 Perfluorononanoic acid (M)



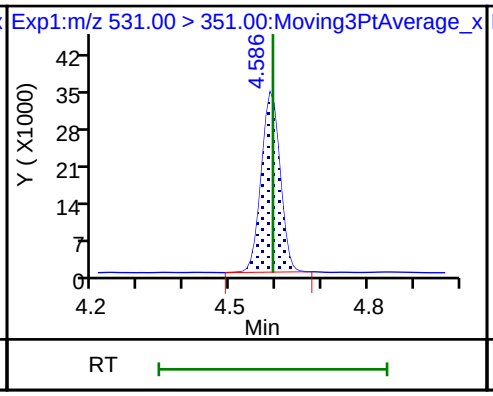
31 Perfluorononanoic acid



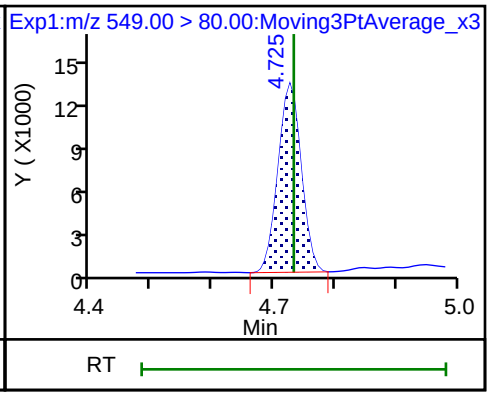
D 30 13C5 PFNA



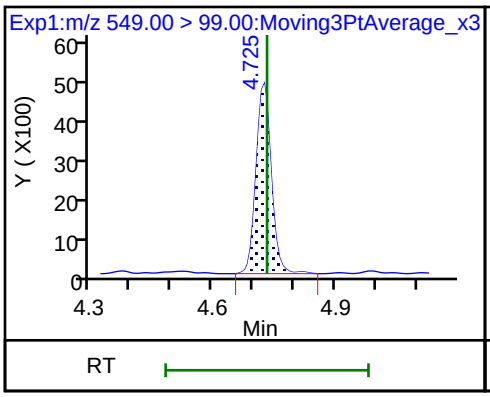
32 9-Chlorohexadecafluoro-3-oxanona



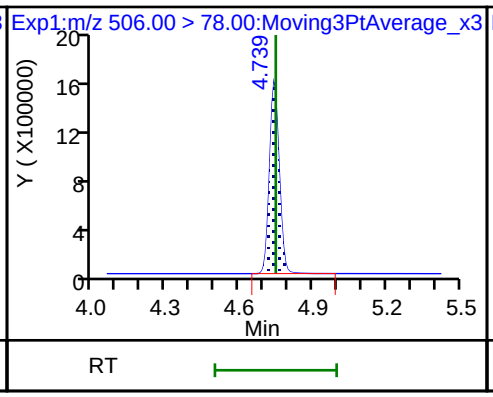
35 Perfluorononanesulfonic acid



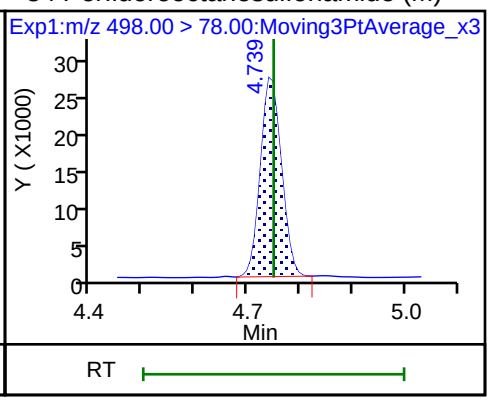
35 Perfluorononanesulfonic acid



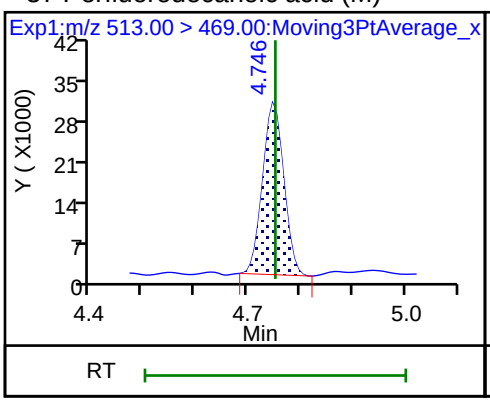
D 33 13C8 FOSA



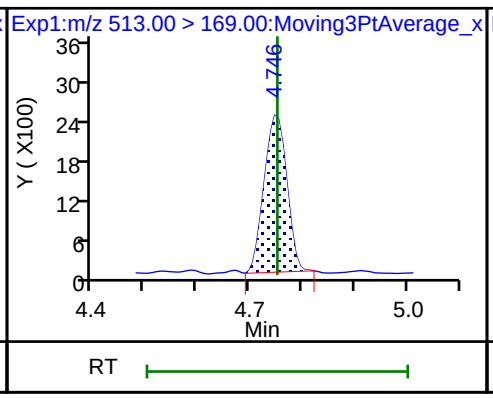
34 Perfluorooctanesulfonamide (M)



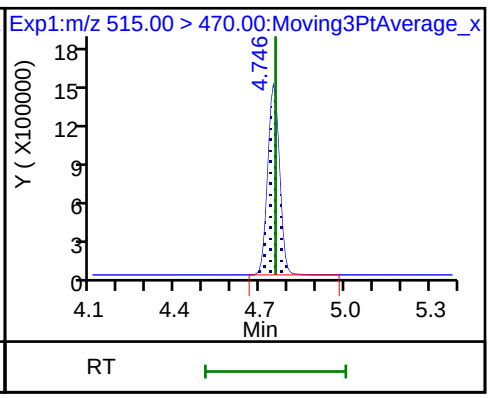
37 Perfluorodecanoic acid (M)



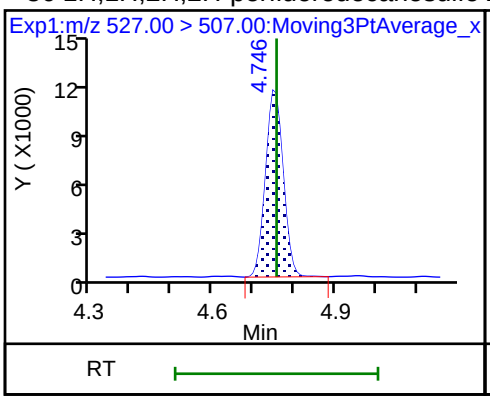
37 Perfluorodecanoic acid



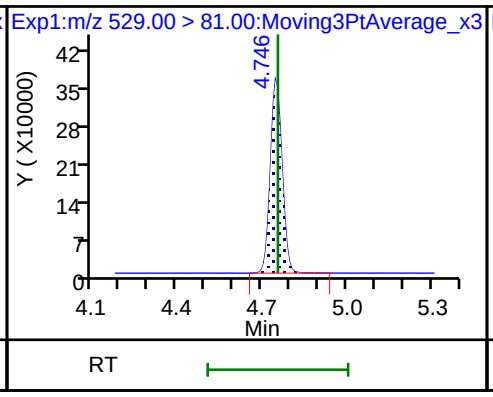
D 39 13C2 PFDA



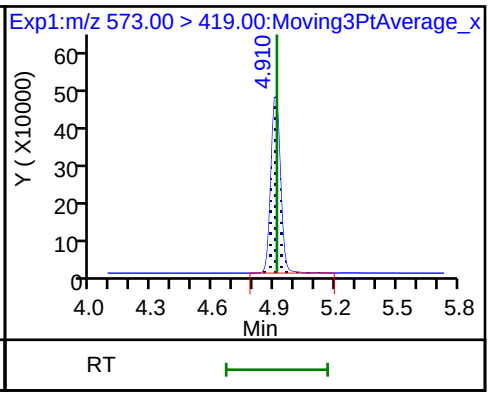
36 1H,1H,2H,2H-perfluorodecanesulfo



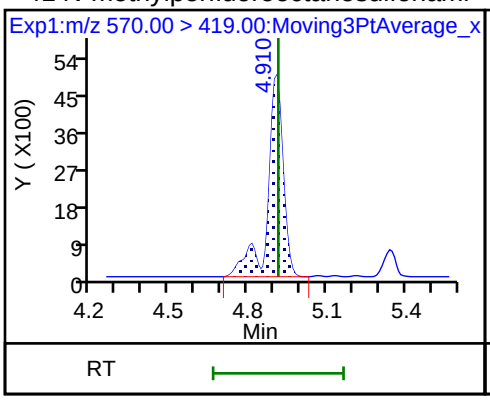
D 38 M2-8:2 FTS



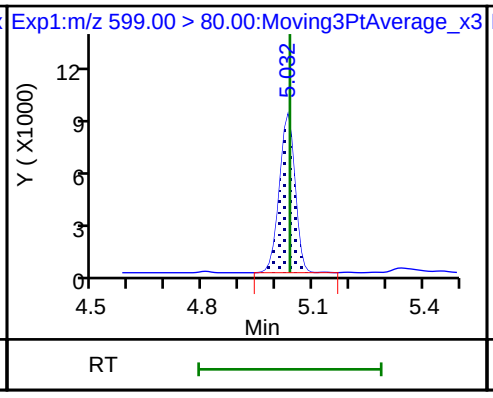
D 40 d3-NMeFOSAA



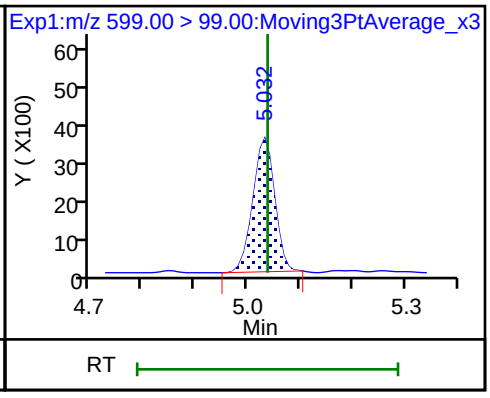
41 N-methylperfluorooctanesulfonami



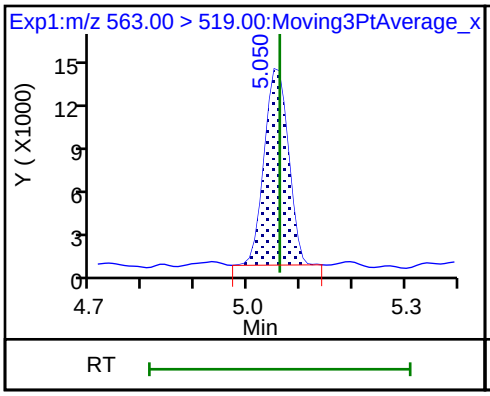
42 Perfluorodecanesulfonic acid



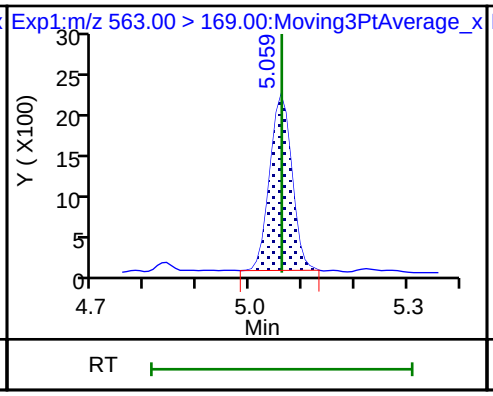
42 Perfluorodecanesulfonic acid



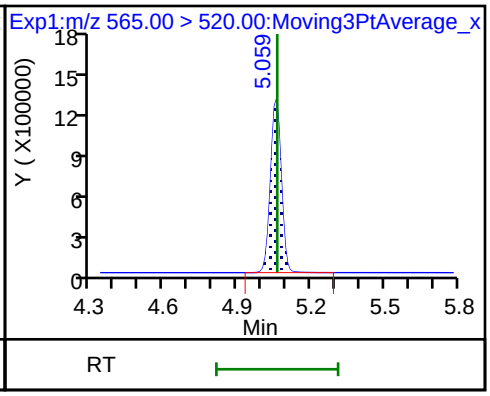
45 Perfluoroundecanoic acid



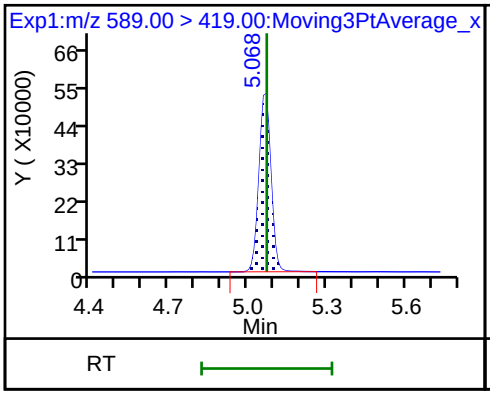
45 Perfluoroundecanoic acid



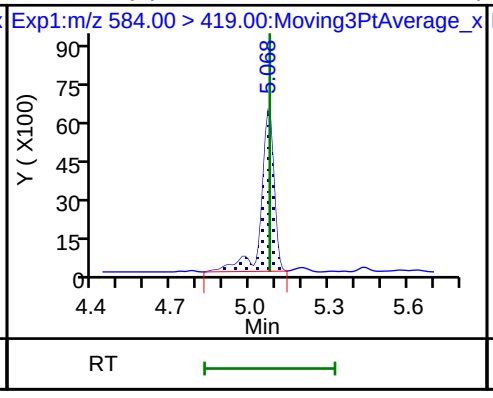
D 43 13C2 PFUnA



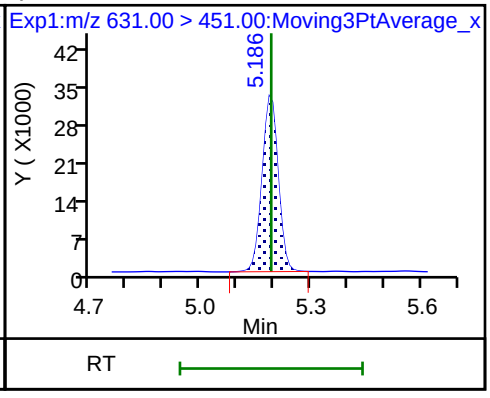
D 44 d5-NEtFOSAA



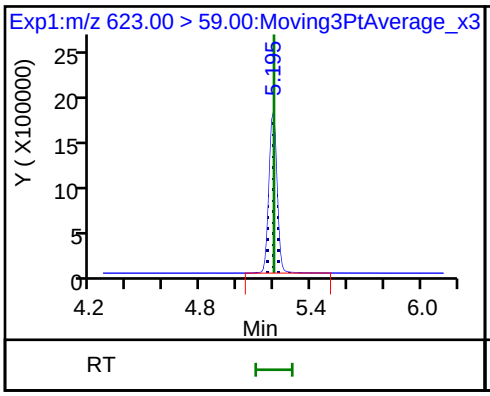
46 N-ethylperfluorooctanesulfonamid (M)



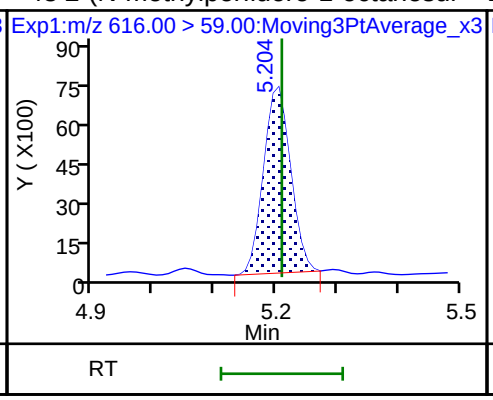
51 11-Chloroeicosafluoro-3-oxaundec



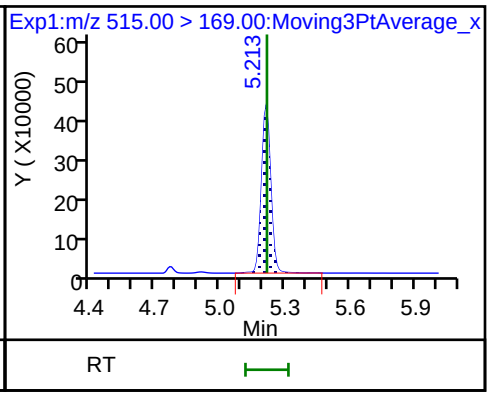
D 47 d7-N-MeFOSE-M



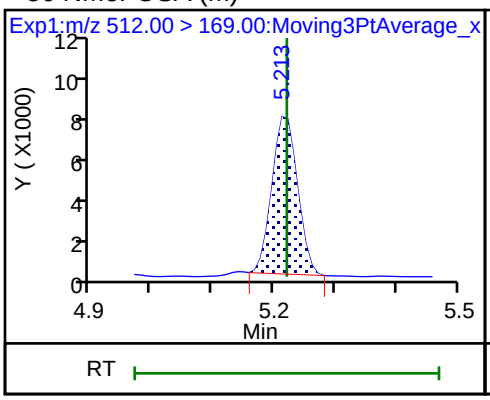
48 2-(N-methylperfluoro-1-octanesul



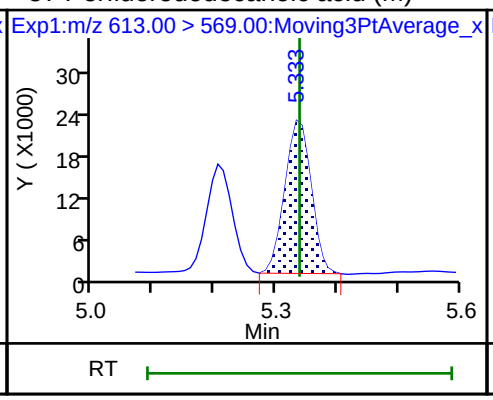
D 49 d-N-MeFOSA-M



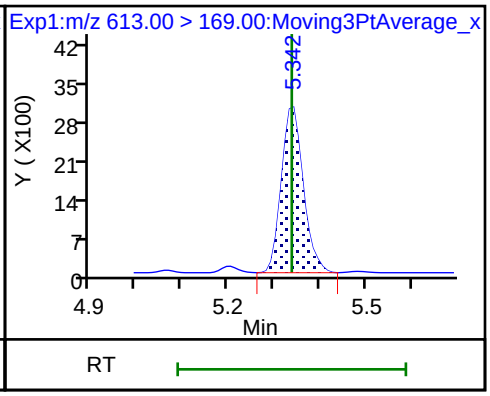
50 NMeFOSA (M)



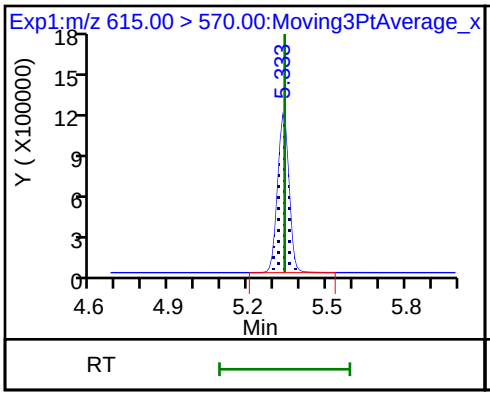
57 Perfluorododecanoic acid (M)



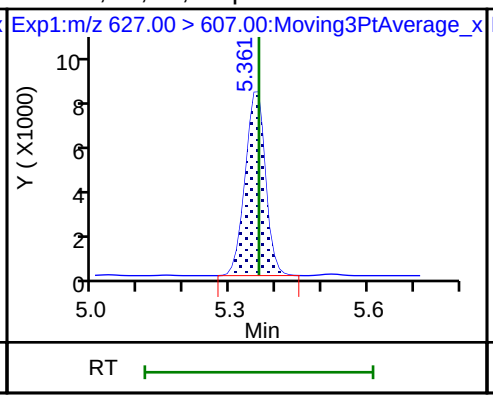
57 Perfluorododecanoic acid



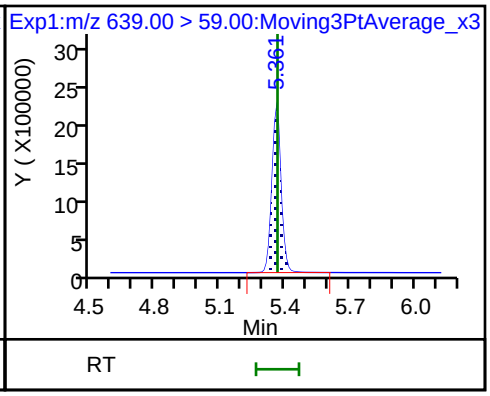
D 56 13C2 PFDoA



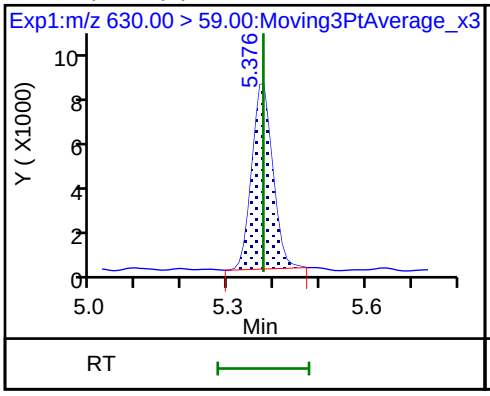
58 1H,1H,2H,2H-perfluorododecanesul



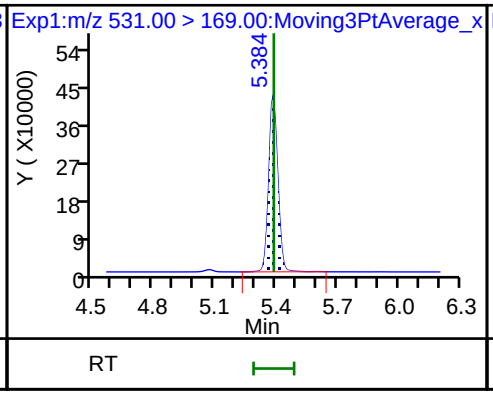
D 52 d9-N-EtFOSE-M



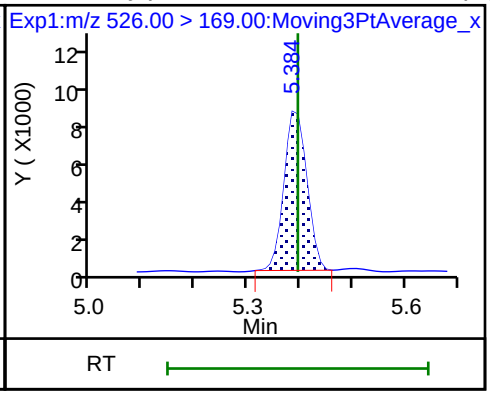
53 2-(N-ethylperfluoro-1-octanesulf



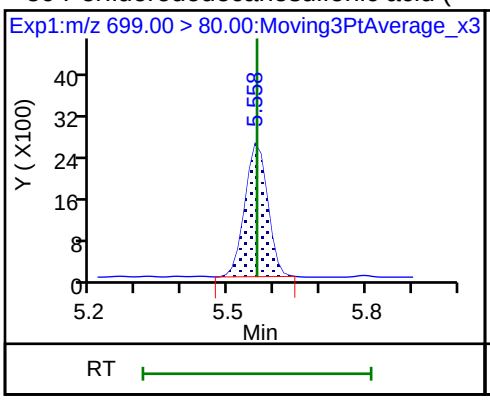
D 54 d-N-EtFOSA-M



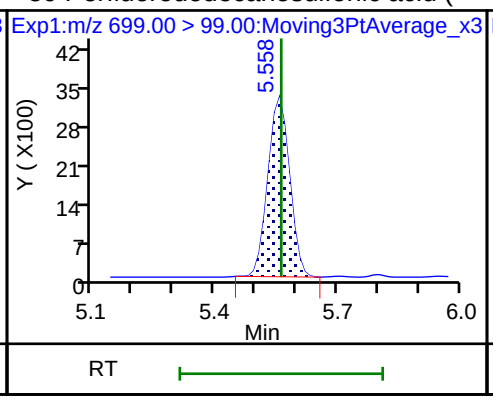
55 N-ethylperfluoro-1-octanesulfona (M)



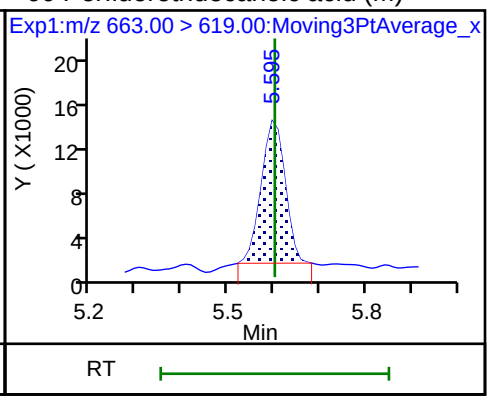
59 Perfluorododecanesulfonic acid (



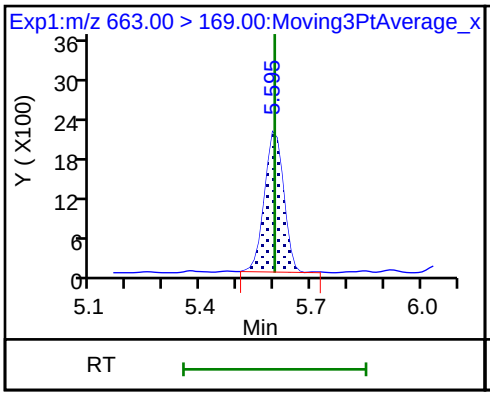
59 Perfluorododecanesulfonic acid (



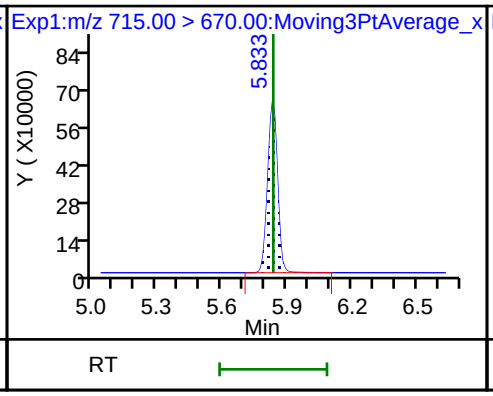
60 Perfluorotridecanoic acid (M)



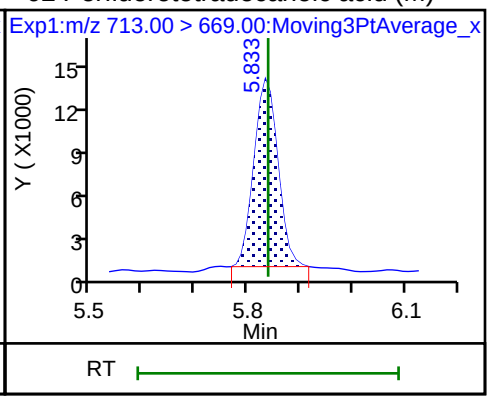
60 Perfluorotridecanoic acid



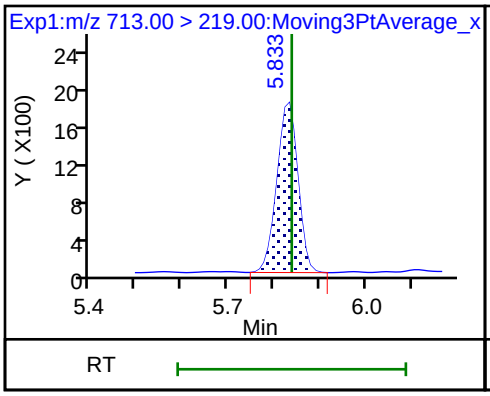
D 61 13C2 PFTeDA



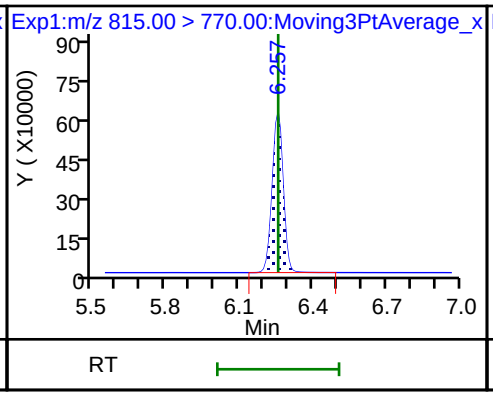
62 Perfluorotetradecanoic acid (M)



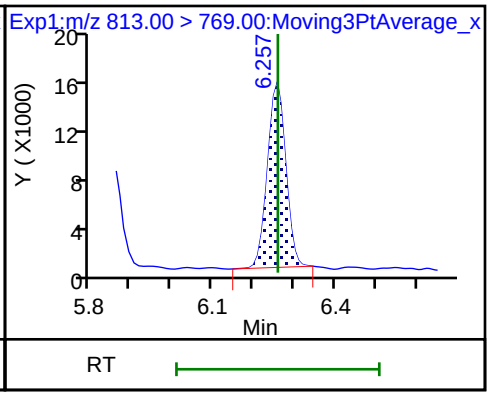
62 Perfluorotetradecanoic acid



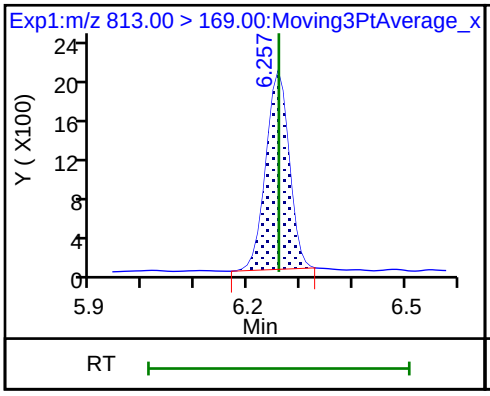
D 64 13C2 PFHxDA



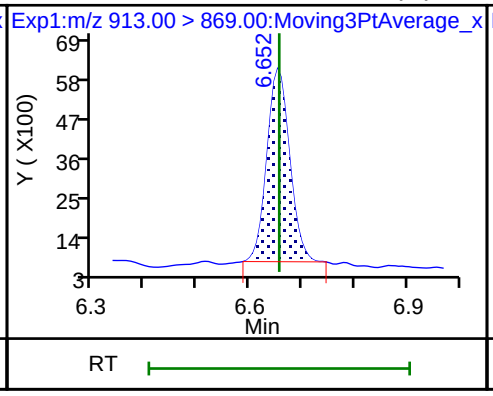
63 Perfluorohexadecanoic acid



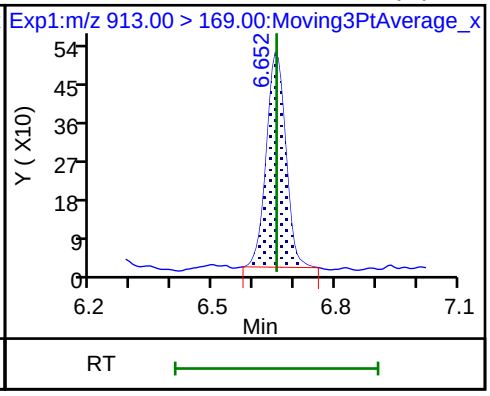
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid (M)



65 Perfluorooctadecanoic acid (M)



Eurofins TestAmerica, Sacramento

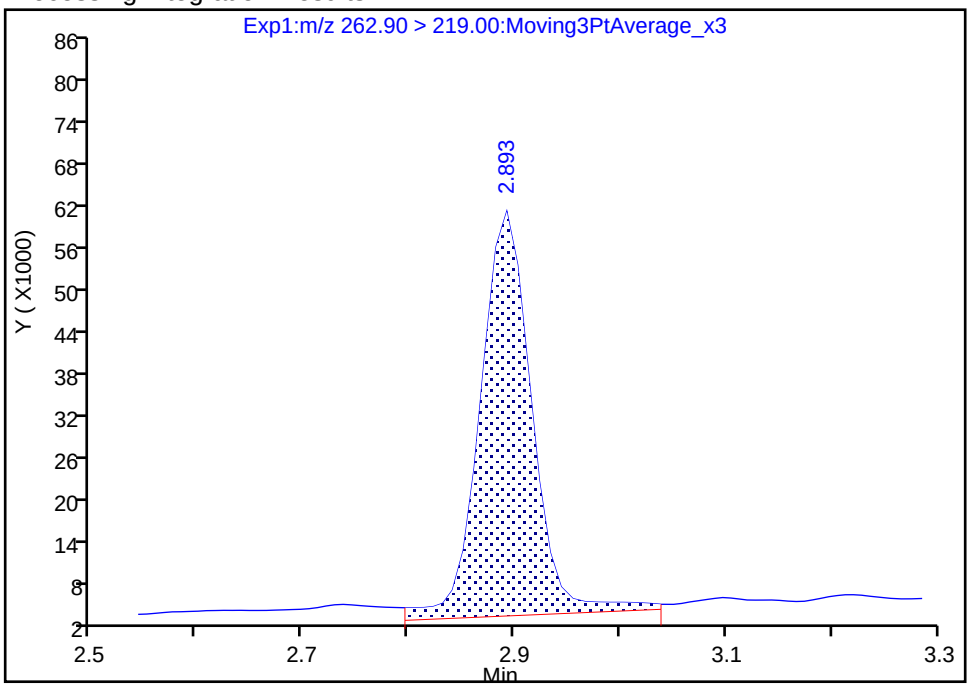
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

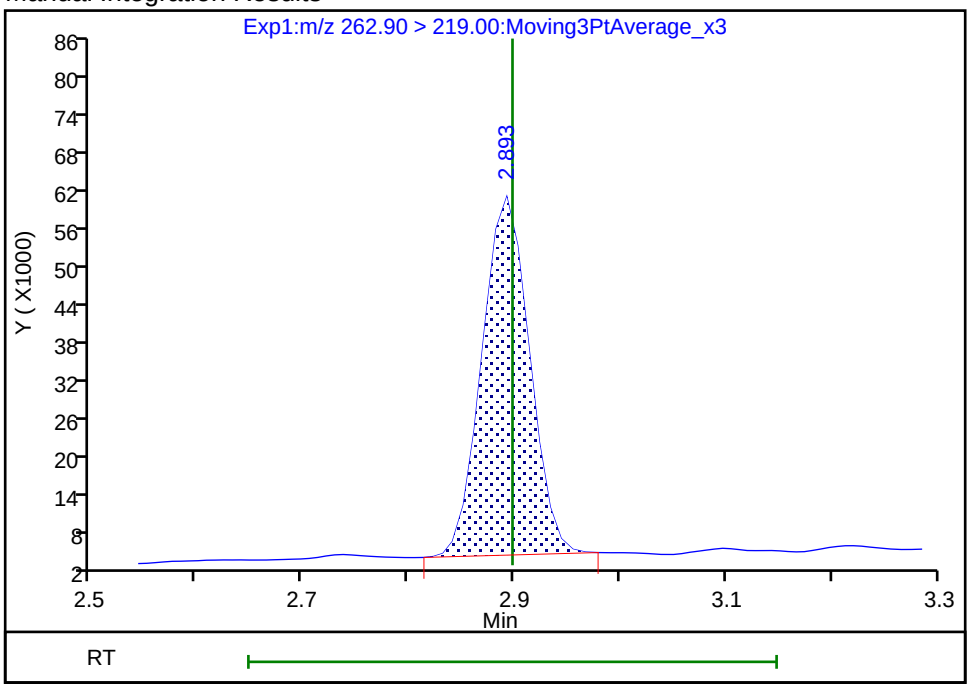
Processing Integration Results

RT: 2.89
Area: 197425
Amount: 0.049151
Amount Units: ng/ml



Manual Integration Results

RT: 2.89
Area: 176111
Amount: 0.051076
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:27:34
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

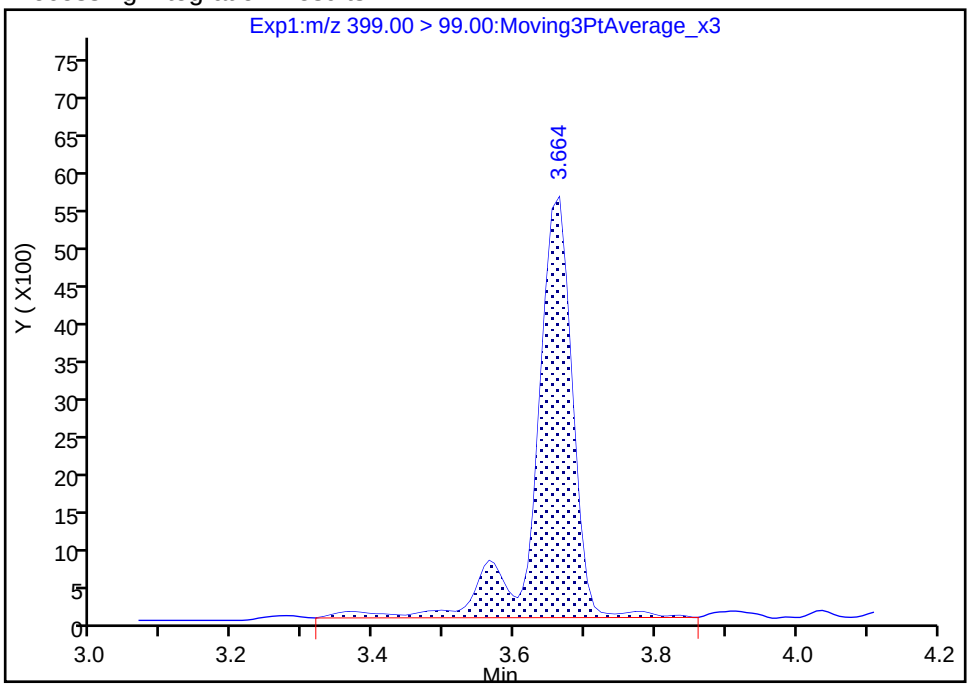
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

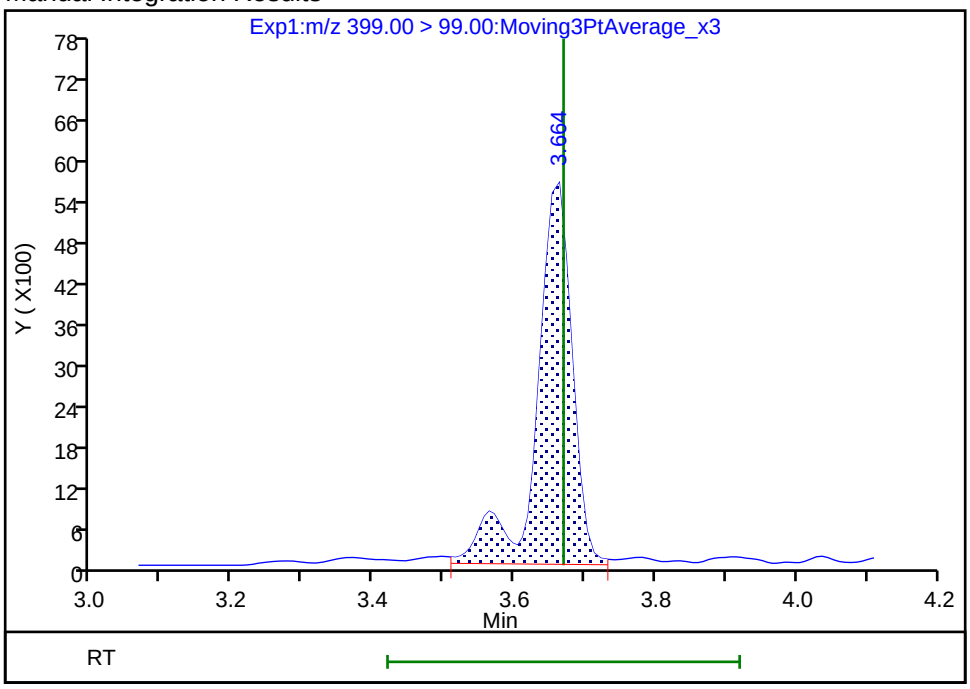
Processing Integration Results

RT: 3.66
Area: 20286
Amount: 0.047704
Amount Units: ng/ml



Manual Integration Results

RT: 3.66
Area: 19559
Amount: 0.047704
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:28:50
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

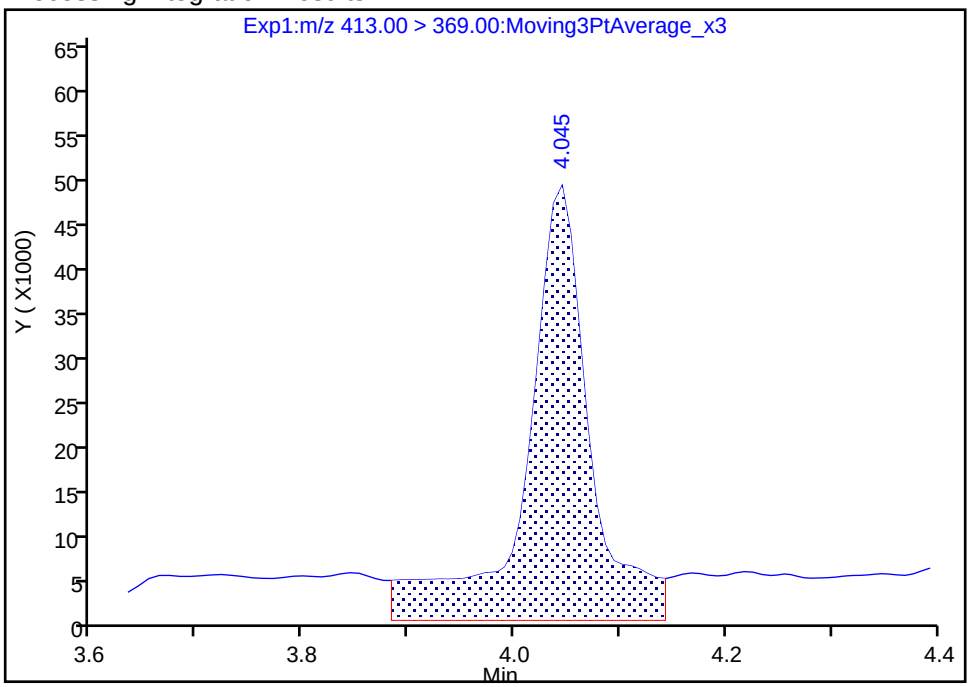
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

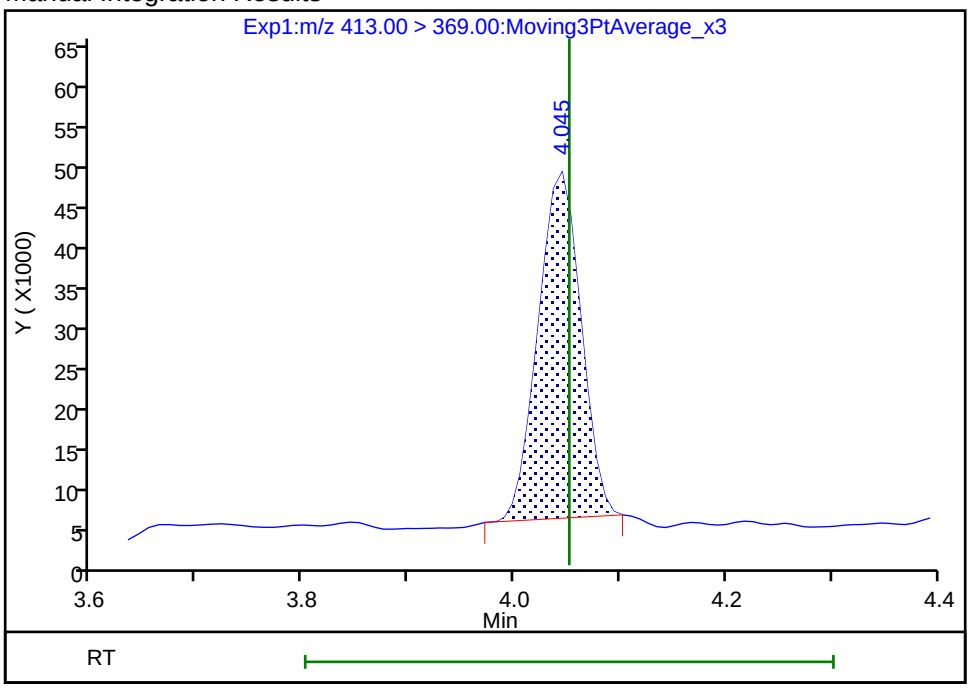
Processing Integration Results

RT: 4.05
Area: 204417
Amount: 0.056993
Amount Units: ng/ml



Manual Integration Results

RT: 4.05
Area: 120876
Amount: 0.049319
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:28:11
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

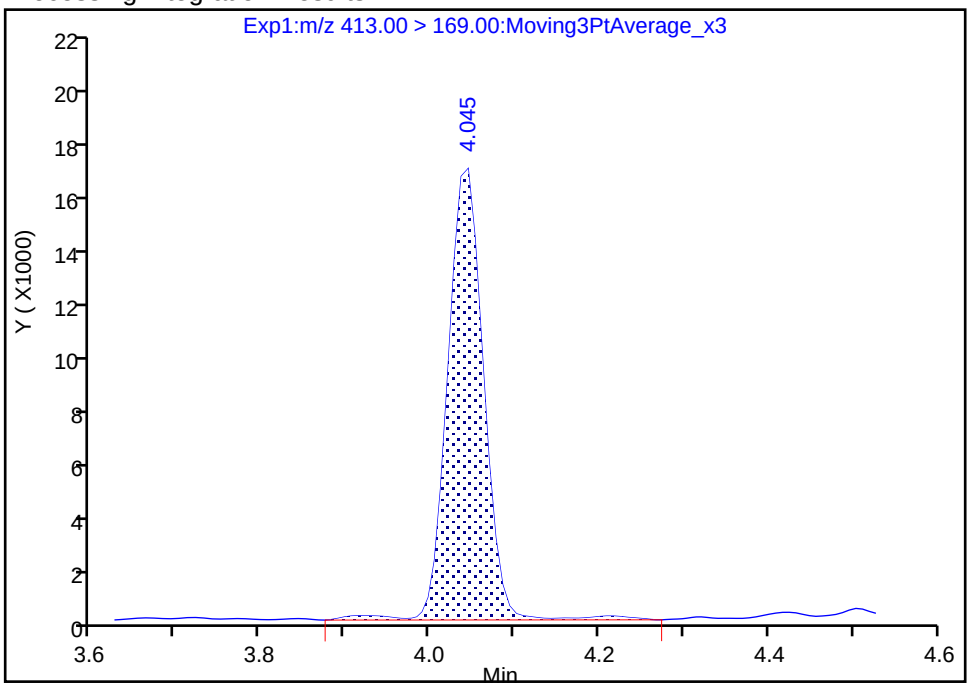
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

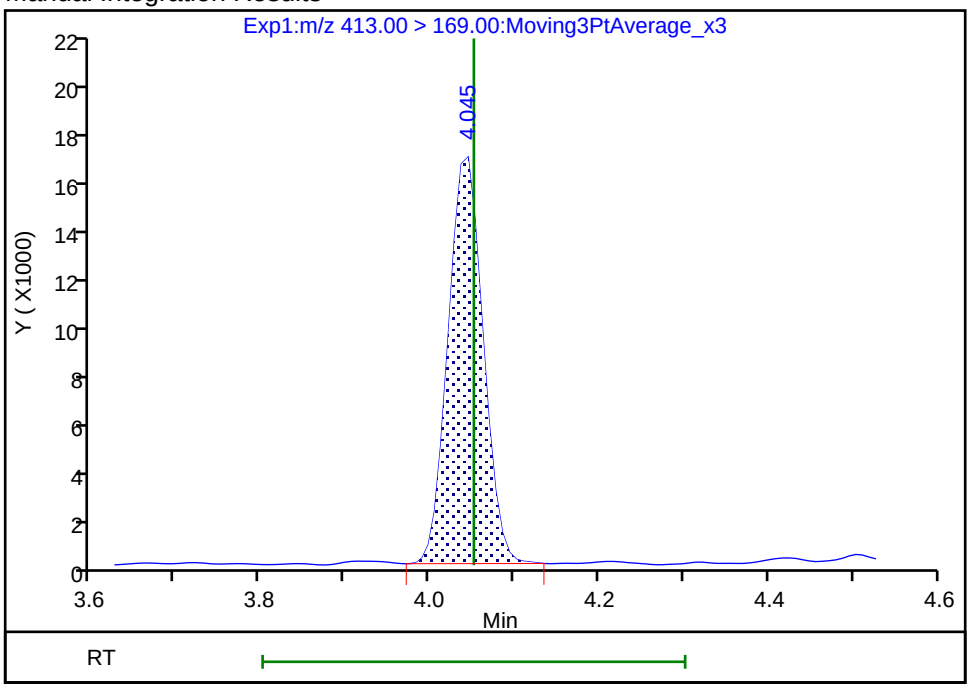
Processing Integration Results

RT: 4.05
Area: 48876
Amount: 0.056993
Amount Units: ng/ml



Manual Integration Results

RT: 4.05
Area: 47187
Amount: 0.049319
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:29:19
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

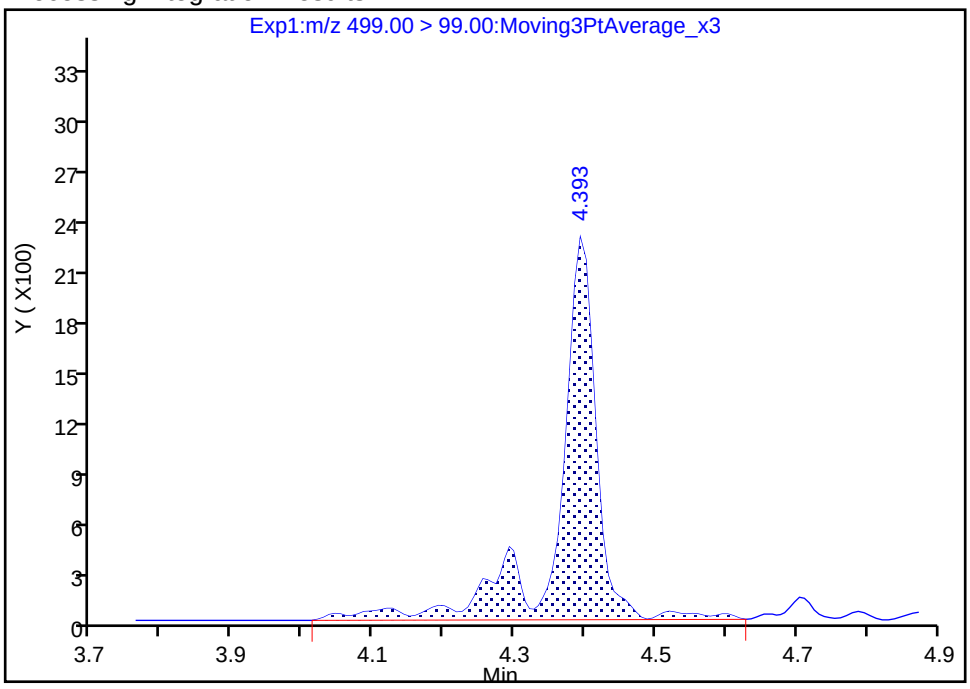
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d				
Injection Date:	04-Jun-2020 12:06:02	Instrument ID:	A15		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

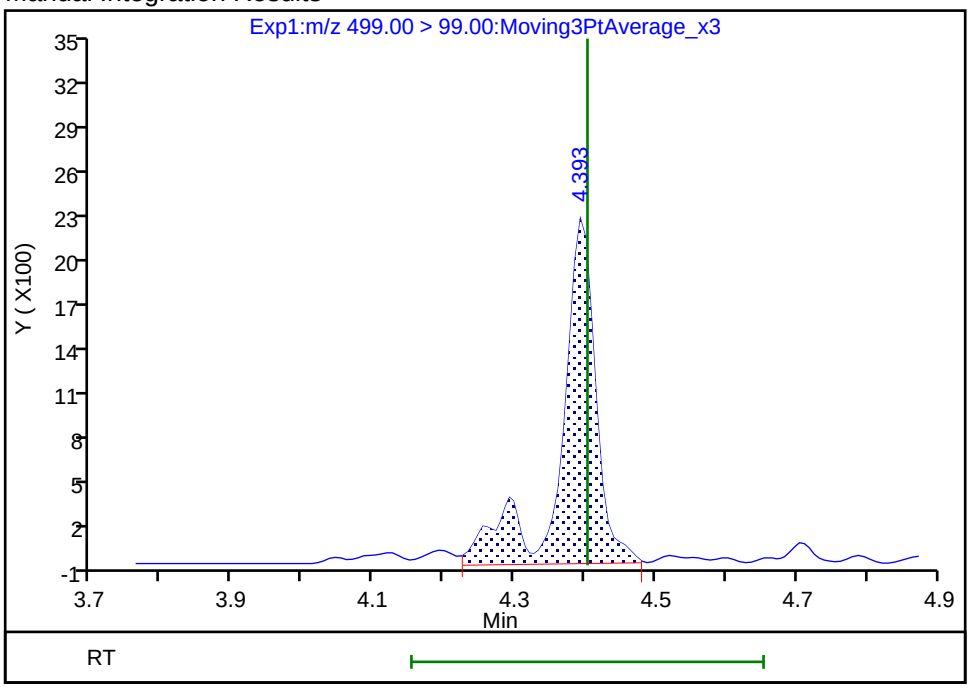
Processing Integration Results

RT: 4.39
Area: 8563
Amount: 0.045902
Amount Units: ng/ml



Manual Integration Results

RT: 4.39
Area: 7850
Amount: 0.044557
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:28:35
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

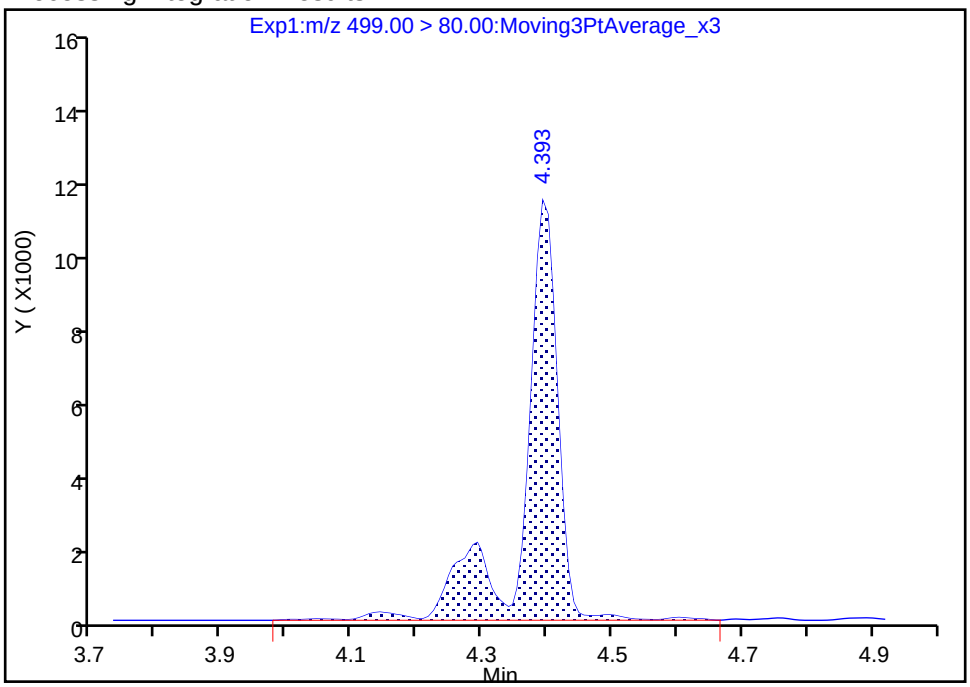
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

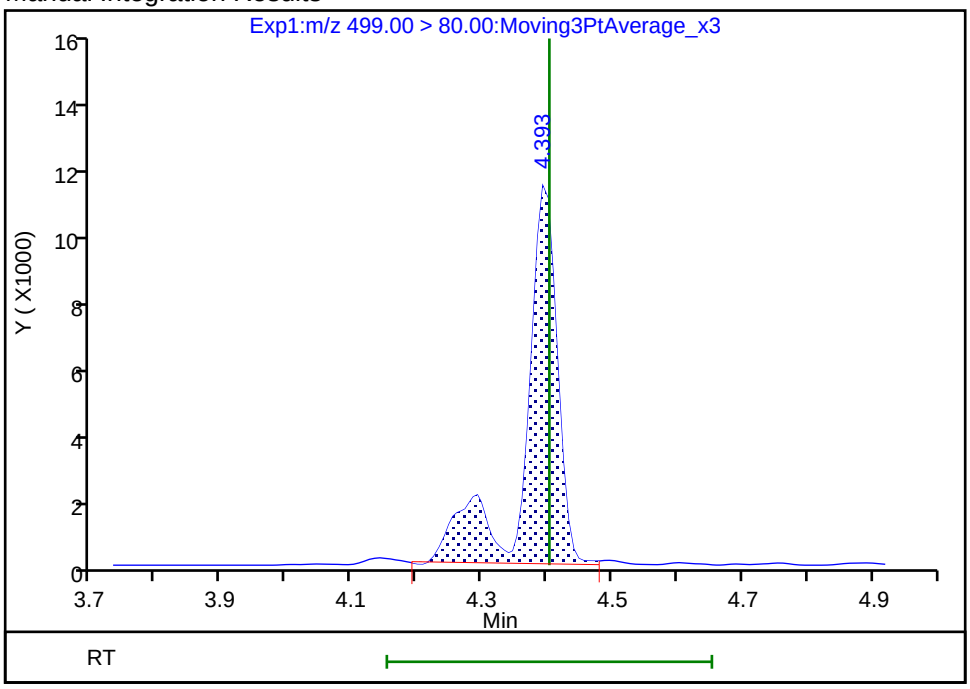
Processing Integration Results

RT: 4.39
Area: 39651
Amount: 0.045902
Amount Units: ng/ml



Manual Integration Results

RT: 4.39
Area: 37206
Amount: 0.044557
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:28:43
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

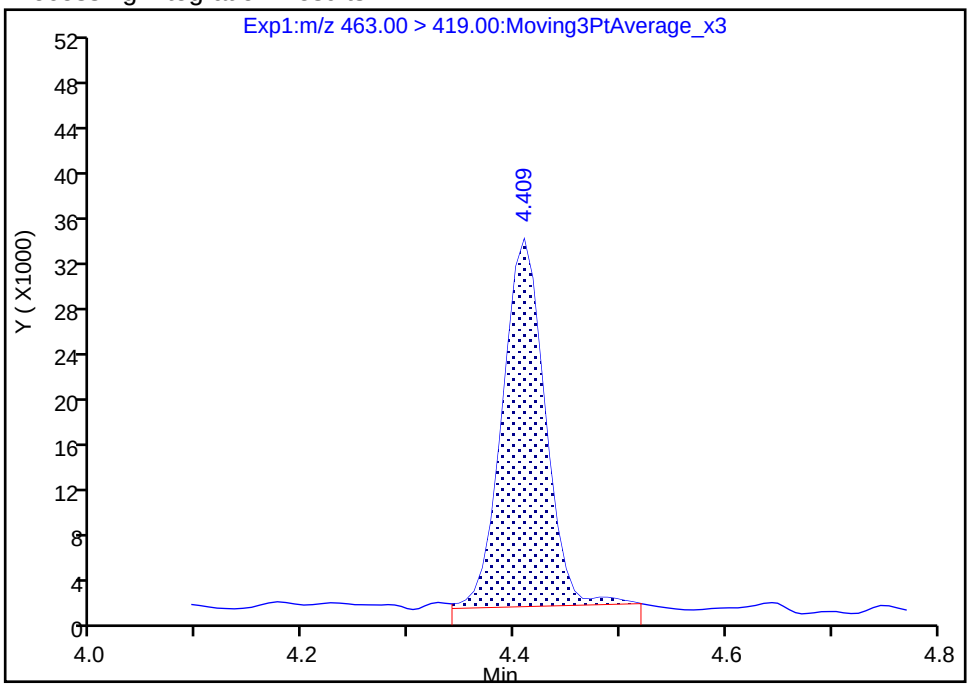
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d				
Injection Date:	04-Jun-2020 12:06:02	Instrument ID:	A15		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

31 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

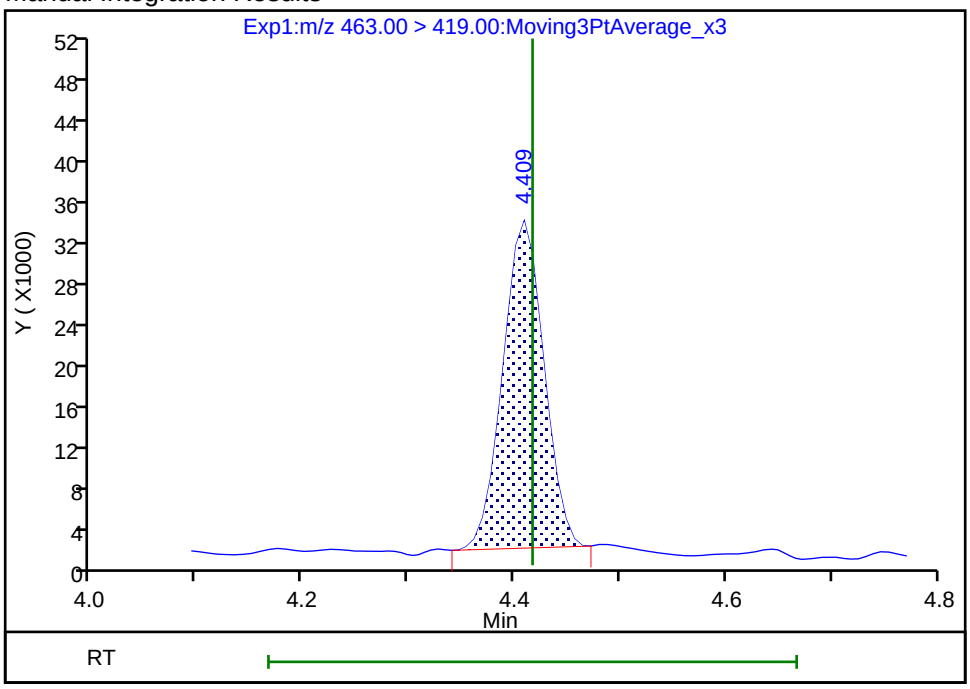
Processing Integration Results

RT: 4.41
Area: 90126
Amount: 0.050392
Amount Units: ng/ml



Manual Integration Results

RT: 4.41
Area: 85362
Amount: 0.047766
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:29:00
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

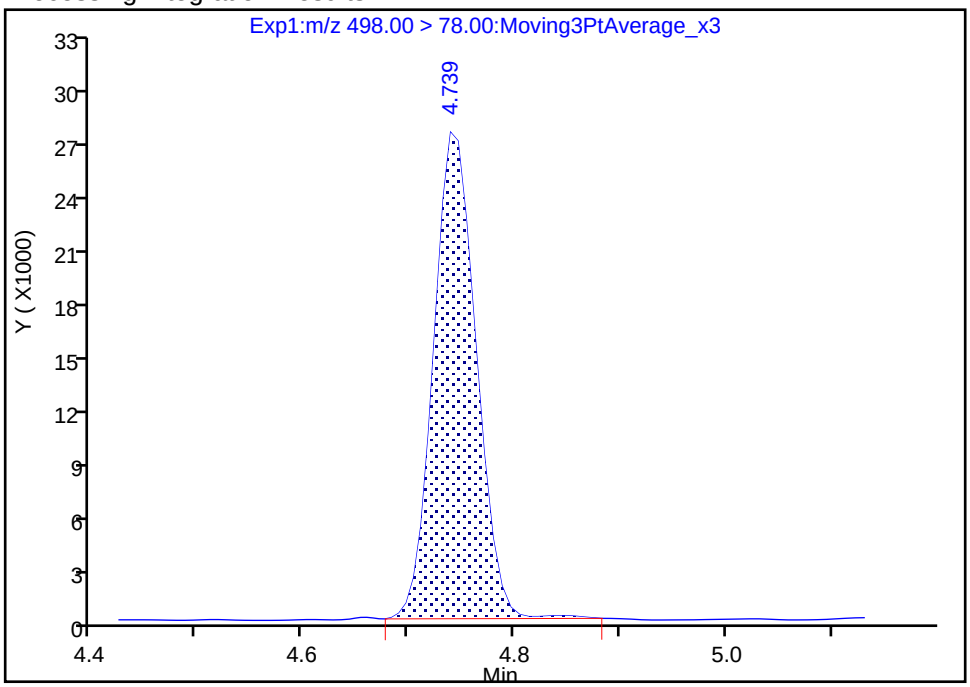
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

34 Perfluorooctanesulfonamide, CAS: 754-91-6

Signal: 1

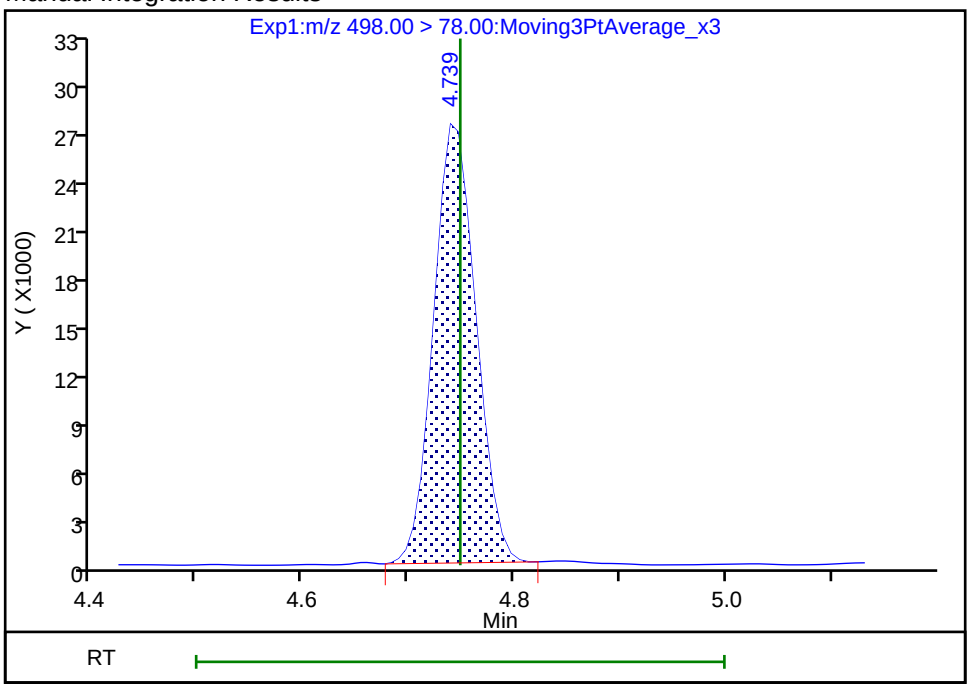
Processing Integration Results

RT: 4.74
Area: 75830
Amount: 0.049020
Amount Units: ng/ml



Manual Integration Results

RT: 4.74
Area: 74988
Amount: 0.048551
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:29:40
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

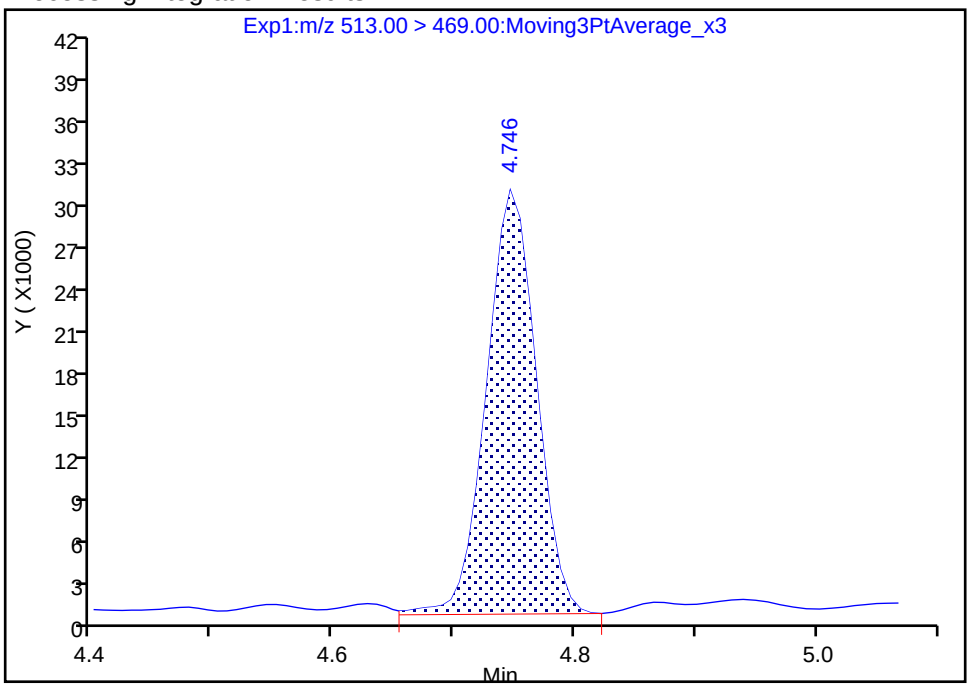
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

37 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

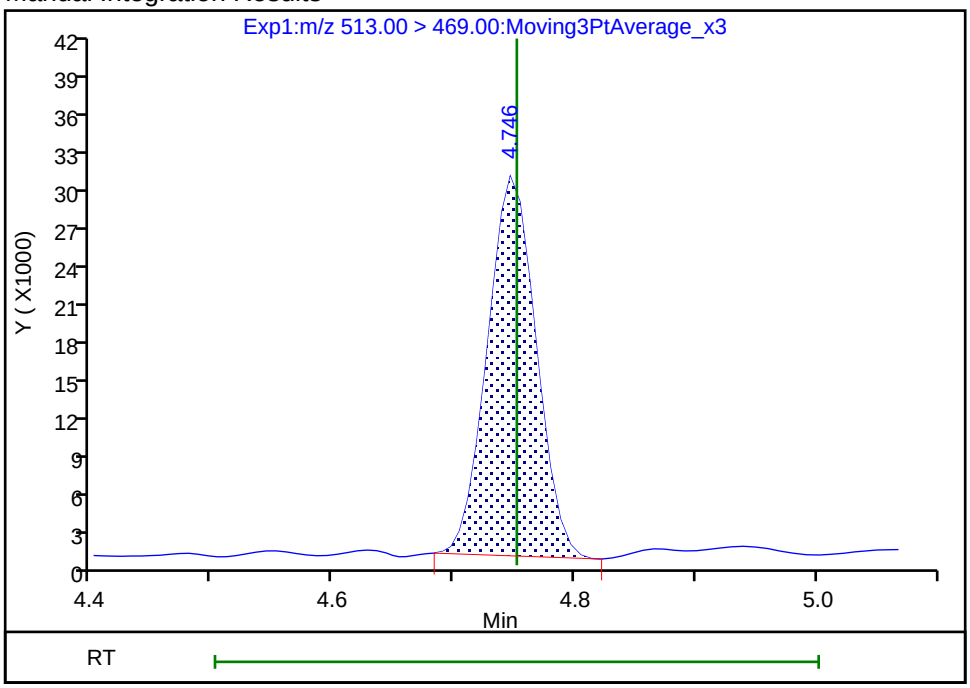
RT: 4.75
Area: 85217
Amount: 0.051121
Amount Units: ng/ml

Processing Integration Results



RT: 4.75
Area: 82296
Amount: 0.051274
Amount Units: ng/ml

Manual Integration Results



Reviewer: maxwellm, 04-Jun-2020 12:29:12
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

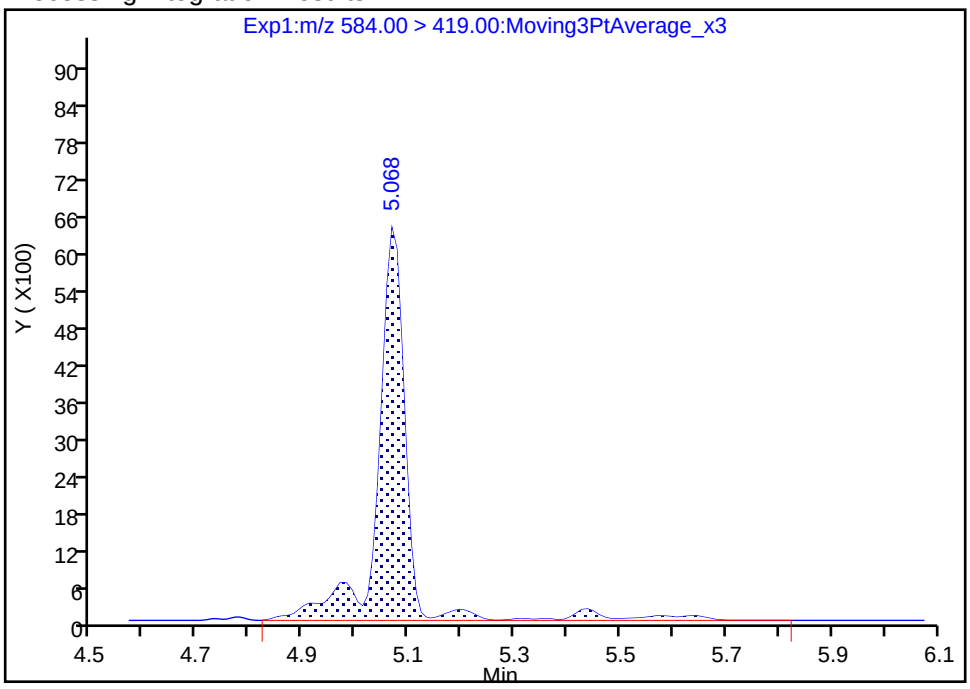
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

46 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

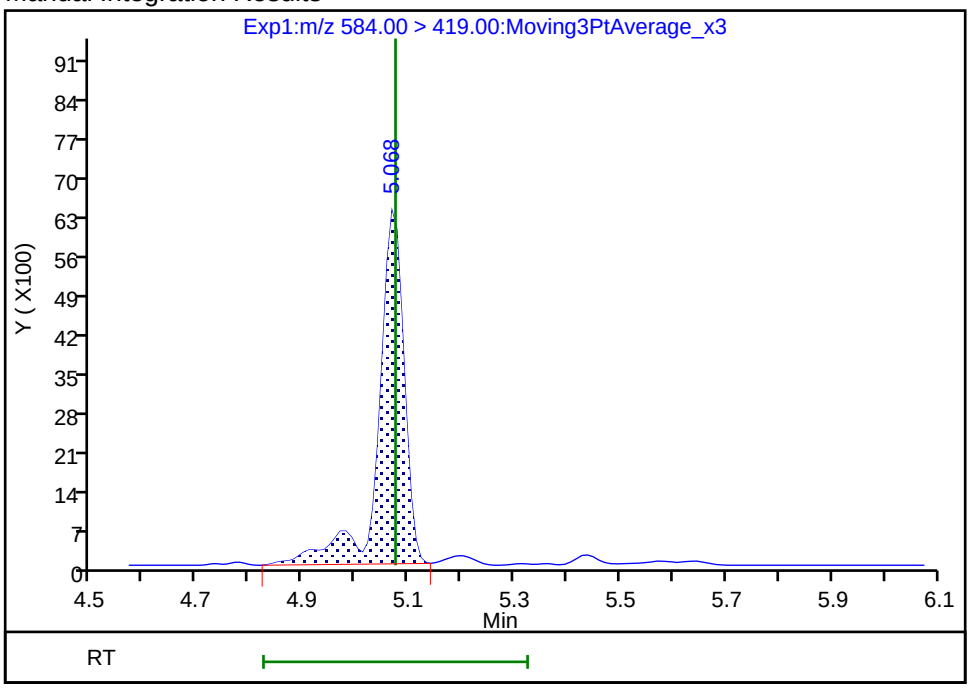
Processing Integration Results

RT: 5.07
Area: 23813
Amount: 0.050846
Amount Units: ng/ml



Manual Integration Results

RT: 5.07
Area: 21533
Amount: 0.045740
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:29:31
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

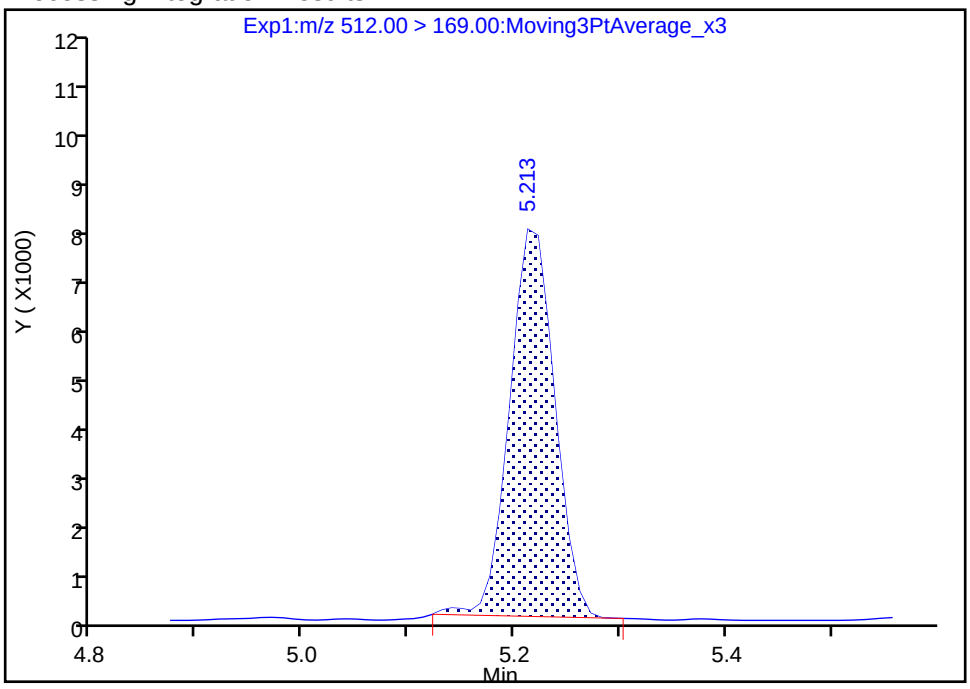
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

50 NMeFOSA, CAS: 31506-32-8

Signal: 1

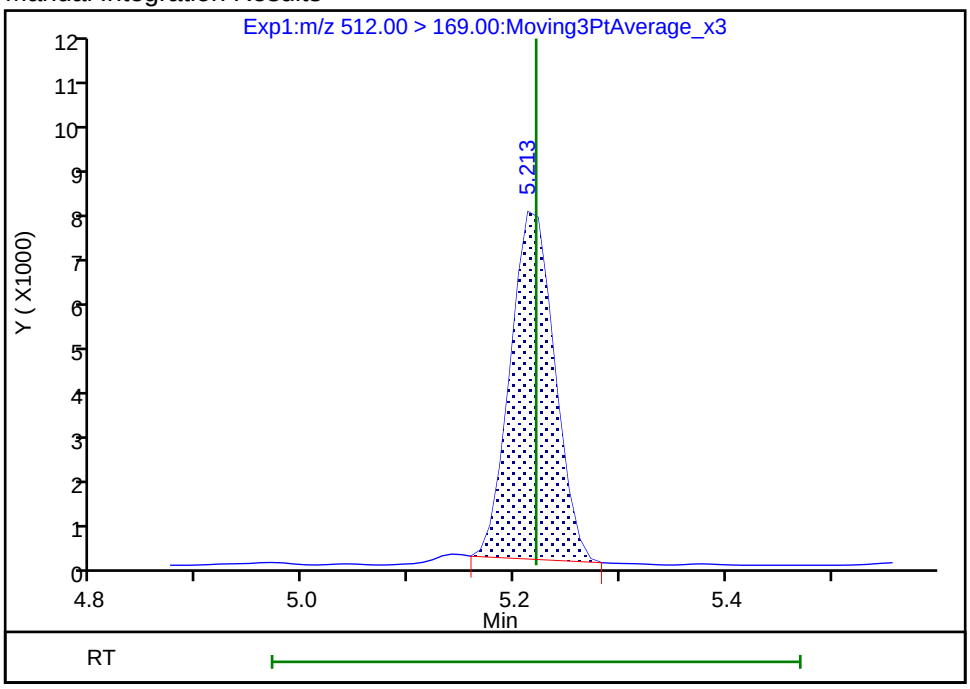
Processing Integration Results

RT: 5.21
Area: 21822
Amount: 0.049597
Amount Units: ng/ml



Manual Integration Results

RT: 5.21
Area: 21251
Amount: 0.043888
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:29:49
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

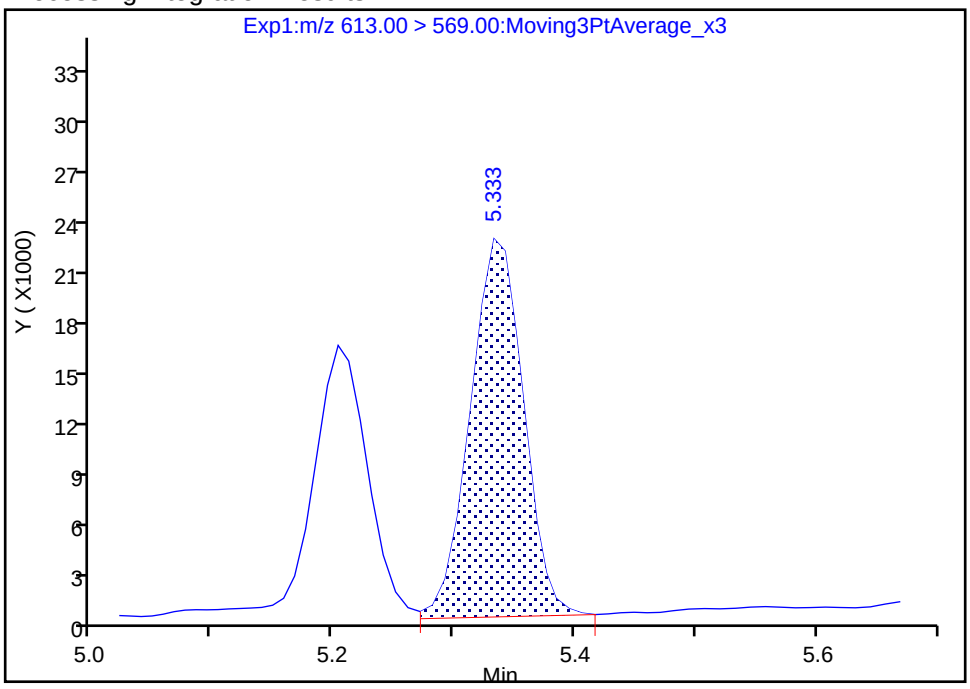
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

57 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

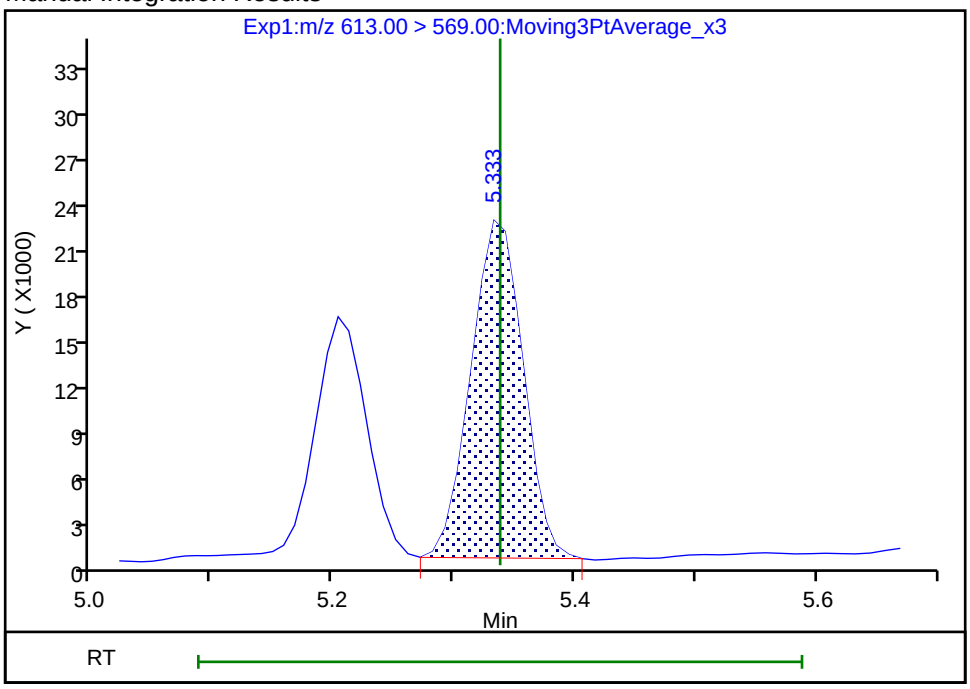
Processing Integration Results

RT: 5.33
Area: 67523
Amount: 0.049815
Amount Units: ng/ml



Manual Integration Results

RT: 5.33
Area: 65400
Amount: 0.049474
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:30:31
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

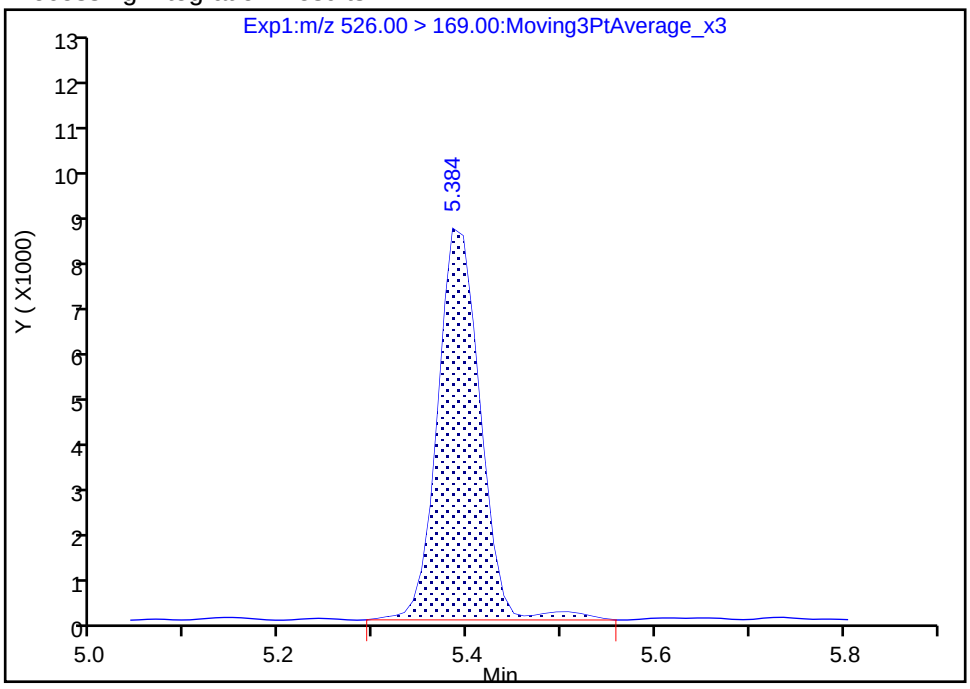
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

55 N-ethylperfluoro-1-octanesulfona, CAS: 4151-50-2

Signal: 1

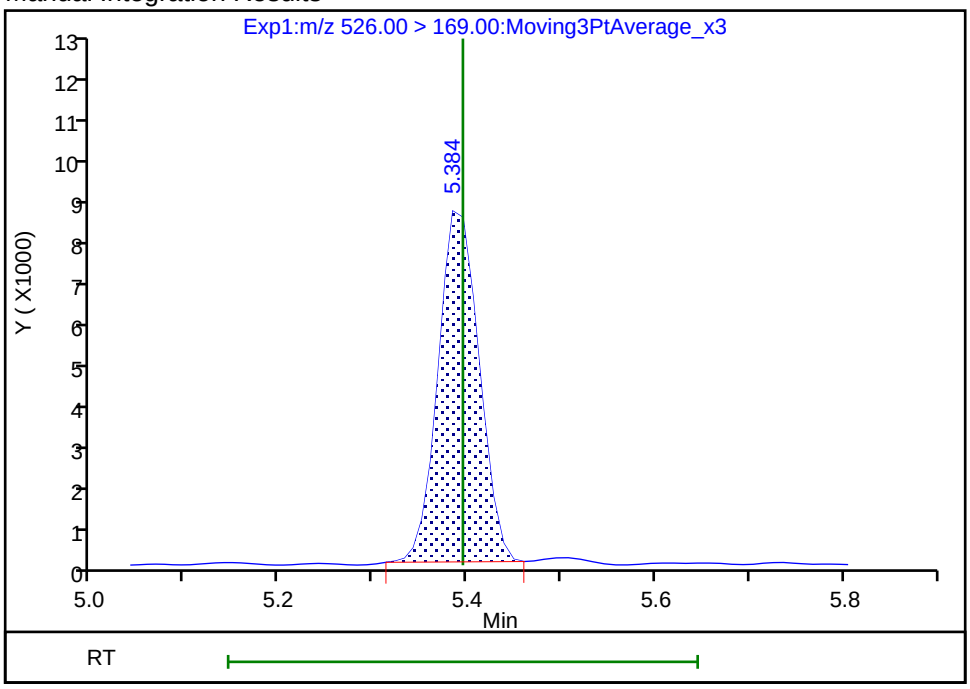
Processing Integration Results

RT: 5.38
Area: 25738
Amount: 0.053759
Amount Units: ng/ml



Manual Integration Results

RT: 5.38
Area: 24512
Amount: 0.046431
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:30:07
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

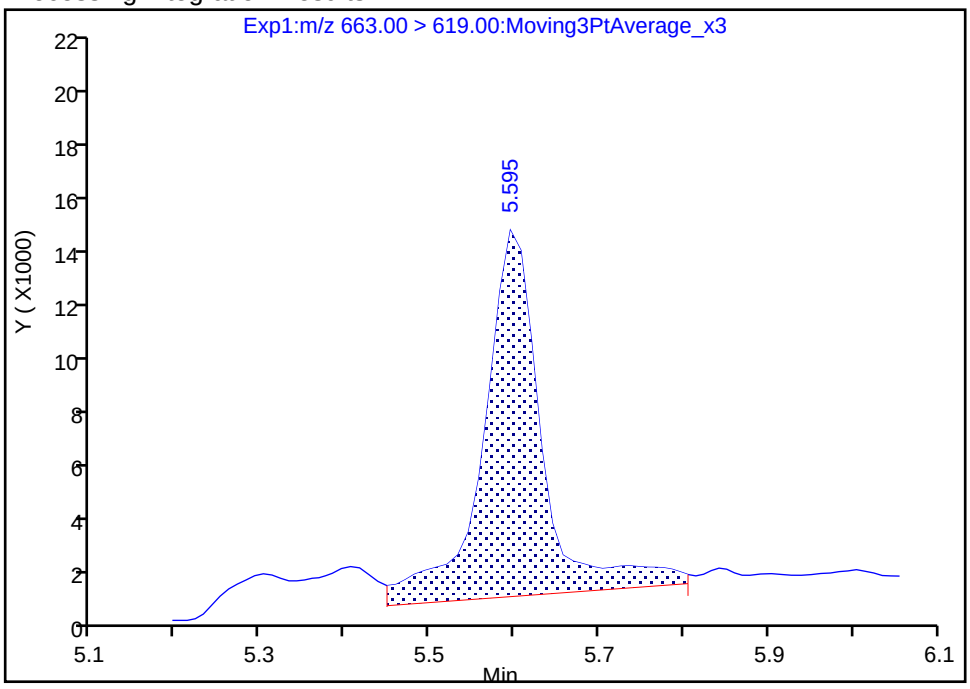
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

60 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

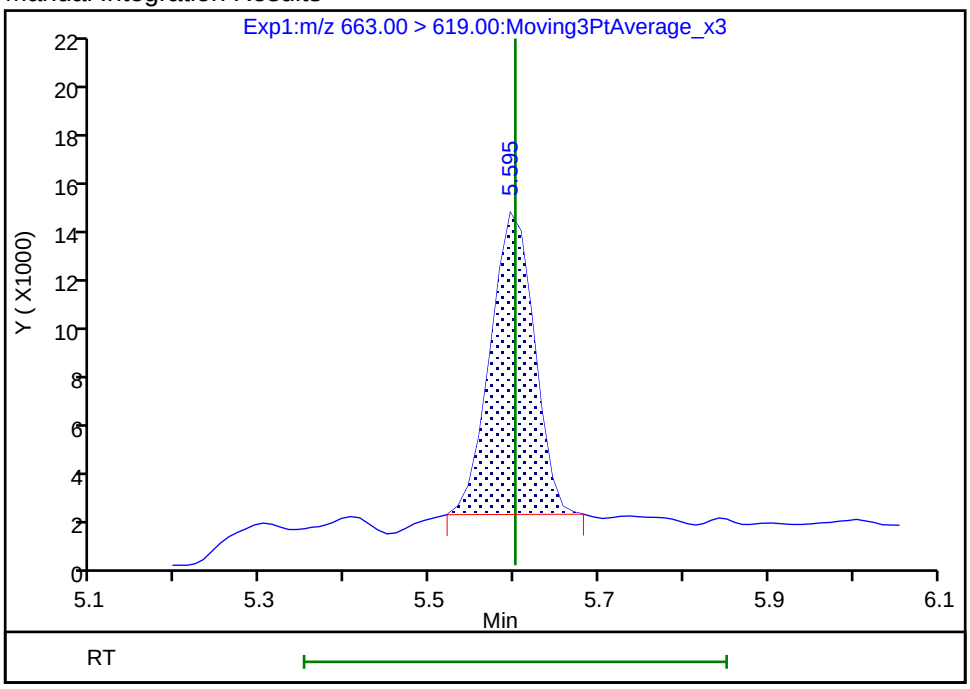
Processing Integration Results

RT: 5.60
Area: 65232
Amount: 0.050142
Amount Units: ng/ml



Manual Integration Results

RT: 5.60
Area: 44007
Amount: 0.041410
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:30:17
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

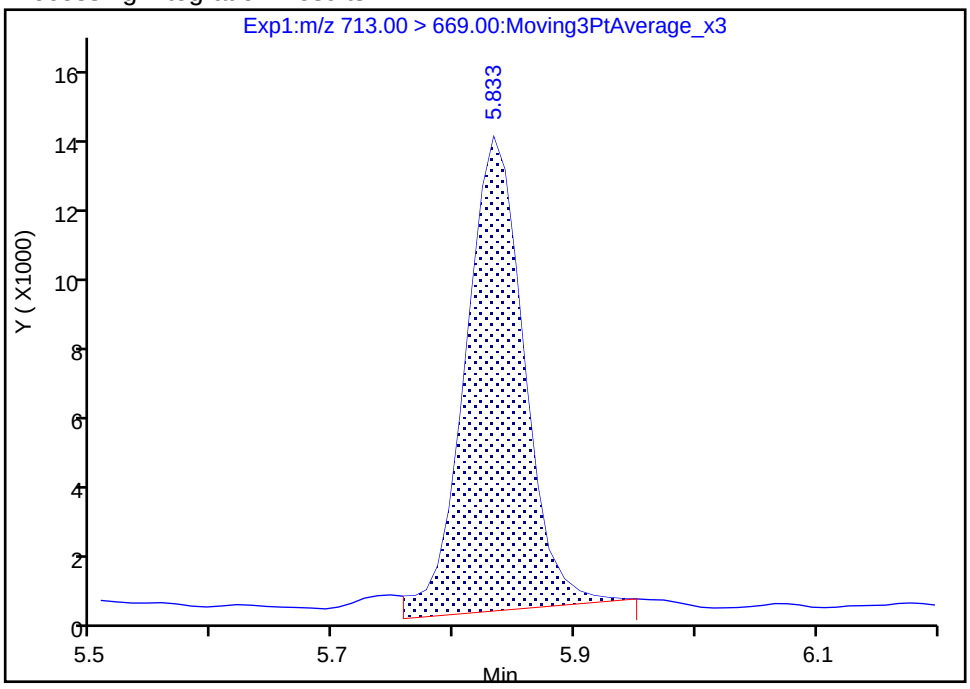
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

62 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

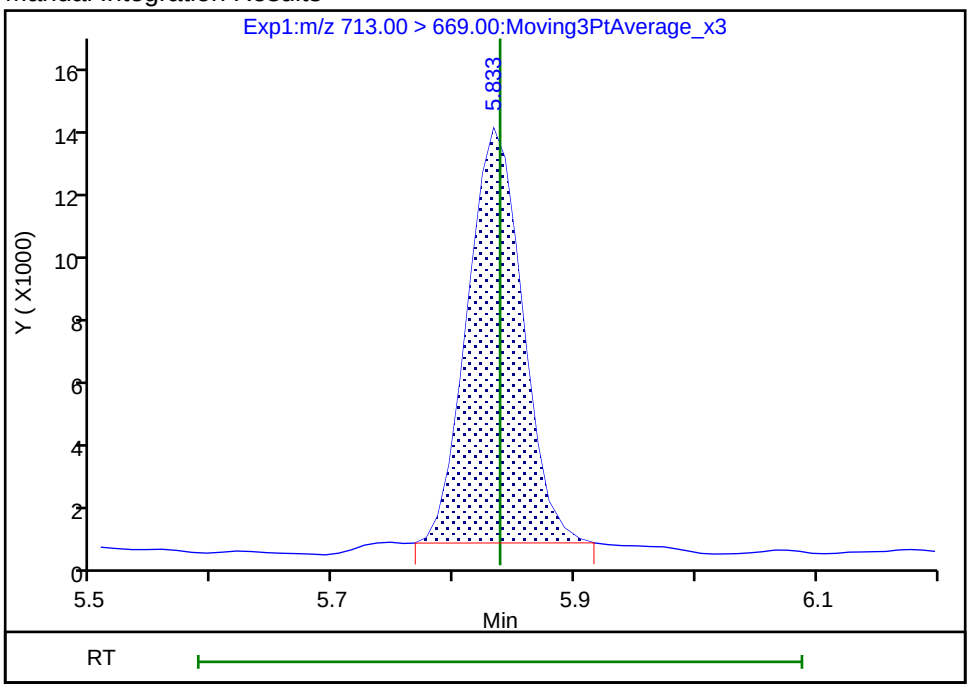
Processing Integration Results

RT: 5.83
Area: 42306
Amount: 0.049161
Amount Units: ng/ml



Manual Integration Results

RT: 5.83
Area: 38411
Amount: 0.047260
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:30:27
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

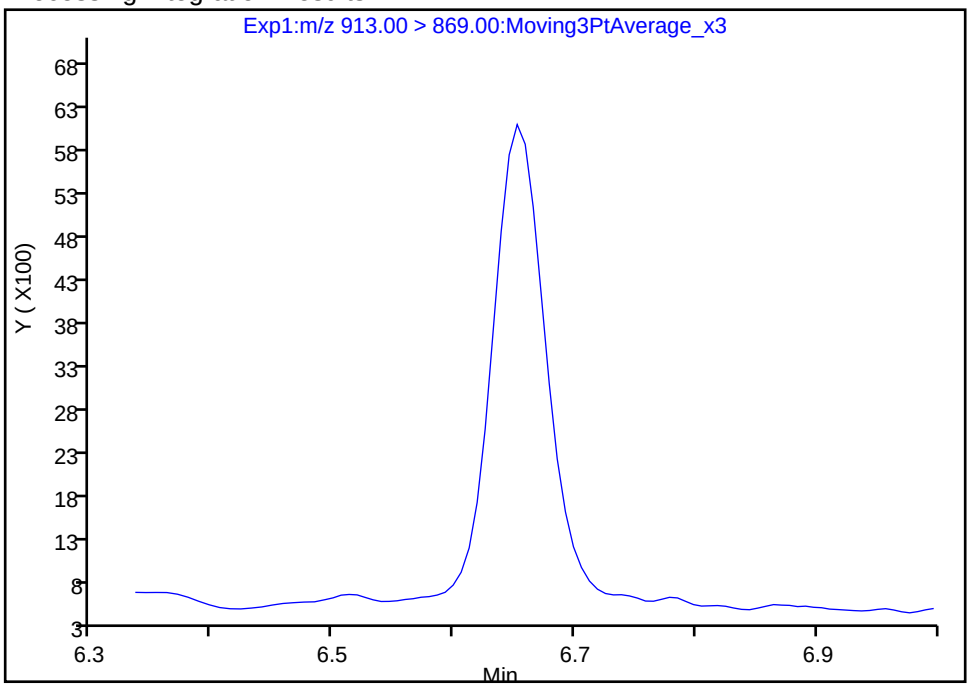
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

65 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 1

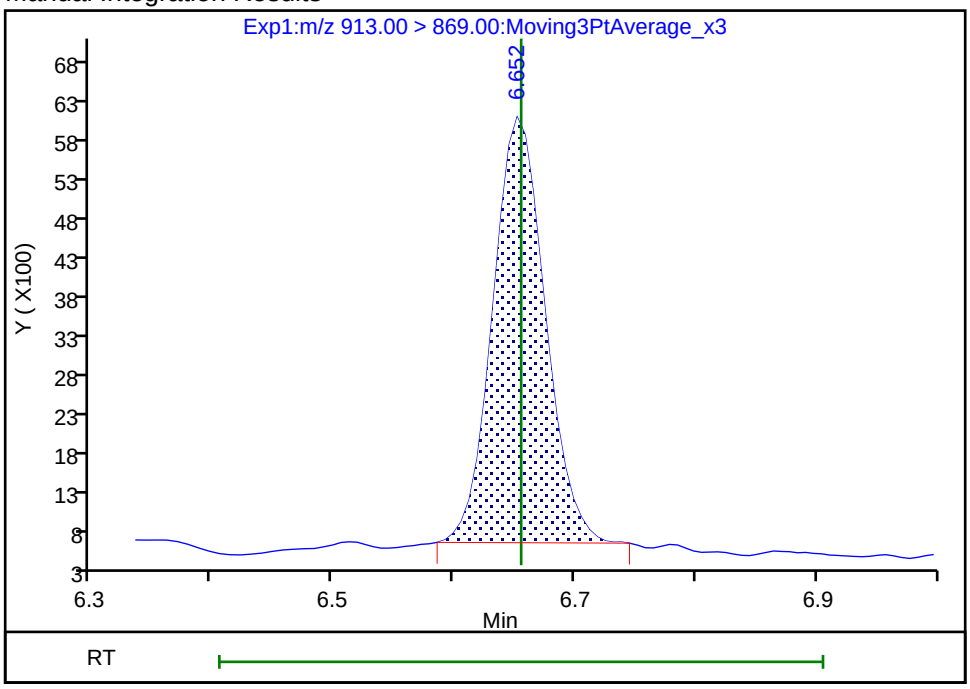
Not Detected
Expected RT: 6.66

Processing Integration Results



Manual Integration Results

RT: 6.65
Area: 16349
Amount: 0.043241
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:15:42
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

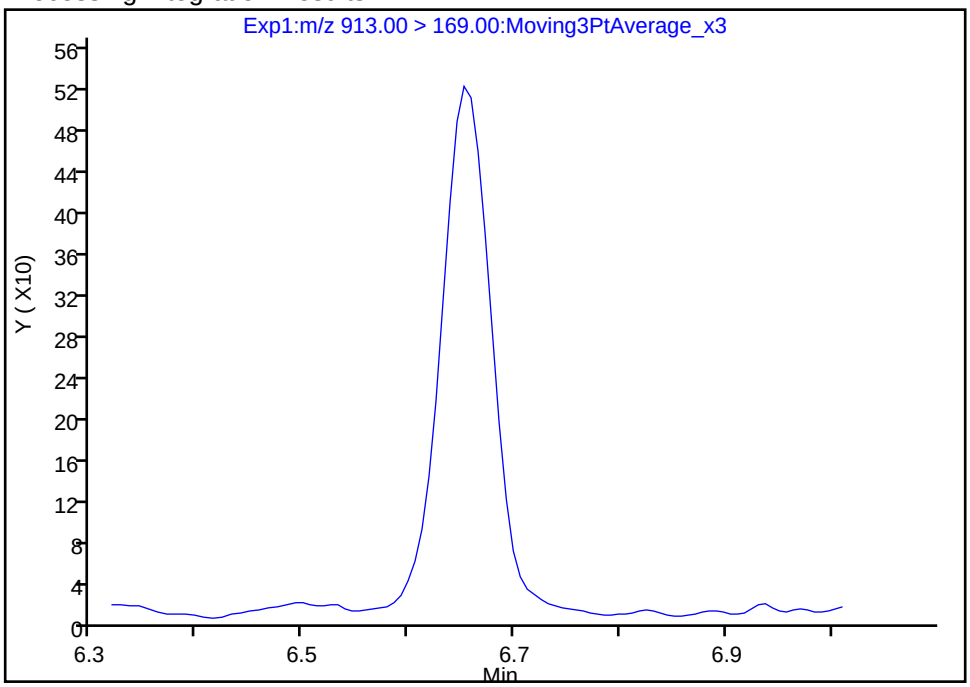
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

65 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 2

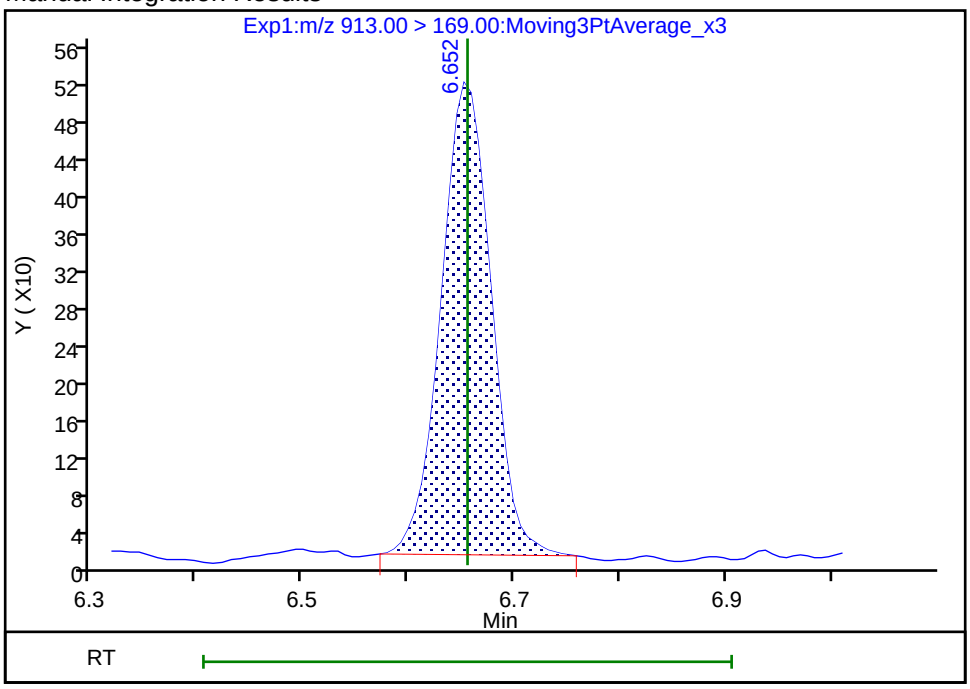
Not Detected
Expected RT: 6.66

Processing Integration Results



Manual Integration Results

RT: 6.65
Area: 1654
Amount: 0.043241
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:15:47
Audit Action: Manually Integrated Audit Reason: Assign Peak

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 04-Jun-2020 12:15:08 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 3 (19)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:23 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:35:45
Ratio Calibration: Average of Initial Calibration

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	2.557	2.549	0.008	0.630	9448270	2.47		98.9	18613	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.557	2.551	0.006	1.000	843031	0.2409		96.4	216	
D 4 13C5 PFPeA										
267.90 > 223.00	2.899	2.895	0.004	0.714	8287569	2.43		97.1	16340	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.899	2.898	0.001	1.000	792080	0.2372		94.9	57.6	M
D 9 13C3 PFBS										
301.90 > 80.00	2.940	2.930	0.010	0.724	5329078	2.25		96.9	20494	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.940	2.930	0.010	1.000	476364	0.2132	Target=2.14	96.5	256	
298.90 > 99.00	2.940	2.930	0.010	1.000	230964		2.06(1.07-3.21)	96.5	159	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.231	3.226	0.005	0.796	732852	2.33		99.7	1579	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.231	3.227	0.004	1.000	153907	0.2174		93.1	3228	
D 11 13C2 PFHxA										
315.00 > 270.00	3.280	3.267	0.013	0.808	8323323	2.51		100	15511	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.280	3.267	0.013	1.000	777330	0.2490	Target=15.73	99.6	375	
313.00 > 119.00	3.271	3.267	0.004	0.997	48213		16.12(7.86-23.59)	99.6	122	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.290	3.285	0.005	1.119	395420	0.2352	Target=2.69	100	1990	
349.00 > 99.00	3.290	3.285	0.005	1.119	151729		2.61(1.35-4.04)	100	1008	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.397	3.386	0.011	0.837	1892293	2.49		99.7	12880	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.397	3.386	0.011	1.000	168499	0.2437		97.5	3100	
D 18 13C4 PFHpA										
367.00 > 322.00	3.673	3.661	0.012	0.905	6280993	2.39		95.5	13374	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.673	3.662	0.011	1.000	640244	0.2521	Target=3.80	101	241	
363.00 > 169.00	3.673	3.662	0.011	1.000	166684		3.84(1.90-5.71)	101	910	
D 17 18O2 PFHxS										
403.00 > 84.00	3.673	3.667	0.006	0.905	2650257	2.33		98.5	13452	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.673	3.670	0.003	1.000	260169	0.2067	Target=2.99	90.9	1724	
399.00 > 99.00	3.673	3.670	0.003	1.000	93925		2.77(1.50-4.49)	90.9	389	
19 DONA										
377.00 > 251.00	3.712	3.709	0.003	0.842	1480984	0.2356	Target=2.14	100	4198	
377.00 > 85.00	3.712	3.709	0.003	0.842	671213		2.21(1.07-3.21)	100	2449	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.035	4.030	0.005	0.994	851271	2.45		103	5331	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.043	4.032	0.011	1.002	167725	0.2381		100	1705	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.052	4.046	0.006	0.919	224605	0.2402	Target=3.77	101	1834	
449.00 > 99.00	4.052	4.046	0.006	0.919	58377		3.85(1.89-5.66)	101	517	
$ 26 13C8 PFOA										
421.00 > 376.00	4.052	4.046	0.006	0.998	3690520	2.53		103	19166	
D 25 13C4 PFOA										
417.00 > 372.00	4.060	4.051	0.009	1.000	6072440	2.55		102	14639	
* 23 13C2 PFOA										
415.00 > 370.00	4.060	4.051	0.009		6033316	2.50			10649	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.060	4.052	0.008	1.000	573324	0.2234	Target=2.88	89.4	40.7	M
413.00 > 169.00	4.060	4.052	0.008	1.000	221744		2.59(1.44-4.31)	89.4	1355	
$ 28 13C8 PFOS										
507.00 > 99.00	4.407	4.400	0.007	1.086	695576	2.32		96.9	5494	
D 27 13C4 PFOS										
503.00 > 80.00	4.407	4.402	0.005	1.086	2049165	2.32		97.1	7303	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.407	4.403	0.004	1.000	187236	0.2207	Target=4.89	95.1	1322	
499.00 > 99.00	4.407	4.403	0.004	1.000	38989		4.80(2.44-7.33)	95.1	278	
31 Perfluorononanoic acid										M
463.00 > 419.00	4.423	4.417	0.006	1.000	427845	0.2234	Target=7.00	89.4	78.8	M
463.00 > 169.00	4.423	4.417	0.006	1.000	66935		6.39(3.50-10.51)	89.4	562	
D 30 13C5 PFNA										
468.00 > 423.00	4.423	4.417	0.006	1.089	4721149	2.59		104	9107	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.593	4.592	0.001	1.042	528793	0.2260		97.0	2557	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.737	4.732	0.005	1.075	162570	0.2374	Target=2.77	98.9	364	
549.00 > 99.00	4.730	4.732	-0.002	1.073	56770		2.86(1.38-4.15)	98.9	442	
D 33 13C8 FOSA										
506.00 > 78.00	4.752	4.747	0.005	1.171	4398715	2.50		100	6331	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.752	4.749	0.003	1.000	371735	0.2405		96.2	1725	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.752	4.752	0.0	0.998	452204	0.2789	Target=10.36	112	141	
513.00 > 169.00	4.752	4.752	0.0	0.998	40167		11.26(5.18-15.54)	112	144	
D 39 13C2 PFDA										
515.00 > 470.00	4.761	4.754	0.007	1.173	4197427	2.42		96.7	12257	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.761	4.755	0.006	1.000	163721	0.2328		97.2	1066	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.761	4.755	0.006	1.173	1032421	2.49		104	4598	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.917	4.912	0.005	1.211	1541416	2.38		95.2	2062	
41 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.917	4.915	0.002	1.000	107484	0.2389		95.6	151	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.038	5.037	0.001	1.143	139279	0.2318	Target=2.97	96.2	939	
599.00 > 99.00	5.038	5.037	0.001	1.143	46484		3.00(1.49-4.46)	96.2	842	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.065	5.060	0.005	1.000	265127	0.2426	Target=7.56	97.0	175	
563.00 > 169.00	5.065	5.060	0.005	1.000	34836		7.61(3.78-11.34)	97.0	406	
D 43 13C2 PFUnA										
565.00 > 520.00	5.065	5.062	0.003	1.248	3787817	2.56		102	12870	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.075	5.071	0.004	1.250	1646406	2.50		99.8	1969	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.075	5.075	0.0	1.000	106821	0.2295		91.8	551	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.193	5.191	0.002	1.178	507842	0.2296		97.5	1939	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.202	5.198	0.004	1.281	5384514	12.2		97.4	5000	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.210	5.209	0.001	1.002	108107	0.2398		95.9	262	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.219	5.215	0.004	1.286	1283749	2.31		92.5	142	
50 NMeFOSA										M
512.00 > 169.00	5.219	5.220	-0.001	1.000	114727	0.2373		94.9	426	M
57 Perfluorododecanoic acid										
613.00 > 569.00	5.340	5.338	0.002	1.000	312046	0.2341	Target=7.18	93.6	58.1	
613.00 > 169.00	5.340	5.338	0.002	1.000	42747		7.30(3.59-10.76)	93.6	536	
D 56 13C2 PFDoA										
615.00 > 570.00	5.340	5.339	0.001	1.315	3395718	2.59		104	11169	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.358	5.362	-0.004	1.125	120671	0.2176		90.3	1945	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.367	5.364	0.003	1.322	6015322	11.1		88.8	3736	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.375	5.376	-0.001	1.001	133940	0.2719		109	327	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.383	5.387	-0.004	1.326	1289555	2.29		91.6	688	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.394	5.395	-0.001	1.002	135323	0.2618		105	563	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.567	5.562	0.005	1.263	47563	0.2278	Target=0.79	94.2	487	
699.00 > 99.00	5.567	5.562	0.005	1.263	60463		0.79(0.39-1.18)	94.2	935	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.605	5.601	0.004	1.050	246788	0.2303	Target=6.63	92.1	42.8	
663.00 > 169.00	5.605	5.601	0.004	1.050	40373		6.11(3.32-9.95)	92.1	550	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.839	5.835	0.004	1.438	2233755	2.61		104	5581	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.839	5.838	0.001	1.000	217351	0.2432	Target=8.46	97.3	60.4	
713.00 > 219.00	5.830	5.838	-0.008	0.998	23994		9.06(4.23-12.69)	97.3	874	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.263	6.257	0.006	1.543	1674702	2.36		94.3	5461	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.263	6.258	0.005	1.000	155680	0.2496	Target=7.92	99.8	21.9	
813.00 > 169.00	6.254	6.258	-0.004	0.999	18480		8.42(3.96-11.88)	99.8	316	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.656	6.655	0.001	1.063	78914	0.2394	Target=10.24	95.8	16.7	
913.00 > 169.00	6.656	6.655	0.001	1.063	7346		10.74(5.12-15.36)	95.8	142	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00019 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d

Injection Date: 04-Jun-2020 12:15:08 Instrument ID: A15

Lims ID: IC L3 Full

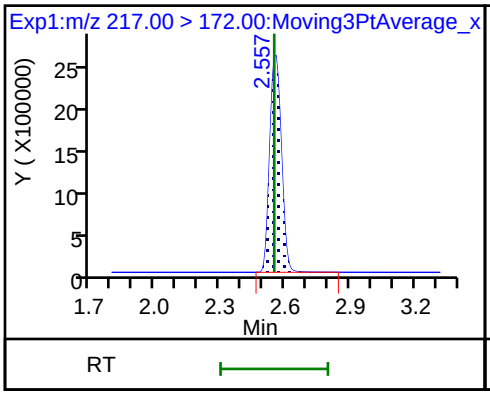
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 3 Worklist Smp#: 4

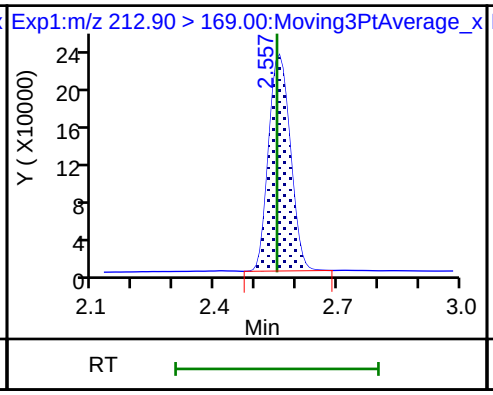
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

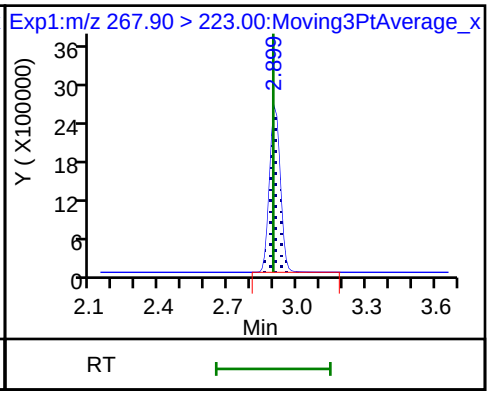
D 1 13C4 PFBA



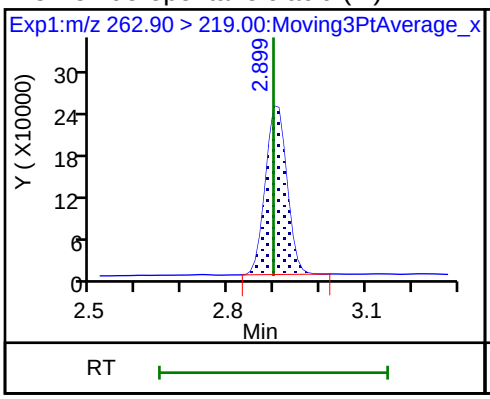
2 Perfluorobutanoic acid



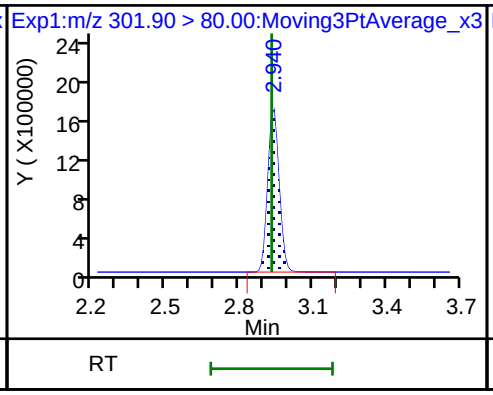
D 4 13C5 PFPeA



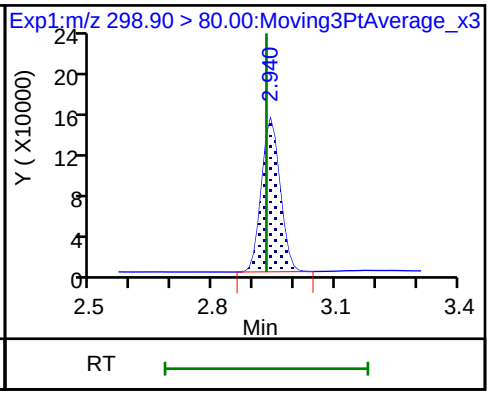
5 Perfluoropentanoic acid (M)



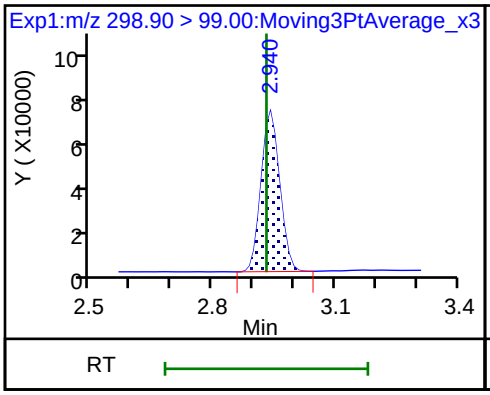
D 9 13C3 PFBS



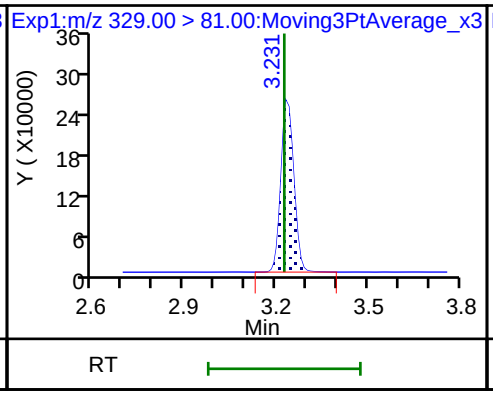
6 Perfluorobutanesulfonic acid



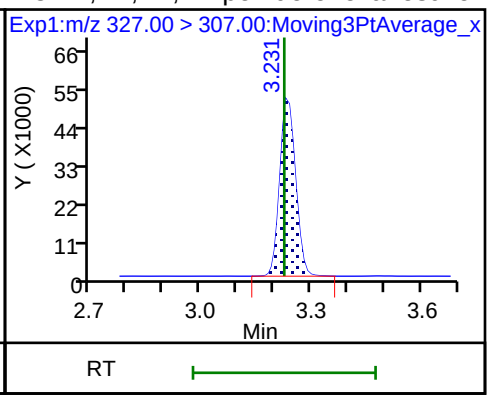
6 Perfluorobutanesulfonic acid



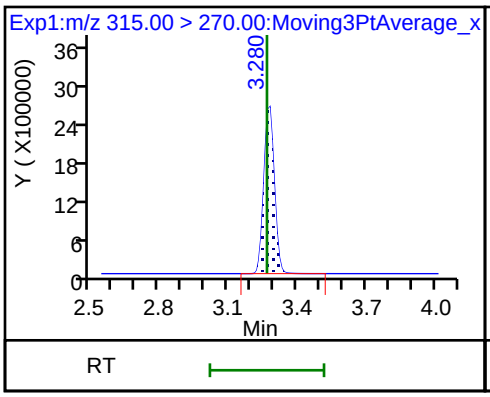
D 7 M2-4:2 FTS



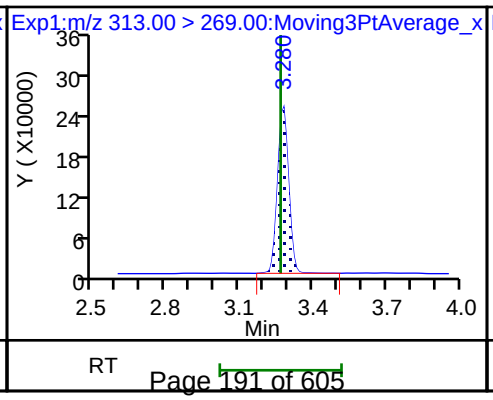
8 1H,1H,2H,2H-perfluorohexanesulfo



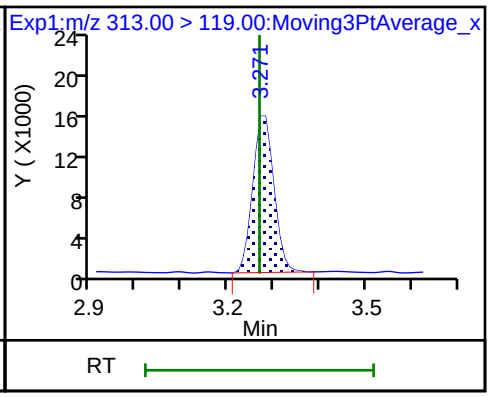
D 11 13C2 PFHxA



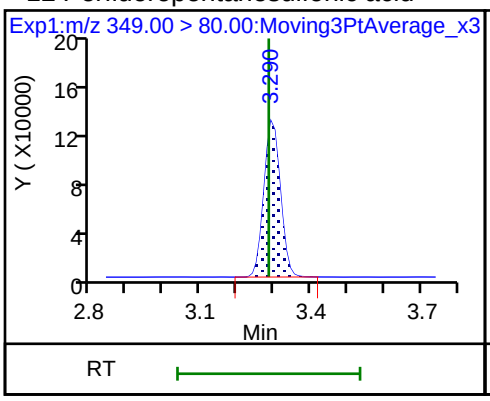
10 Perfluorohexanoic acid



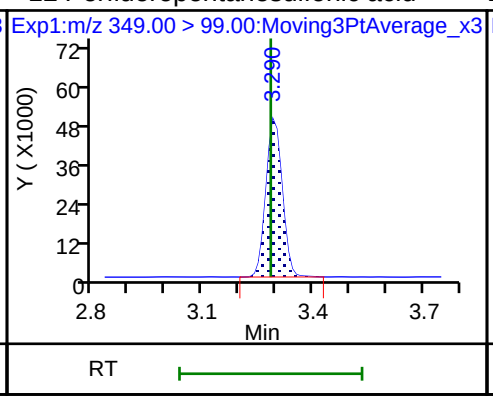
10 Perfluorohexanoic acid



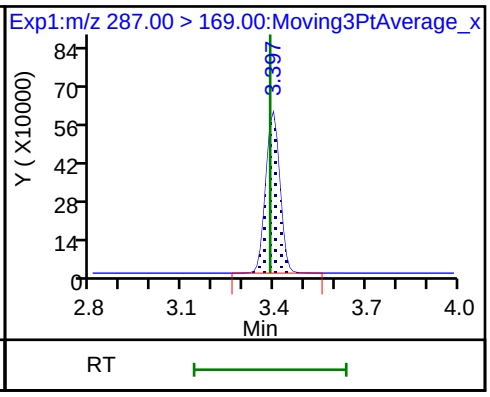
12 Perfluoropentanesulfonic acid



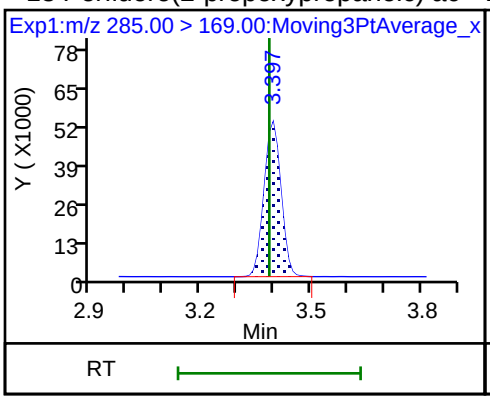
12 Perfluoropentanesulfonic acid



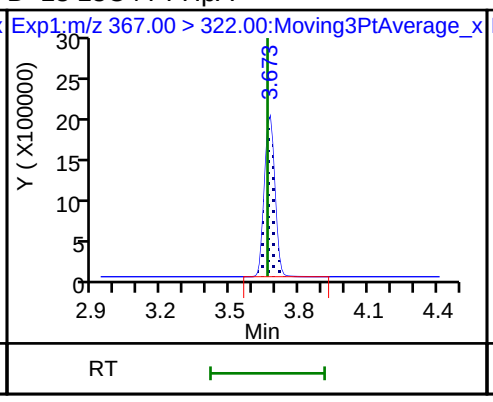
D 14 13C3 HFPO-DA



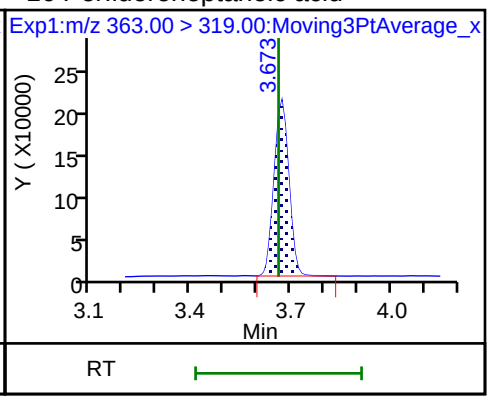
13 Perfluoro(2-propoxypropanoic) ac



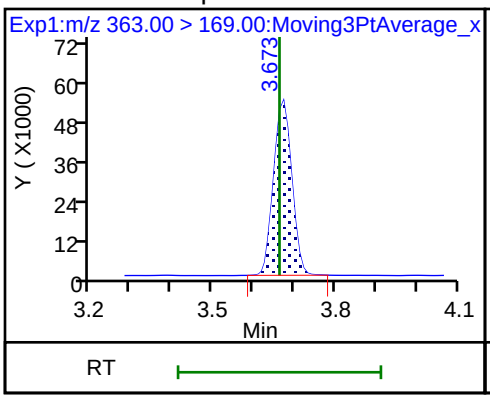
D 18 13C4 PFHpA



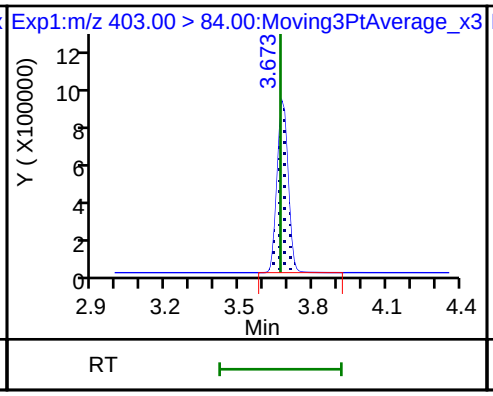
16 Perfluoroheptanoic acid



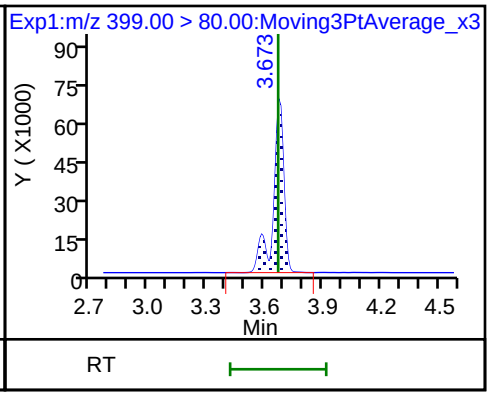
16 Perfluoroheptanoic acid



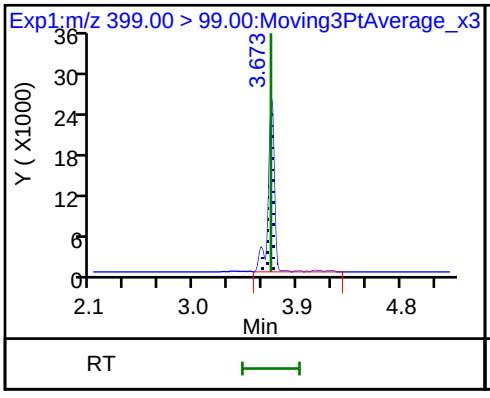
D 17 18O2 PFHxS



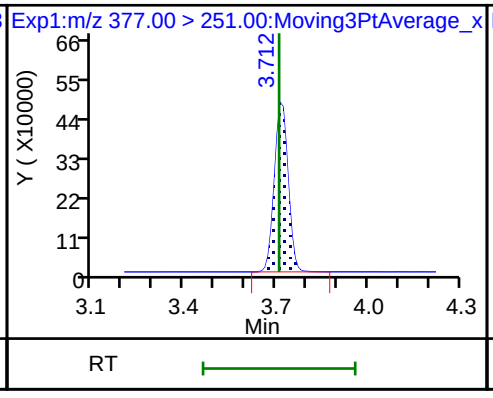
15 Perfluorohexanesulfonic acid



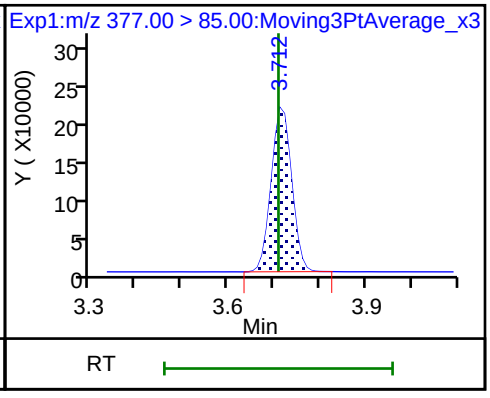
15 Perfluorohexanesulfonic acid



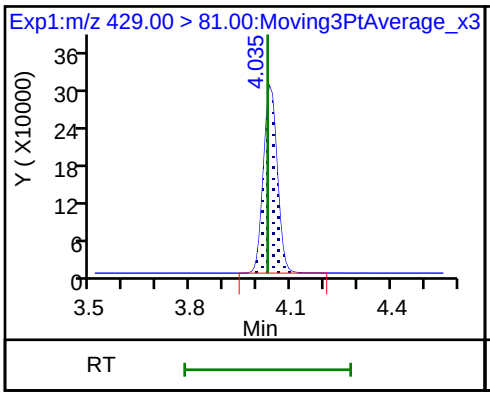
19 DONA



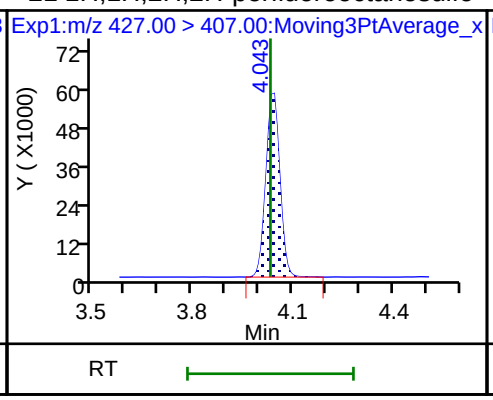
19 DONA



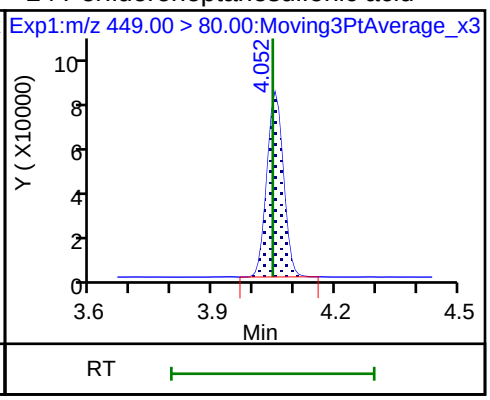
D 20 M2-6:2 FTS



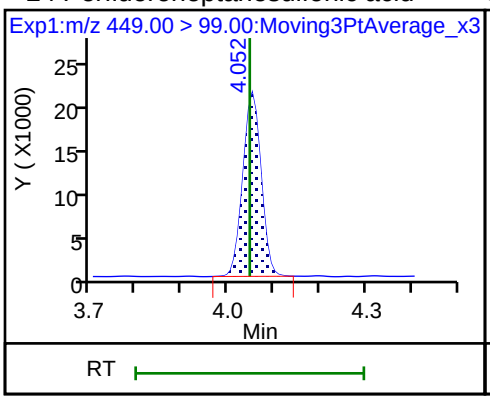
21 1H,1H,2H,2H-perfluorooctanesulfo



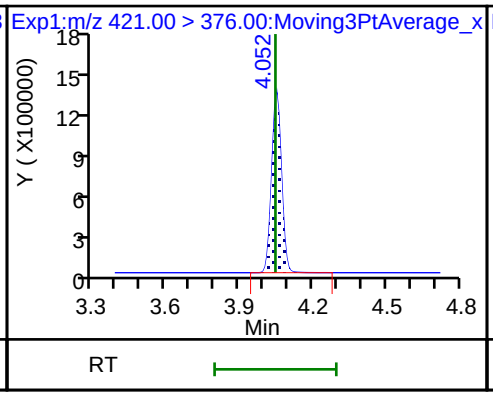
24 Perfluoroheptanesulfonic acid



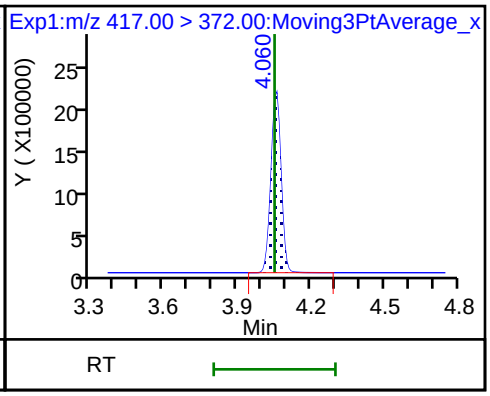
24 Perfluoroheptanesulfonic acid



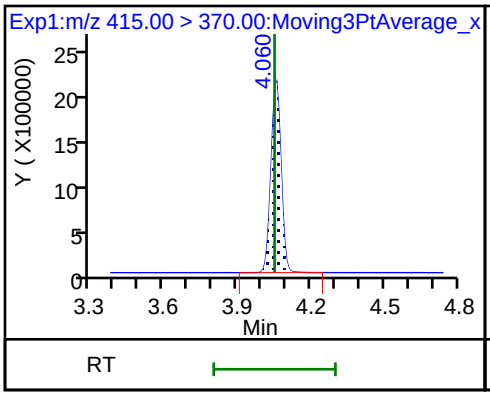
$ 26 13C8 PFOA



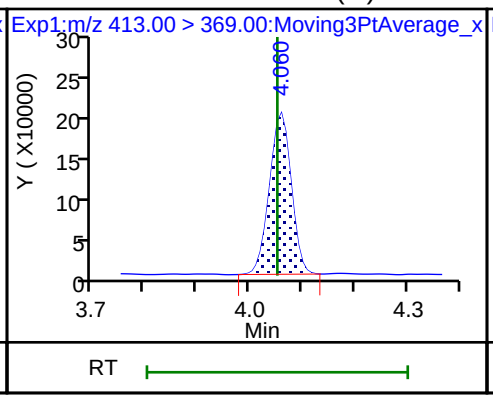
D 25 13C4 PFOA



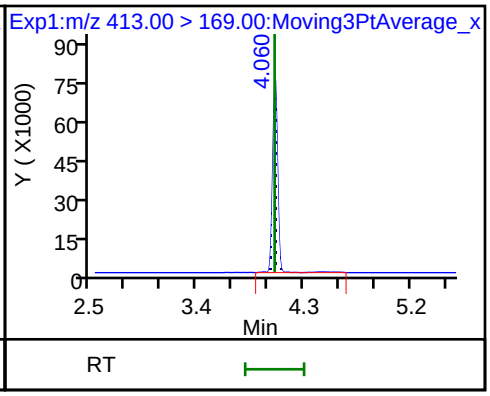
* 23 13C2 PFOA



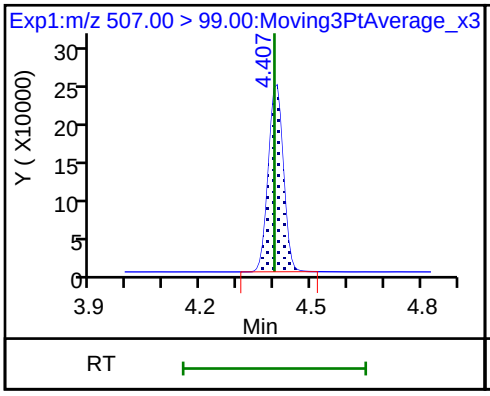
22 Perfluorooctanoic acid (M)



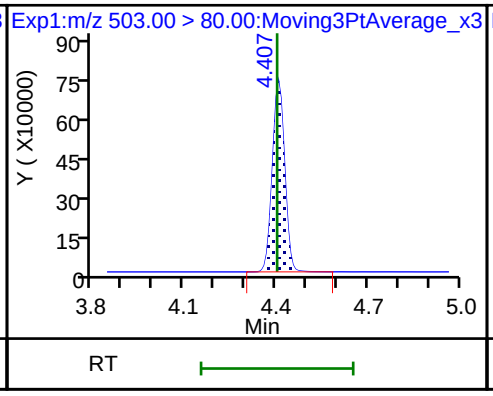
22 Perfluorooctanoic acid



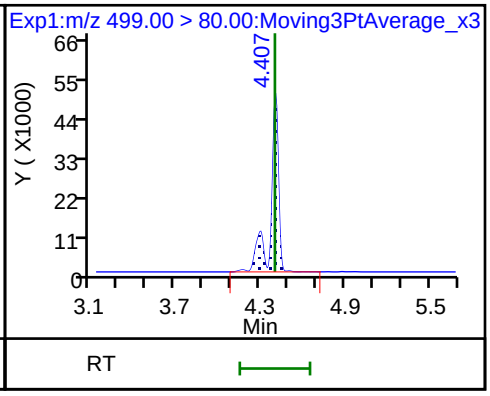
$ 28 13C8 PFOS



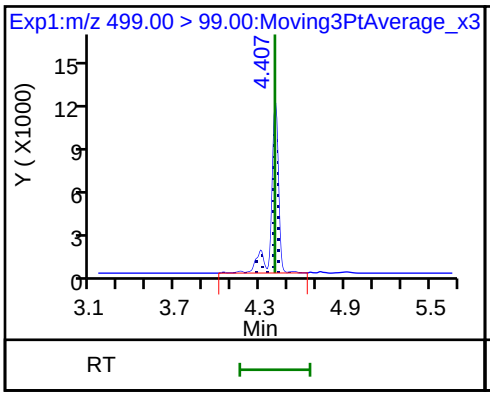
D 27 13C4 PFOS



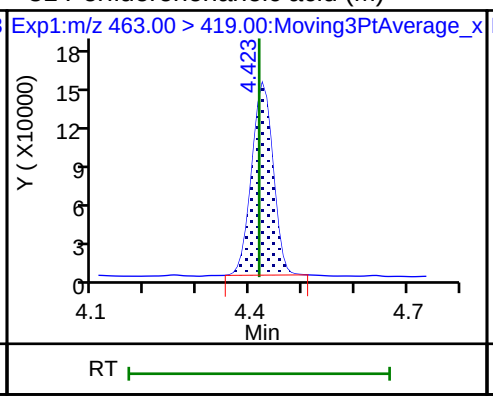
29 Perfluorooctanesulfonic acid



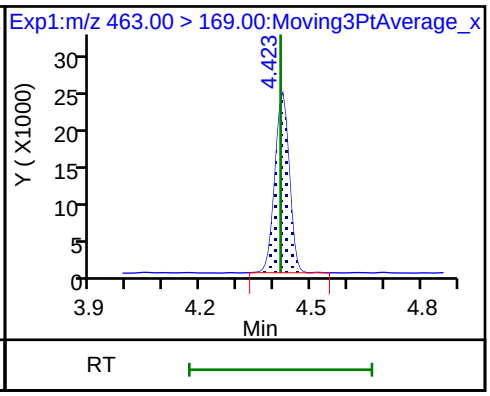
29 Perfluorooctanesulfonic acid



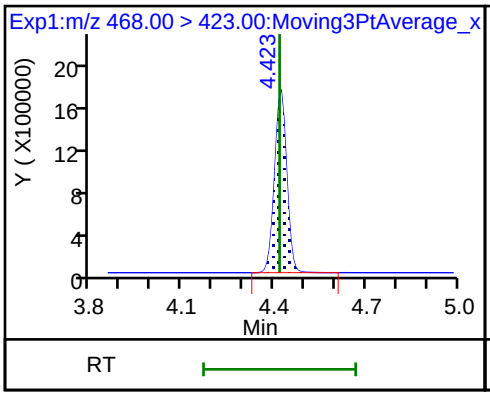
31 Perfluorononanoic acid (M)



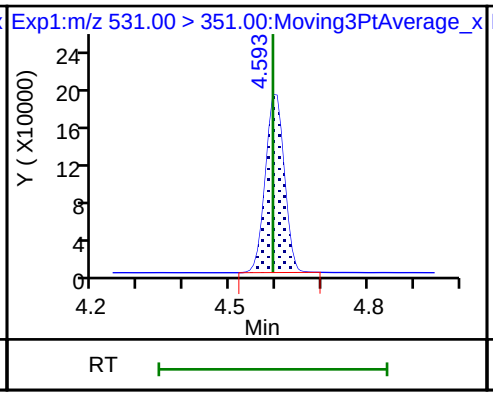
31 Perfluorononanoic acid



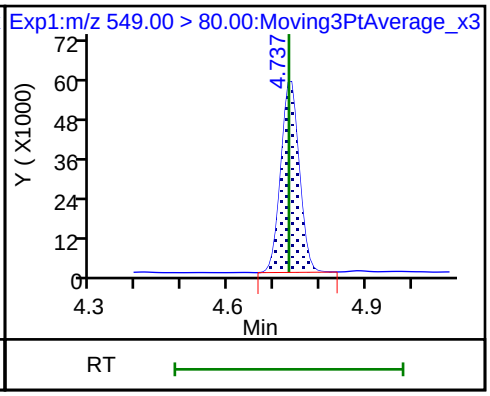
D 30 13C5 PFNA



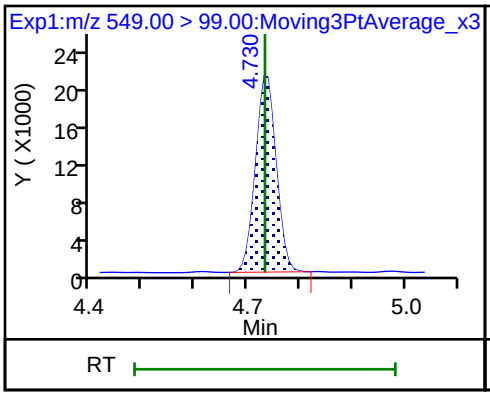
32 9-Chlorohexadecafluoro-3-oxanona



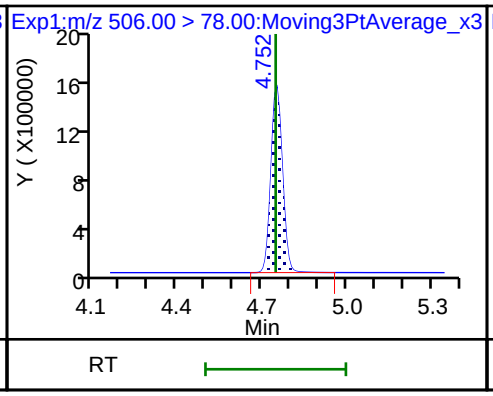
35 Perfluorononanesulfonic acid



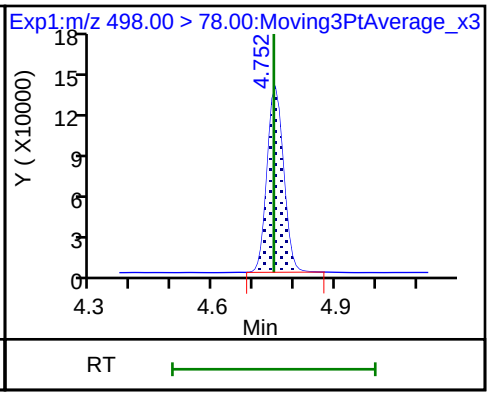
35 Perfluorononanesulfonic acid



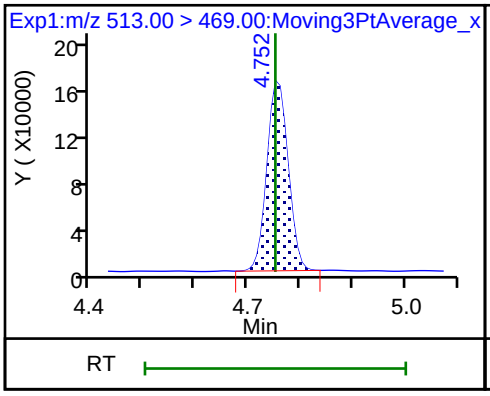
D 33 13C8 FOSA



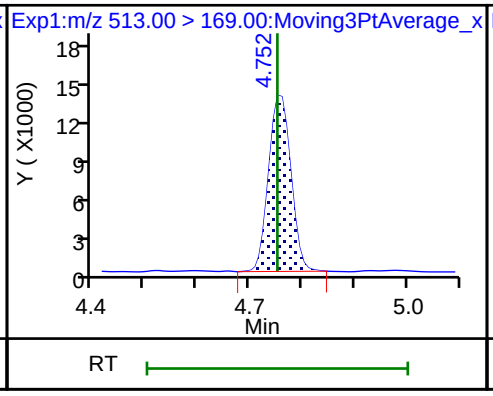
34 Perfluorooctanesulfonamide



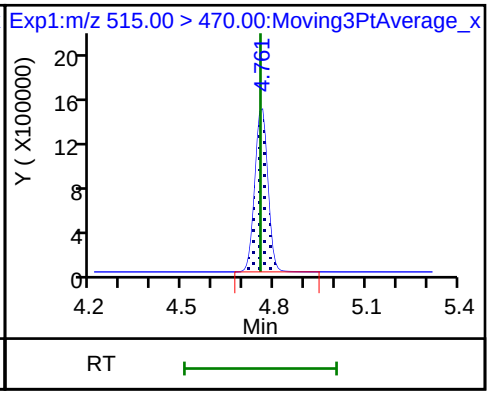
37 Perfluorodecanoic acid



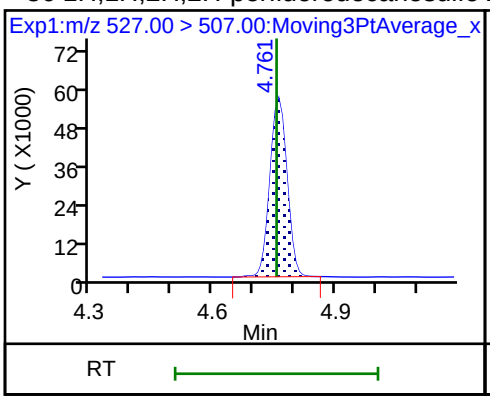
37 Perfluorodecanoic acid



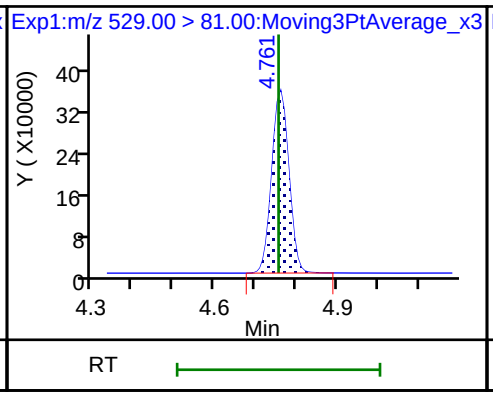
D 39 13C2 PFDA



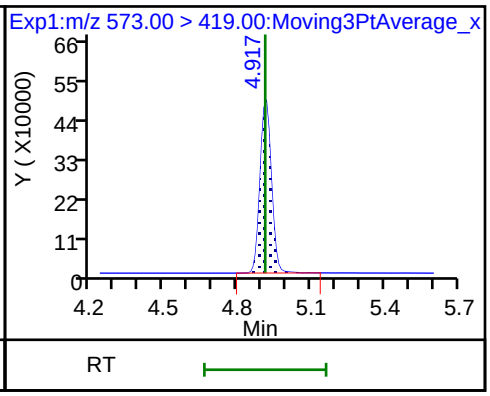
36 1H,1H,2H,2H-perfluorodecanesulfo



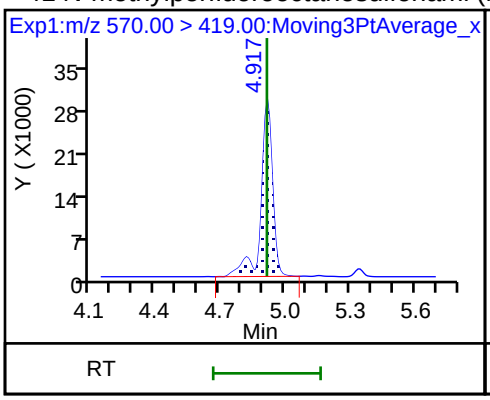
D 38 M2-8:2 FTS



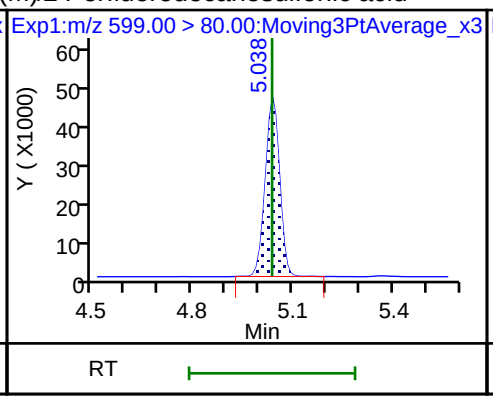
D 40 d3-NMeFOSAA



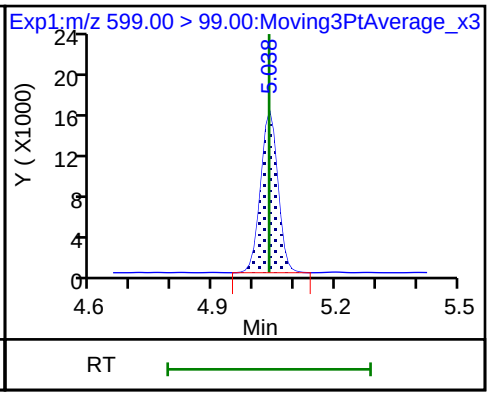
41 N-methylperfluorooctanesulfonami (M)



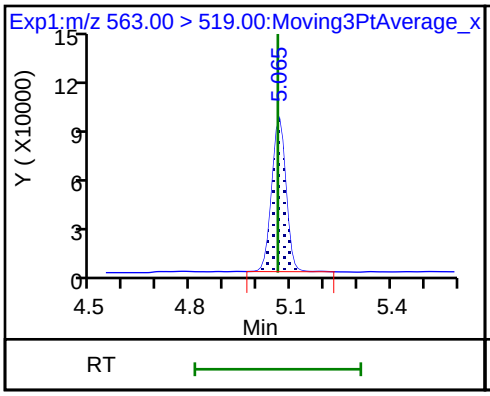
42 Perfluorodecanesulfonic acid



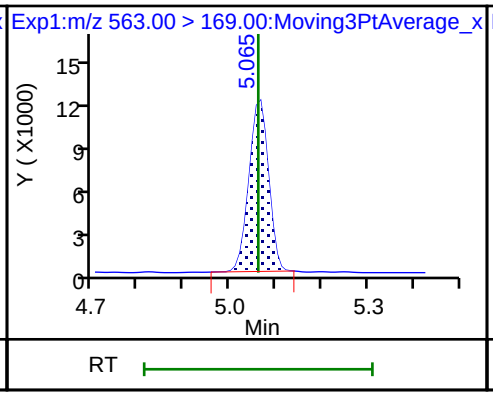
42 Perfluorodecanesulfonic acid



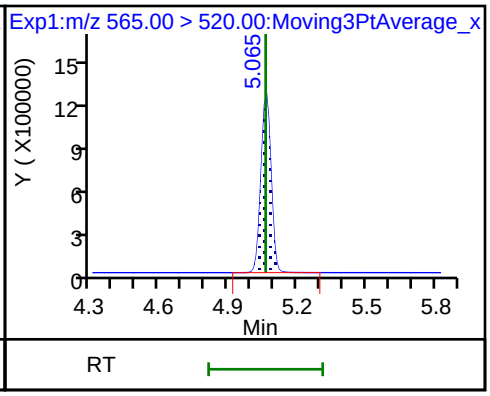
45 Perfluoroundecanoic acid



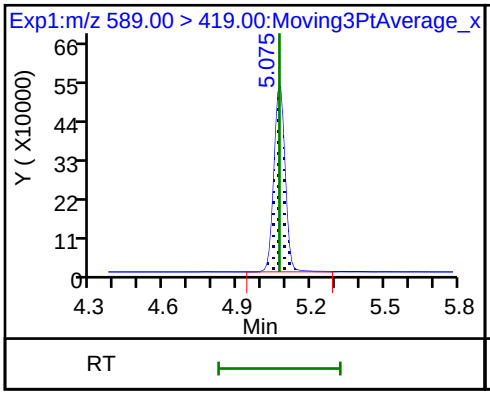
45 Perfluoroundecanoic acid



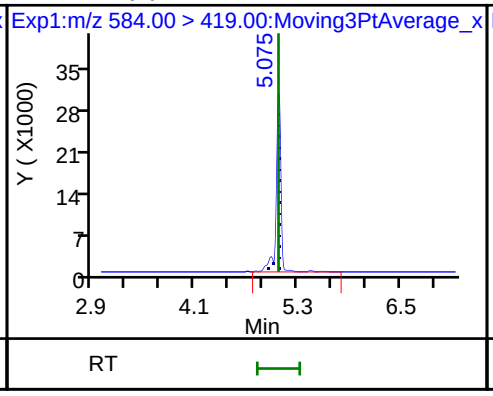
D 43 13C2 PFUnA



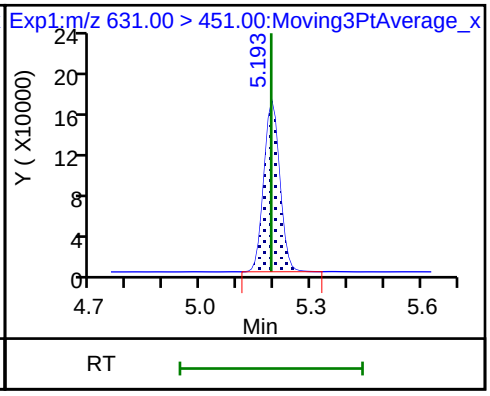
D 44 d5-NEtFOSAA



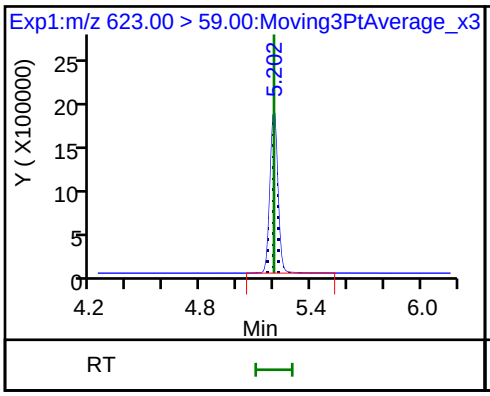
46 N-ethylperfluorooctanesulfonamid



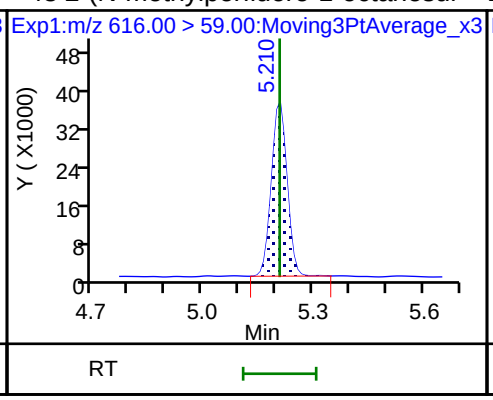
51 11-Chloroeicosafluoro-3-oxaundec



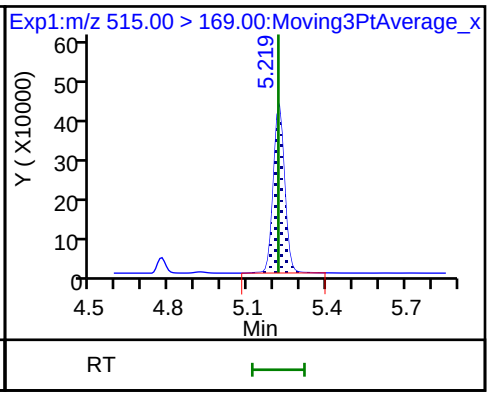
D 47 d7-N-MeFOSE-M



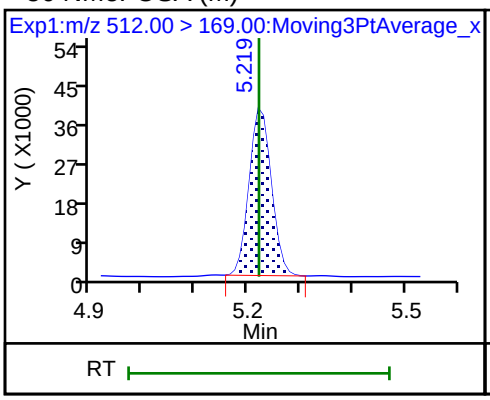
48 2-(N-methylperfluoro-1-octanesul



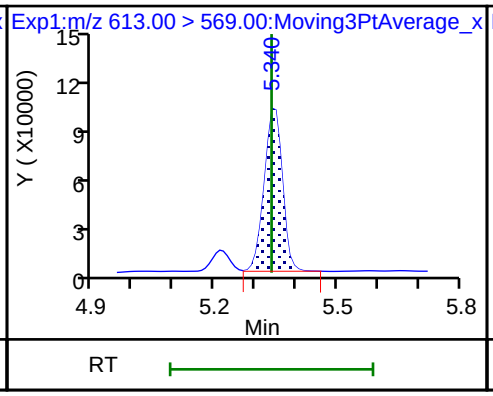
D 49 d-N-MeFOSA-M



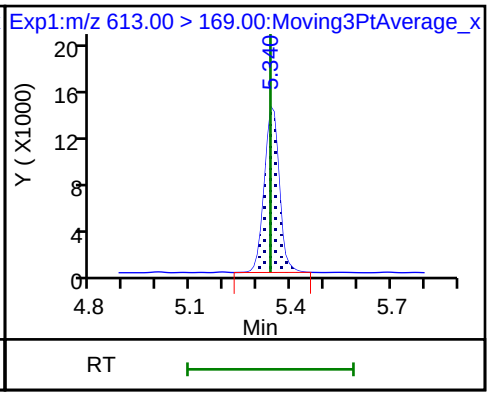
50 NMeFOSA (M)



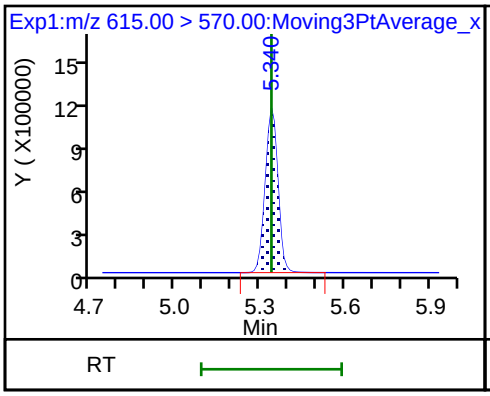
57 Perfluorododecanoic acid



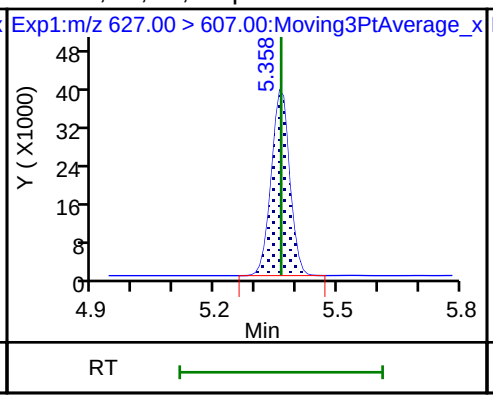
57 Perfluorododecanoic acid



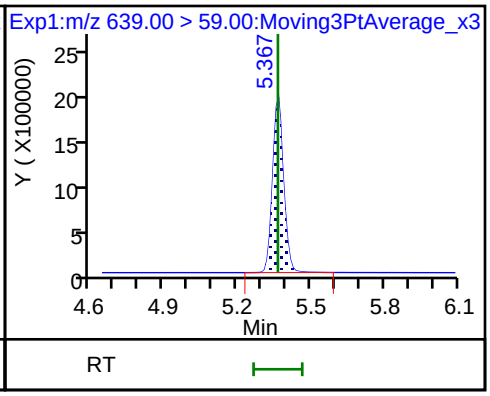
D 56 13C2 PFDoA



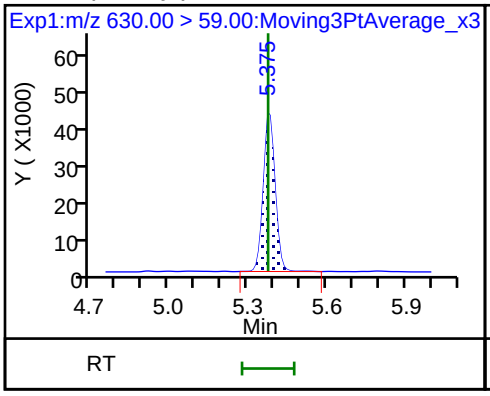
58 1H,1H,2H,2H-perfluorododecanesul



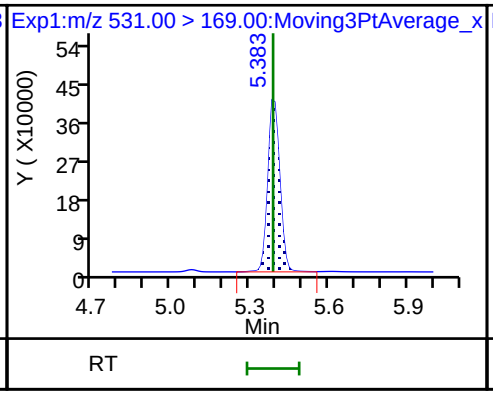
D 52 d9-N-EtFOSE-M



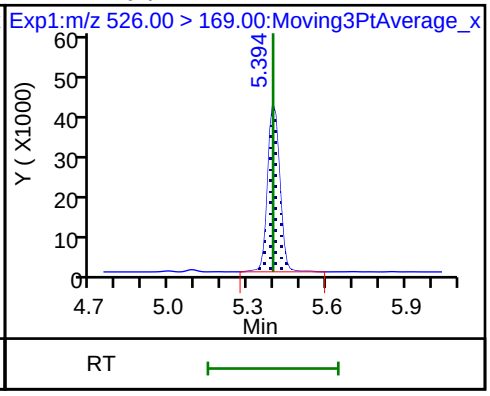
53 2-(N-ethylperfluoro-1-octanesulf



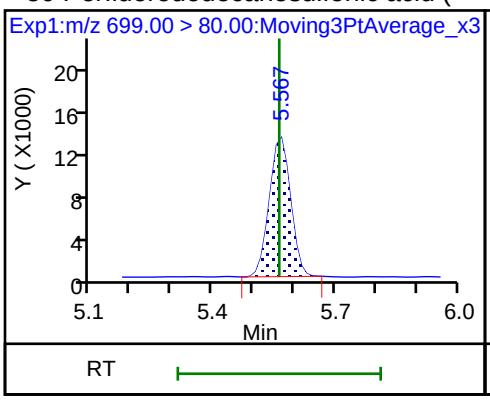
D 54 d-N-EtFOSA-M



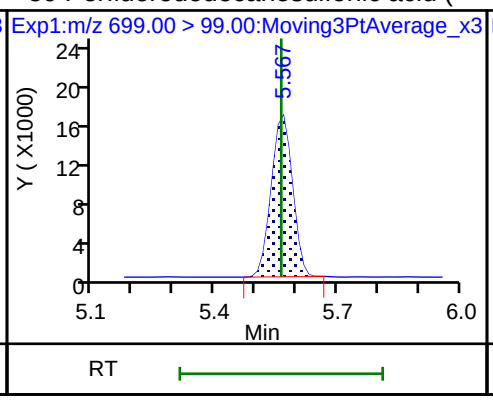
55 N-ethylperfluoro-1-octanesulfona



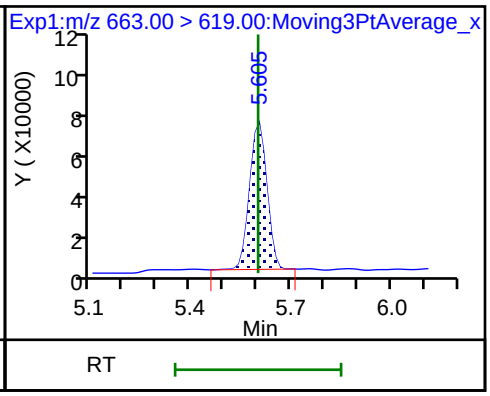
59 Perfluorododecanesulfonic acid (



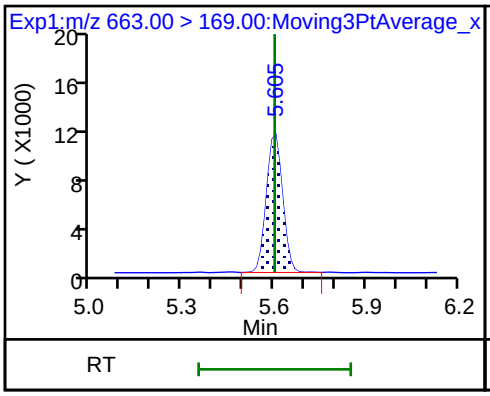
59 Perfluorododecanesulfonic acid (



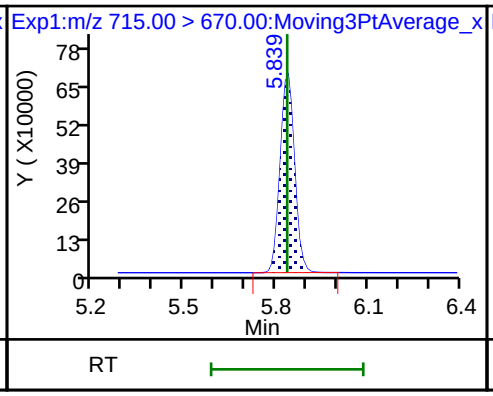
60 Perfluorotridecanoic acid



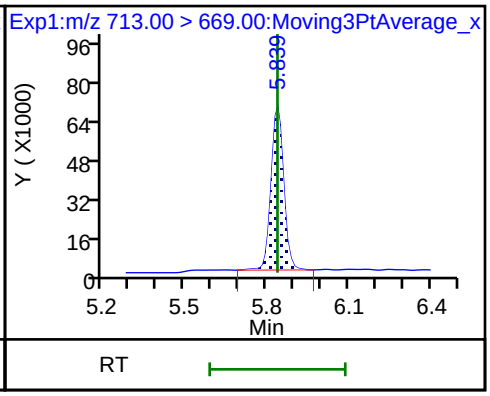
60 Perfluorotridecanoic acid



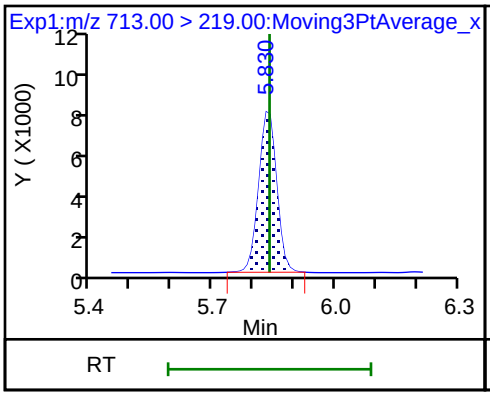
D 61 13C2 PFTeDA



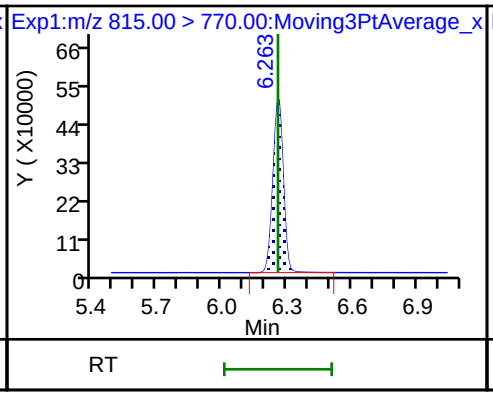
62 Perfluorotetradecanoic acid



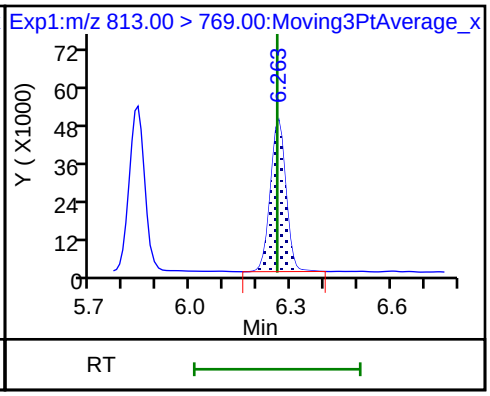
62 Perfluorotetradecanoic acid



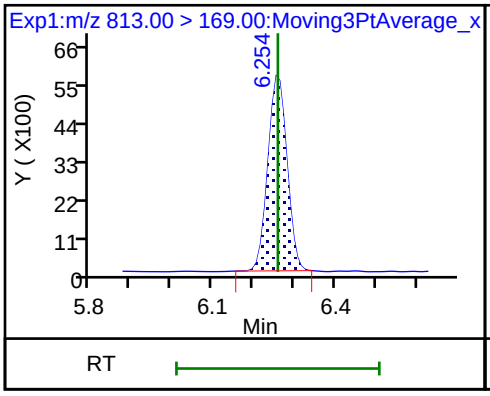
D 64 13C2 PFHxDA



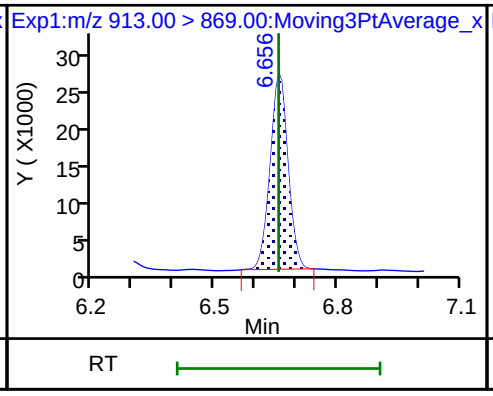
63 Perfluorohexadecanoic acid



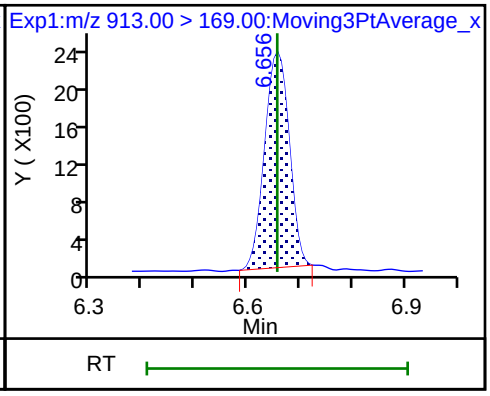
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

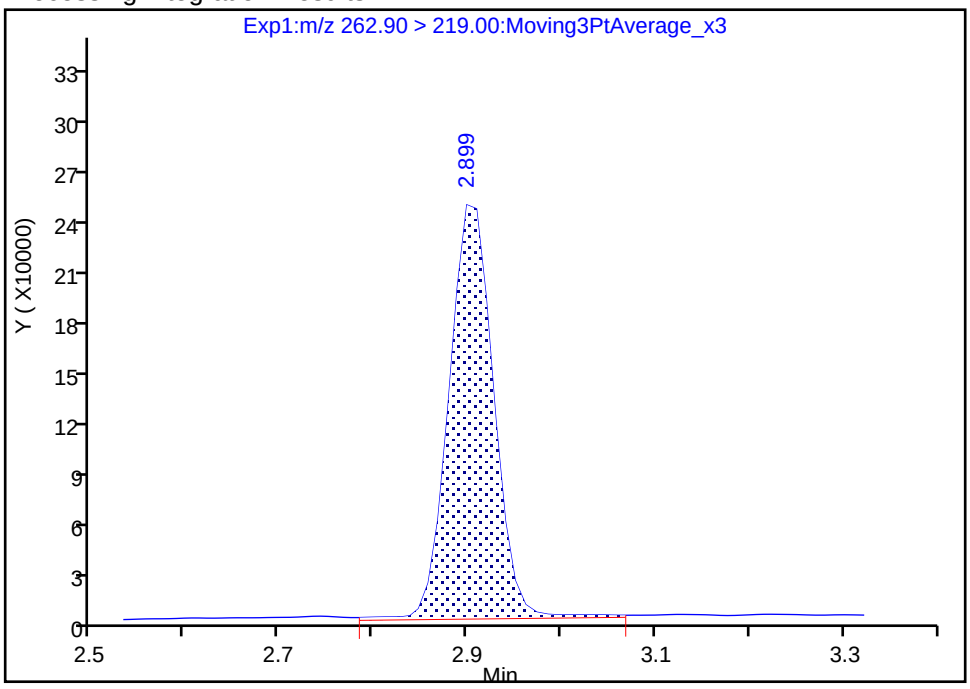
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d
Injection Date: 04-Jun-2020 12:15:08 Instrument ID: A15
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

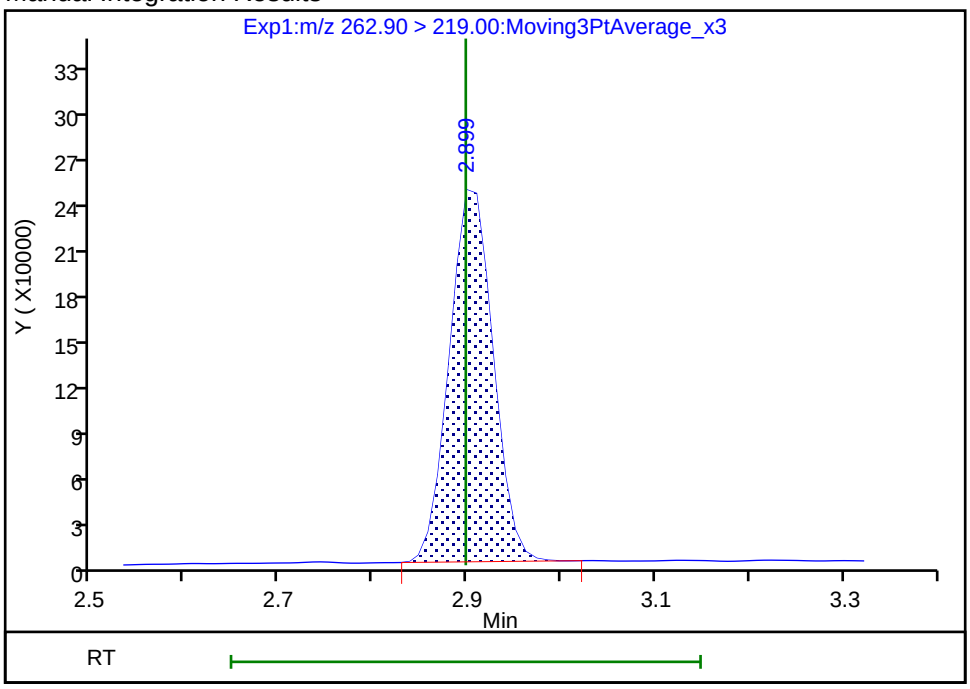
Processing Integration Results

RT: 2.90
Area: 821997
Amount: 0.244886
Amount Units: ng/ml



Manual Integration Results

RT: 2.90
Area: 792080
Amount: 0.237182
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:33:21
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

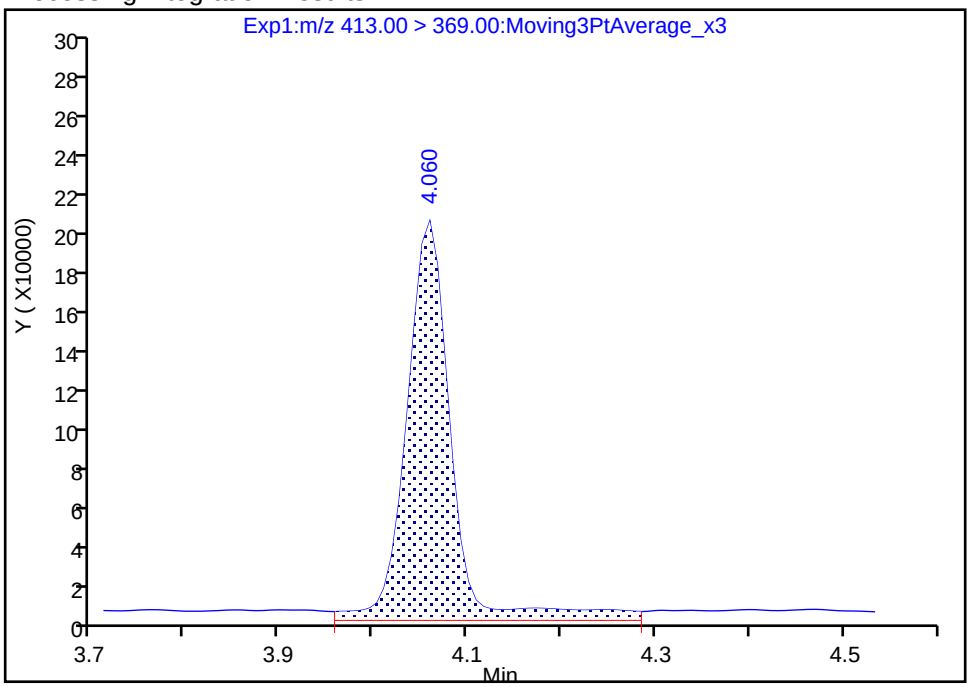
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d
Injection Date: 04-Jun-2020 12:15:08 Instrument ID: A15
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

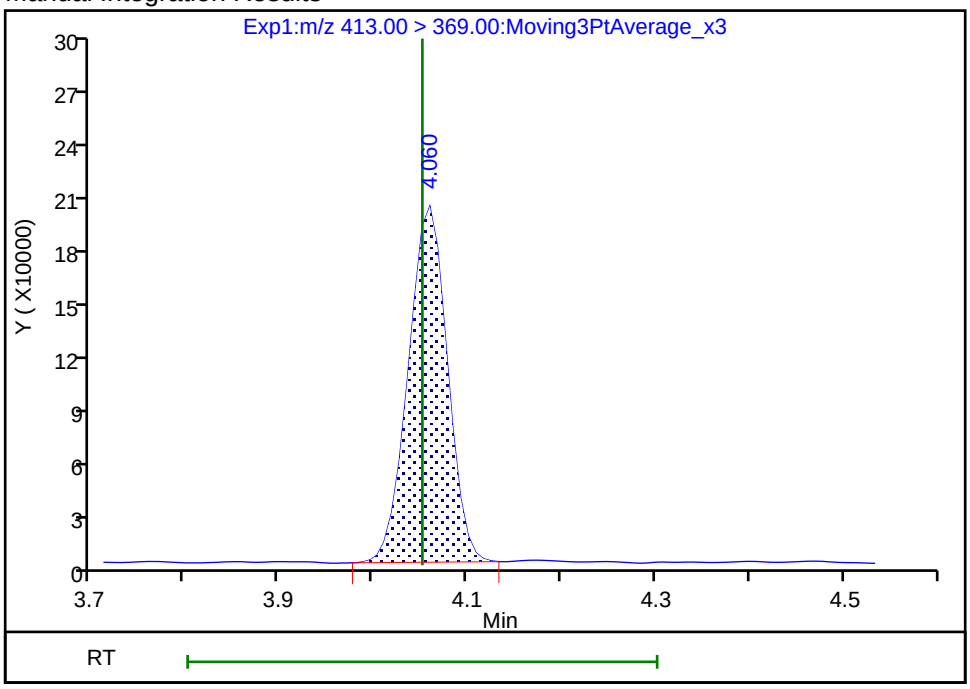
Processing Integration Results

RT: 4.06
Area: 675308
Amount: 0.257298
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 573324
Amount: 0.223401
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:33:45
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

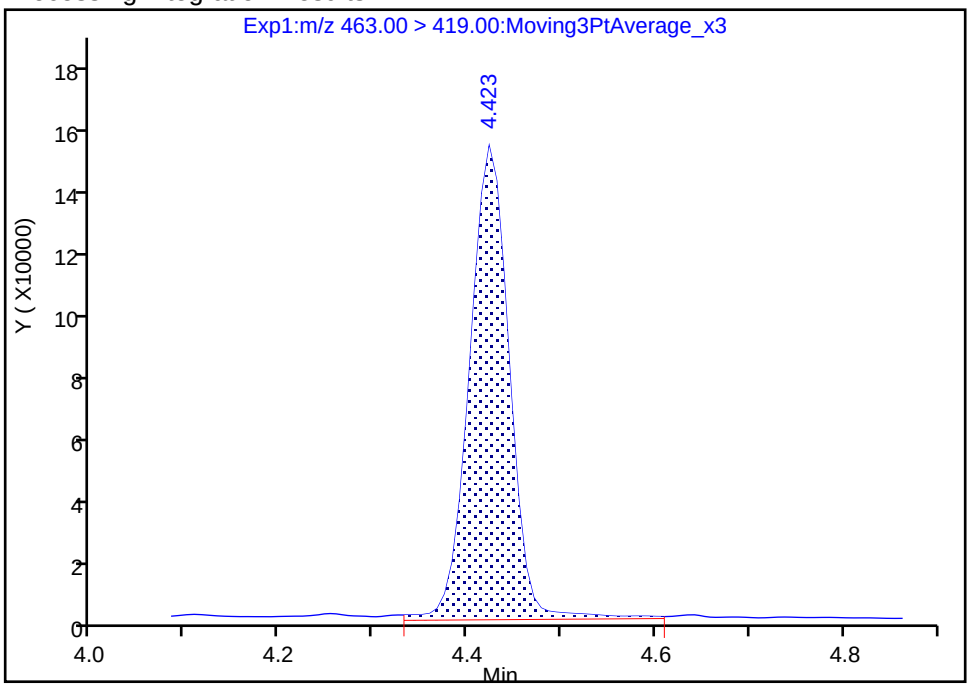
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d
Injection Date: 04-Jun-2020 12:15:08 Instrument ID: A15
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

31 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

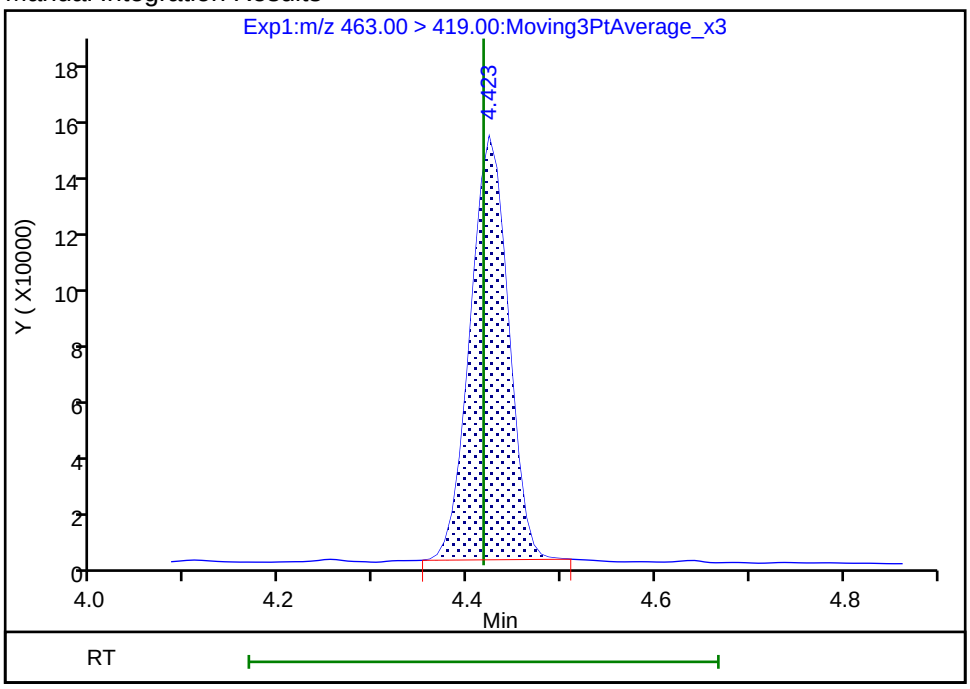
Processing Integration Results

RT: 4.42
Area: 453816
Amount: 0.235127
Amount Units: ng/ml



Manual Integration Results

RT: 4.42
Area: 427845
Amount: 0.223389
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:34:11
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

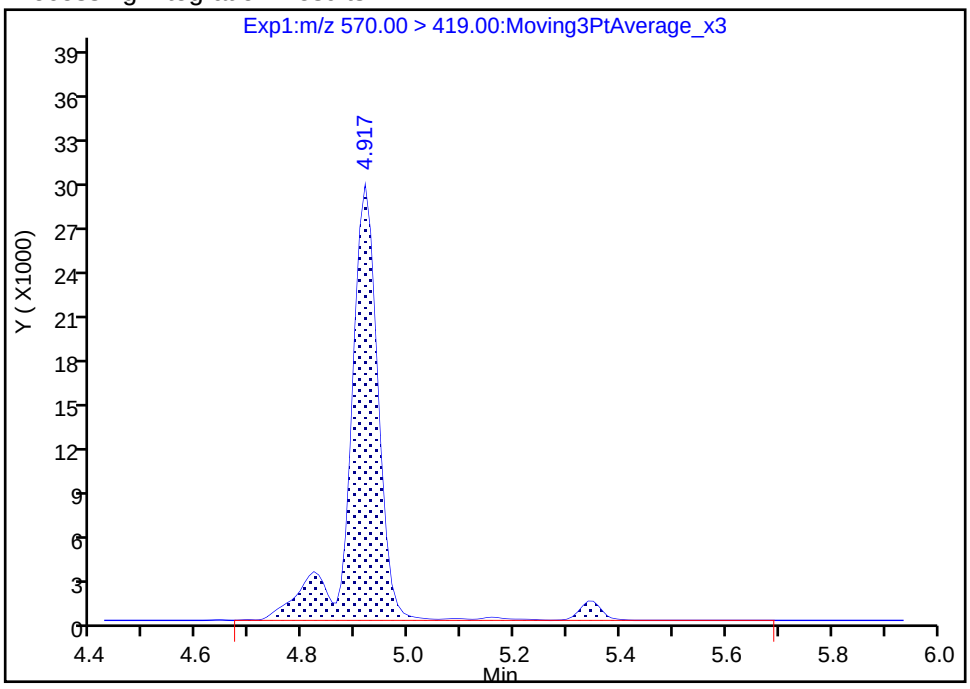
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d				
Injection Date:	04-Jun-2020 12:15:08	Instrument ID:	A15		
Lims ID:	IC L3 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

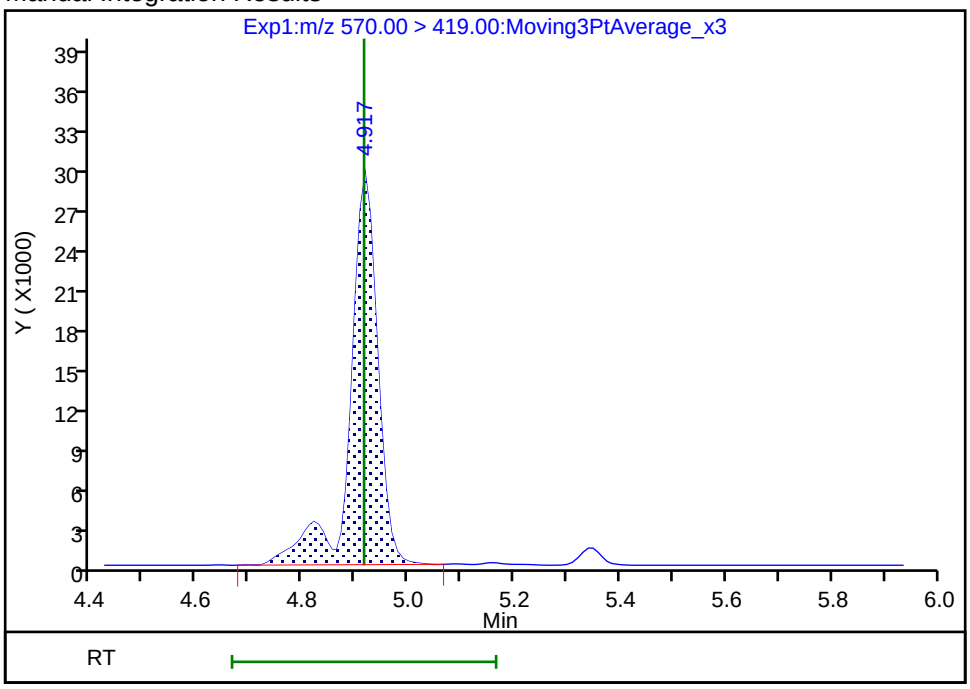
Processing Integration Results

RT: 4.92
Area: 113028
Amount: 0.249465
Amount Units: ng/ml



Manual Integration Results

RT: 4.92
Area: 107484
Amount: 0.238899
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:34:29
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

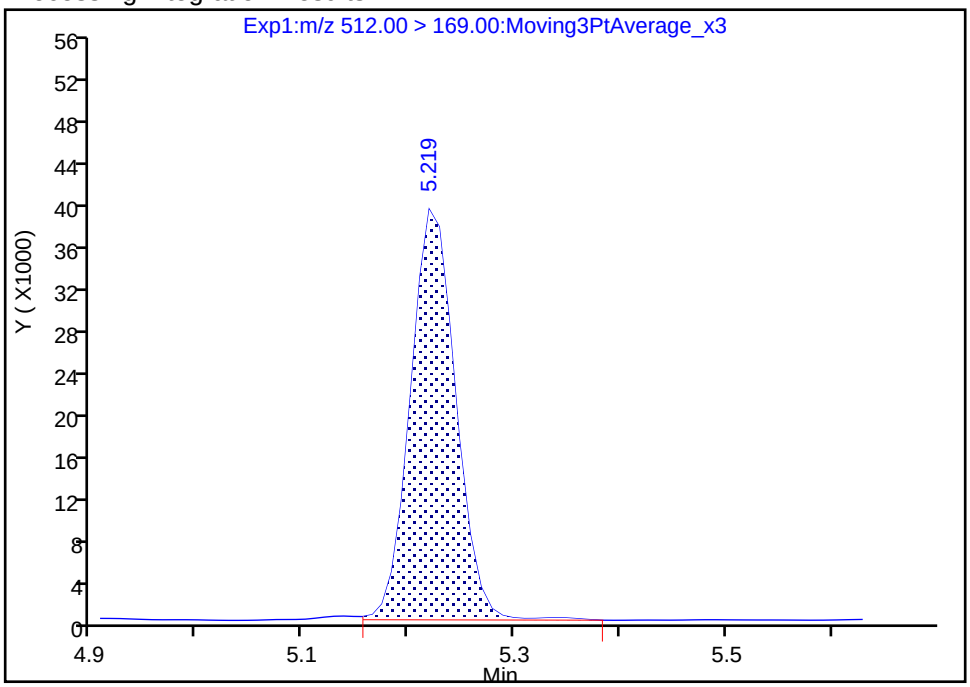
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d
Injection Date: 04-Jun-2020 12:15:08 Instrument ID: A15
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

50 NMeFOSA, CAS: 31506-32-8

Signal: 1

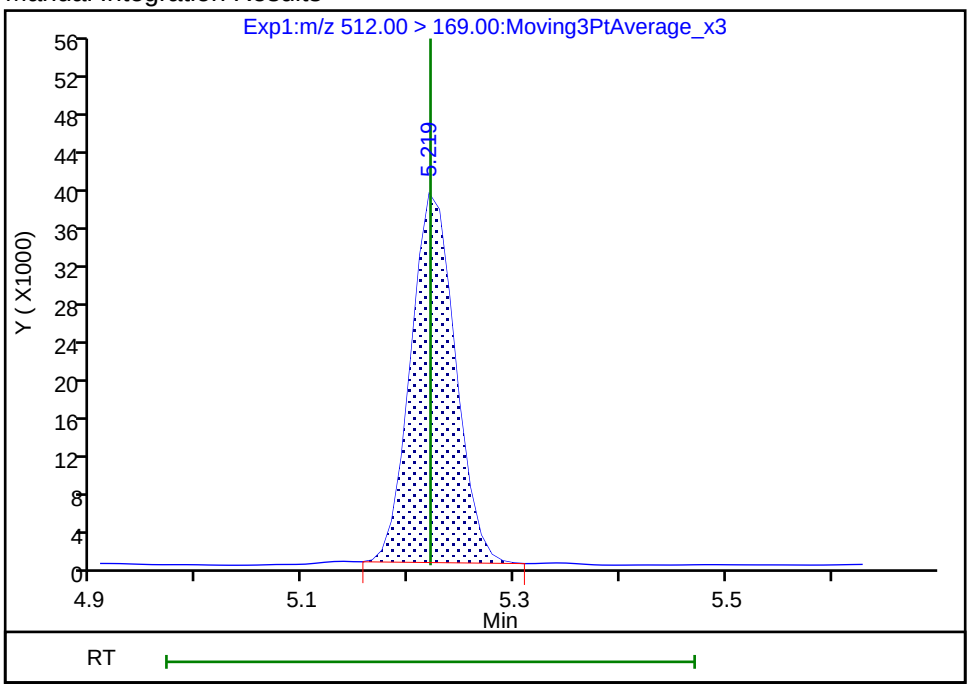
Processing Integration Results

RT: 5.22
Area: 117405
Amount: 0.242059
Amount Units: ng/ml



Manual Integration Results

RT: 5.22
Area: 114727
Amount: 0.237286
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:35:03
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_007.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 04-Jun-2020 12:24:14 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 4 (26)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:32 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:37:40
Ratio Calibration: Average of Initial Calibration

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	2.546	2.549	-0.003	0.629	9136872	2.37		94.7	18601	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.554	2.551	0.003	1.003	3470137	1.03		103	942	
D 4 13C5 PFPeA										
267.90 > 223.00	2.896	2.895	0.001	0.716	8414937	2.44		97.6	13950	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.896	2.898	-0.002	1.000	3218181	0.9491		94.9	244	
D 9 13C3 PFBS										
301.90 > 80.00	2.927	2.930	-0.003	0.723	5371544	2.25		96.6	14868	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.927	2.930	-0.003	1.000	1950584	0.8660	Target=2.14	98.0	900	
298.90 > 99.00	2.927	2.930	-0.003	1.000	918450		2.12(1.07-3.21)	98.0	581	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.228	3.226	0.002	0.798	710696	2.23		95.7	1646	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.228	3.227	0.001	1.000	665002	0.9688		104	9818	
D 11 13C2 PFHxA										
315.00 > 270.00	3.265	3.267	-0.002	0.807	8154944	2.43		97.4	17502	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.265	3.267	-0.002	1.000	2966517	0.9700	Target=15.73	97.0	1448	
313.00 > 119.00	3.265	3.267	-0.002	1.000	202253		14.67(7.86-23.59)	97.0	557	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.285	3.285	0.0	1.122	1588606	0.9374	Target=2.69	99.9	6700	
349.00 > 99.00	3.285	3.285	0.0	1.122	588797		2.70(1.35-4.04)	99.9	2955	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.381	3.386	-0.005	0.835	1765106	2.30		92.1	9143	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.381	3.386	-0.005	1.000	689188	1.07		107	7370	
D 18 13C4 PFHpA										
367.00 > 322.00	3.656	3.661	-0.005	0.904	6413151	2.41		96.5	14801	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.656	3.662	-0.006	1.000	2719950	1.05	Target=3.80	105	986	
363.00 > 169.00	3.656	3.662	-0.006	1.000	708487		3.84(1.90-5.71)	105	2915	
D 17 18O2 PFHxS										
403.00 > 84.00	3.666	3.667	-0.001	0.906	2649716	2.30		97.4	8664	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.666	3.670	-0.004	1.000	1068371	0.8491	Target=2.99	93.3	4934	
399.00 > 99.00	3.666	3.670	-0.004	1.000	375355		2.85(1.50-4.49)	93.3	996	
19 DONA										
377.00 > 251.00	3.706	3.709	-0.003	0.843	6190367	0.9871	Target=2.14	105	13407	
377.00 > 85.00	3.706	3.709	-0.003	0.843	2878704		2.15(1.07-3.21)	105	6933	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.030	4.030	0.0	0.996	829038	2.36		99.4	5226	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.030	4.032	-0.002	1.000	652691	0.9513		100	4723	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.039	4.046	-0.007	0.919	898706	0.9632	Target=3.77	101	3702	
449.00 > 99.00	4.039	4.046	-0.007	0.919	245852		3.66(1.89-5.66)	101	2588	
$ 26 13C8 PFOA										
421.00 > 376.00	4.039	4.046	-0.007	0.998	3199649	2.17		88.6	9868	
D 25 13C4 PFOA										
417.00 > 372.00	4.047	4.051	-0.004	1.000	5864633	2.44		97.6	12184	
* 23 13C2 PFOA										
415.00 > 370.00	4.047	4.051	-0.004		6096629	2.50			10754	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.047	4.052	-0.005	1.000	2550630	1.03	Target=2.88	103	169	
413.00 > 169.00	4.047	4.052	-0.005	1.000	823931		3.10(1.44-4.31)	103	7327	
$ 28 13C8 PFOS										
507.00 > 99.00	4.395	4.400	-0.005	1.086	679528	2.24		93.7	4369	
D 27 13C4 PFOS										
503.00 > 80.00	4.395	4.402	-0.007	1.086	2044276	2.29		95.8	7422	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.403	4.403	0.0	1.002	763648	0.9023	Target=4.89	97.2	4331	
499.00 > 99.00	4.395	4.403	-0.008	1.000	151424		5.04(2.44-7.33)	97.2	794	M
31 Perfluorononanoic acid										
463.00 > 419.00	4.411	4.417	-0.006	1.000	1874281	0.99	Target=7.00	99.0	373	
463.00 > 169.00	4.411	4.417	-0.006	1.000	266260		7.04(3.50-10.51)	99.0	1225	
D 30 13C5 PFNA										
468.00 > 423.00	4.411	4.417	-0.006	1.090	4666713	2.54		101	10610	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.589	4.592	-0.003	1.044	2244602	0.9614		103	7849	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.728	4.732	-0.004	1.076	681848	1.00	Target=2.77	104	1954	
549.00 > 99.00	4.728	4.732	-0.004	1.076	239776		2.84(1.38-4.15)	104	2262	
D 33 13C8 FOSA										
506.00 > 78.00	4.742	4.747	-0.005	1.172	4426342	2.49		99.8	7590	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.742	4.749	-0.007	1.000	1526209	0.9814		98.1	2743	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.750	4.752	-0.002	1.000	1788273	1.03	Target=10.36	103	513	
513.00 > 169.00	4.750	4.752	-0.002	1.000	160098		11.17(5.18-15.54)	103	218	
D 39 13C2 PFDA										
515.00 > 470.00	4.750	4.754	-0.004	1.174	4515884	2.57		103	12475	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.750	4.755	-0.005	1.000	654827	0.9724		101	3896	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.750	4.755	-0.005	1.174	988595	2.36		98.6	5582	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.904	4.912	-0.008	1.212	1579238	2.41		96.5	2280	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.914	4.915	-0.001	1.002	445393	0.9662		96.6	7475	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.037	5.037	0.0	1.146	592449	0.9882	Target=2.97	103	2411	
599.00 > 99.00	5.037	5.037	0.0	1.146	206001		2.88(1.49-4.46)	103	1855	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.055	5.060	-0.005	1.000	1205393	1.13	Target=7.56	113	659	
563.00 > 169.00	5.064	5.060	0.004	1.002	161770		7.45(3.78-11.34)	113	1042	
D 43 13C2 PFUnA										
565.00 > 520.00	5.055	5.062	-0.007	1.249	3702710	2.48		99.0	10707	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.064	5.071	-0.007	1.251	1593419	2.39		95.6	1927	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.073	5.075	-0.002	1.002	428790	0.9520		95.2	1534	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.191	5.191	0.0	1.181	2113979	0.9582		102	8176	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.191	5.198	-0.007	1.283	5680746	12.7		102	4227	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.209	5.209	0.0	1.003	495182	1.04		104	1080	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.209	5.215	-0.006	1.287	1288669	2.30		91.9	304	
50 NMeFOSA										
512.00 > 169.00	5.217	5.220	-0.003	1.002	543254	1.12		112	557	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.338	5.338	0.0	1.000	1327041	0.9421	Target=7.18	94.2	230	
613.00 > 169.00	5.338	5.338	0.0	1.000	159454		8.32(3.59-10.76)	94.2	1628	
D 56 13C2 PFDoA										
615.00 > 570.00	5.338	5.339	-0.001	1.319	3587872	2.71		108	8736	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.356	5.362	-0.006	1.128	500599	0.9426		97.8	4367	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.365	5.364	0.001	1.326	6515560	11.9		95.2	5236	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.373	5.376	-0.003	1.001	564377	1.06		106	1299	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.381	5.387	-0.006	1.330	1298529	2.28		91.2	617	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.392	5.395	-0.003	1.002	574700	1.10		110	782	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.553	5.562	-0.009	1.263	211017	1.01	Target=0.79	105	2733	
699.00 > 99.00	5.553	5.562	-0.009	1.263	252730		0.83(0.39-1.18)	105	2548	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.590	5.601	-0.011	1.047	1033363	0.9125	Target=6.63	91.2	170	
663.00 > 169.00	5.590	5.601	-0.011	1.047	146952		7.03(3.32-9.95)	91.2	1116	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.829	5.835	-0.006	1.440	1889089	2.18		87.3	5930	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.838	5.838	0.0	1.002	931047	1.23	Target=8.46	123	255	
713.00 > 219.00	5.829	5.838	-0.009	1.000	104064		8.95(4.23-12.69)	123	1725	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.254	6.257	-0.003	1.546	1480897	2.06		82.5	4206	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.254	6.258	-0.004	1.000	595962	1.16	Target=7.92	116	84.8	
813.00 > 169.00	6.254	6.258	-0.004	1.000	74498		8.00(3.96-11.88)	116	952	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.656	6.655	0.001	1.064	342848	1.18	Target=10.24	118	65.8	
913.00 > 169.00	6.649	6.655	-0.006	1.063	32557		10.53(5.12-15.36)	118	573	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_007.d

Injection Date: 04-Jun-2020 12:24:14 Instrument ID: A15

Lims ID: IC L4 Full

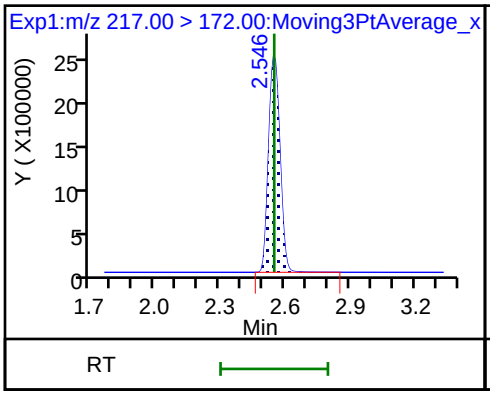
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 4 Worklist Smp#: 5

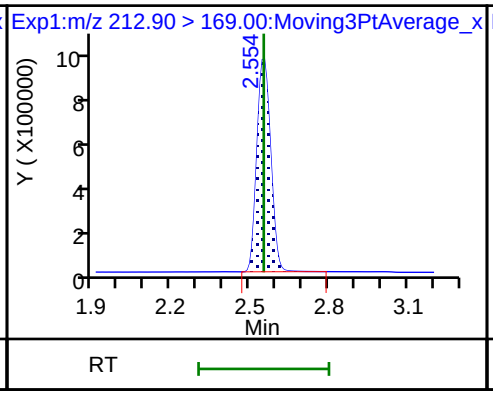
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

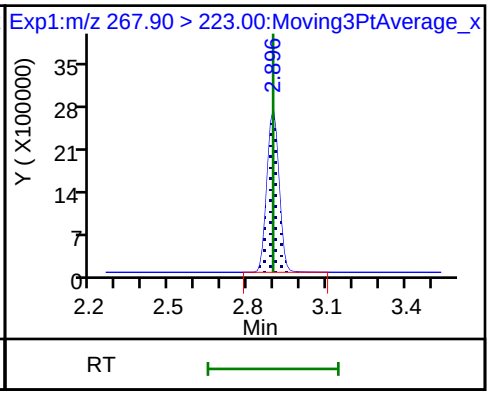
D 1 13C4 PFBA



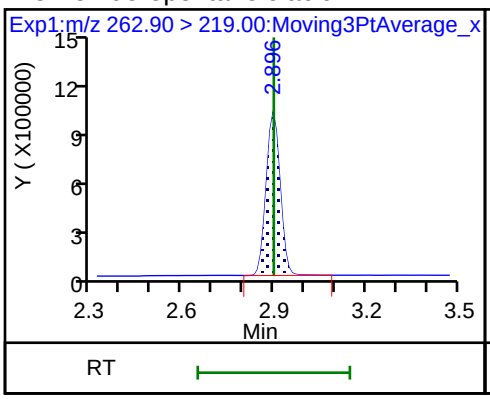
2 Perfluorobutanoic acid



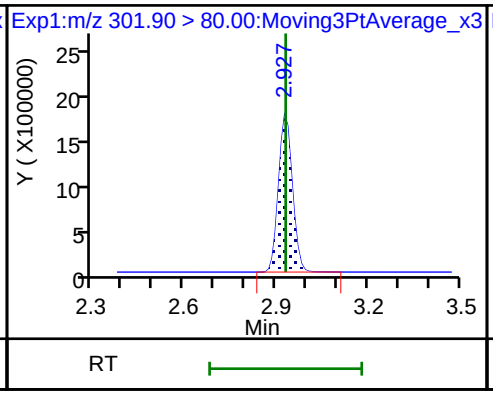
D 4 13C5 PFPeA



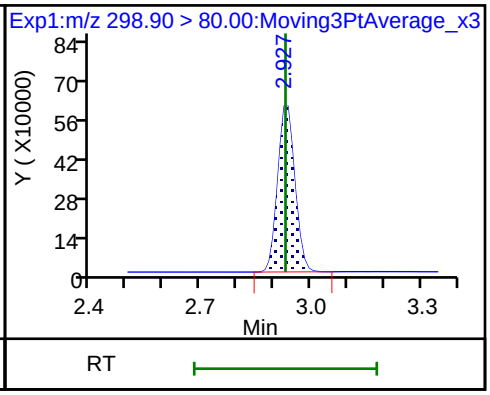
5 Perfluoropentanoic acid



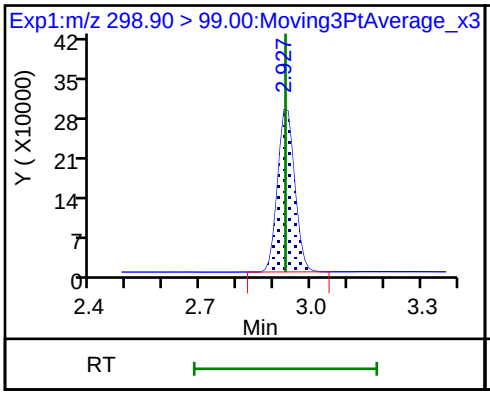
D 9 13C3 PFBS



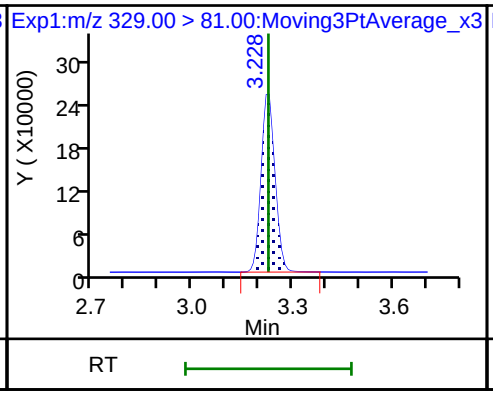
6 Perfluorobutanesulfonic acid



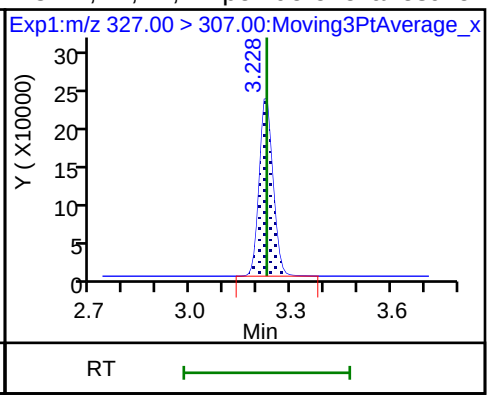
6 Perfluorobutanesulfonic acid



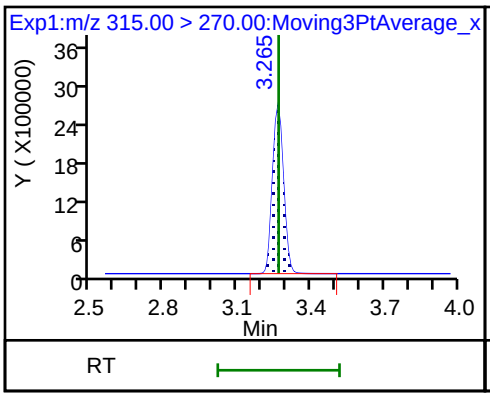
D 7 M2-4:2 FTS



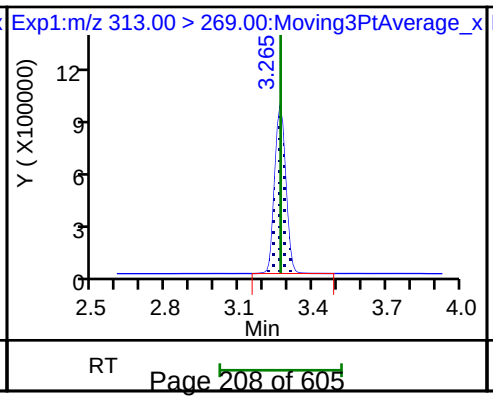
8 1H,1H,2H,2H-perfluorohexanesulfo



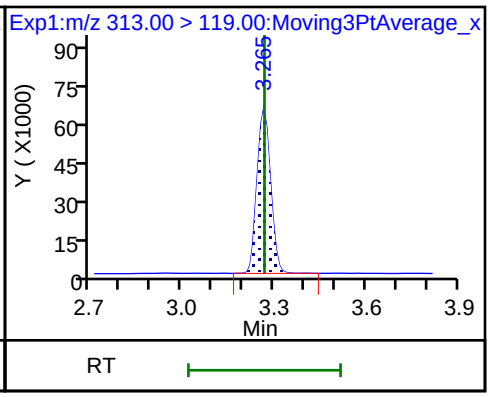
D 11 13C2 PFHxA



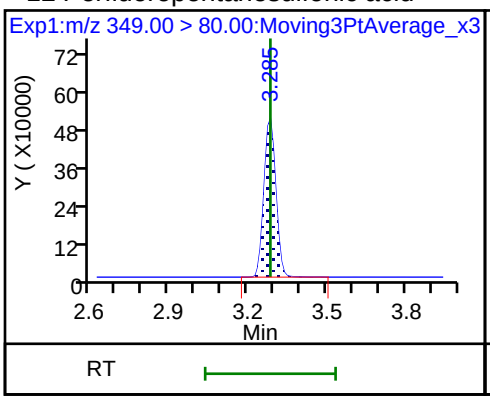
10 Perfluorohexanoic acid



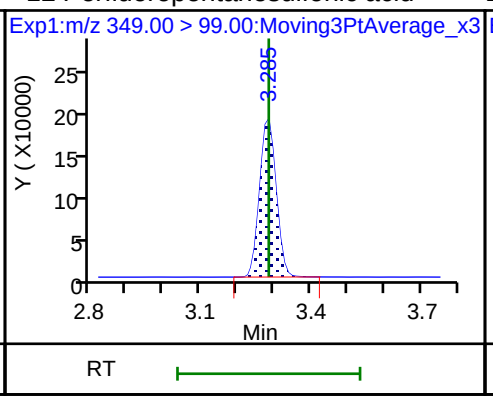
10 Perfluorohexanoic acid



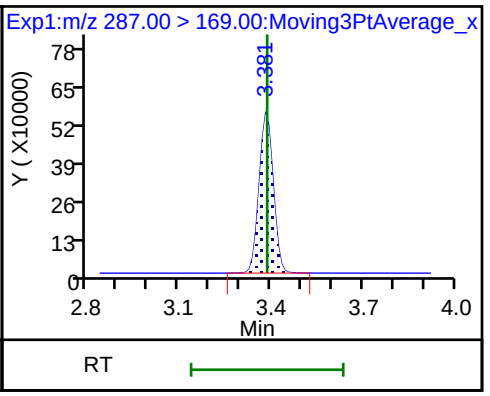
12 Perfluoropentanesulfonic acid



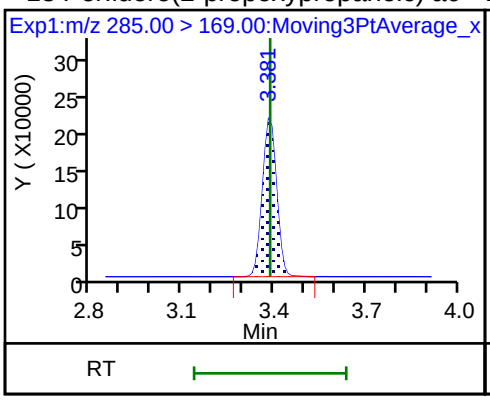
12 Perfluoropentanesulfonic acid



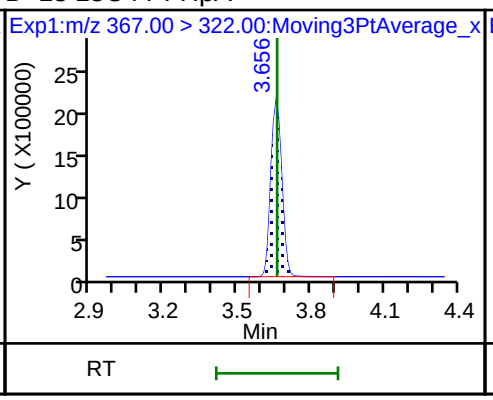
D 14 13C3 HFPO-DA



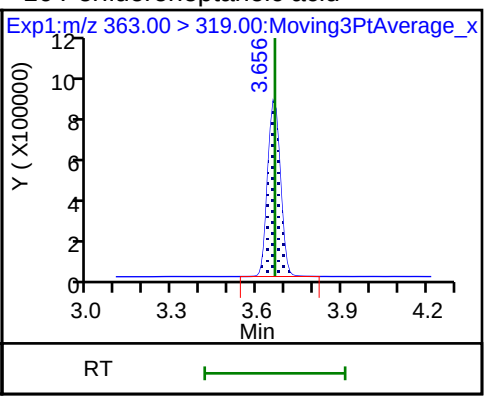
13 Perfluoro(2-propoxypropanoic) ac



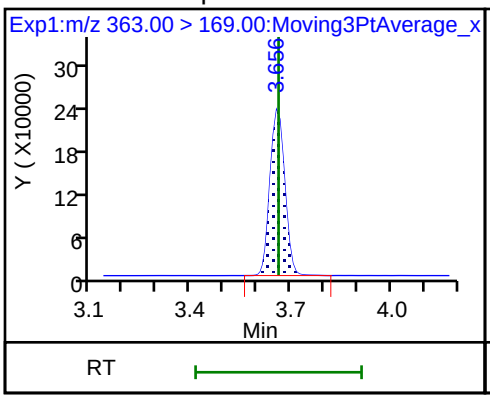
D 18 13C4 PFHpA



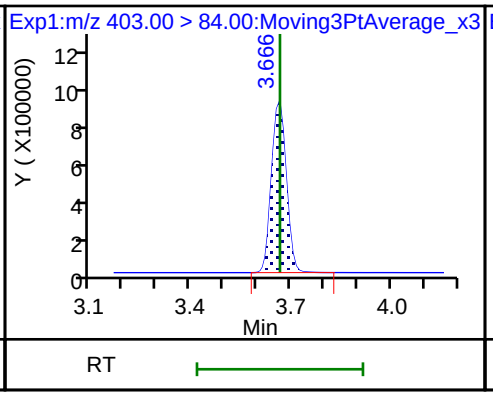
16 Perfluoroheptanoic acid



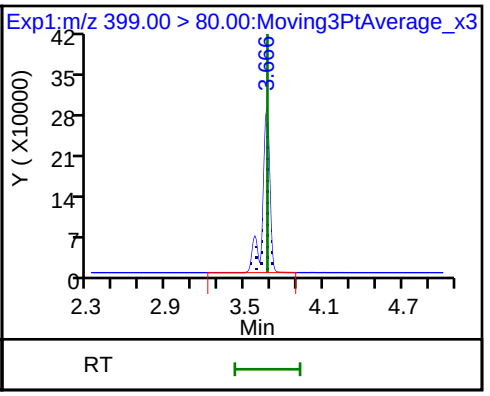
16 Perfluoroheptanoic acid



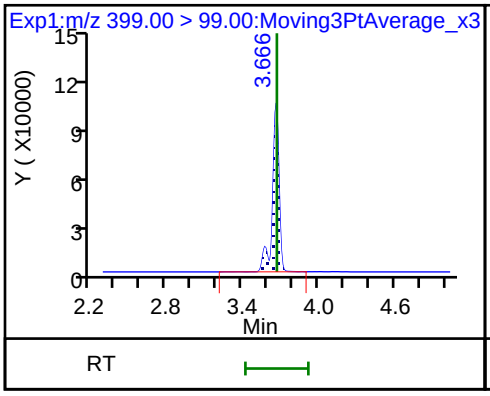
D 17 18O2 PFHxS



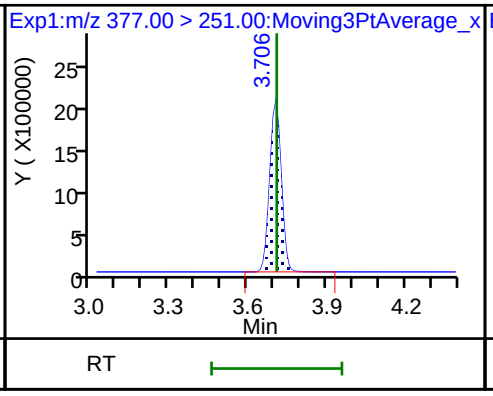
15 Perfluorohexanesulfonic acid



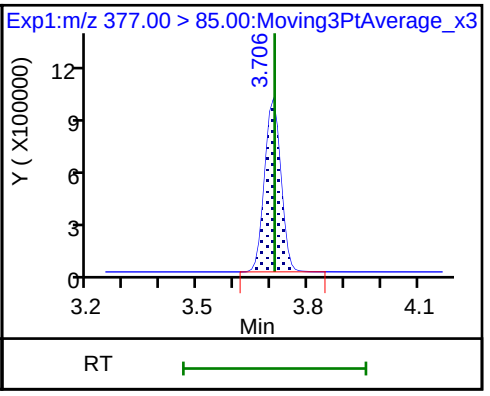
15 Perfluorohexanesulfonic acid



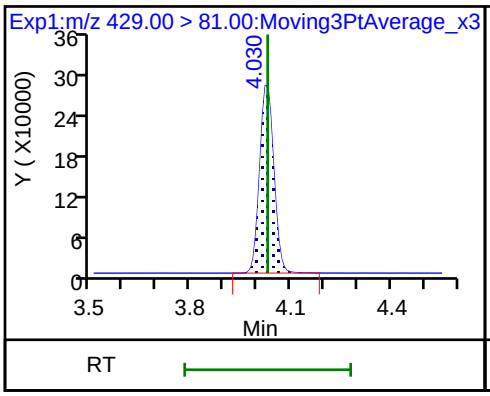
19 DONA



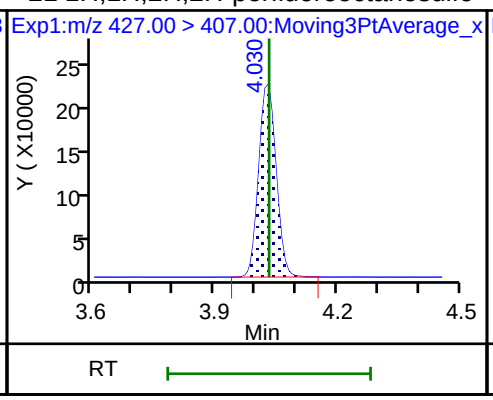
19 DONA



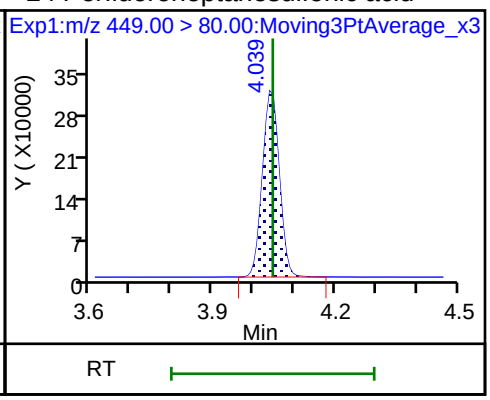
D 20 M2-6:2 FTS



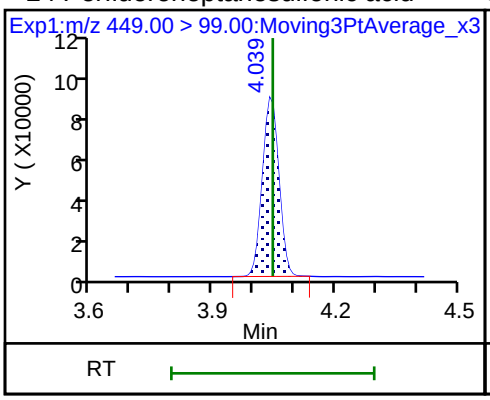
21 1H,1H,2H,2H-perfluorooctanesulfo



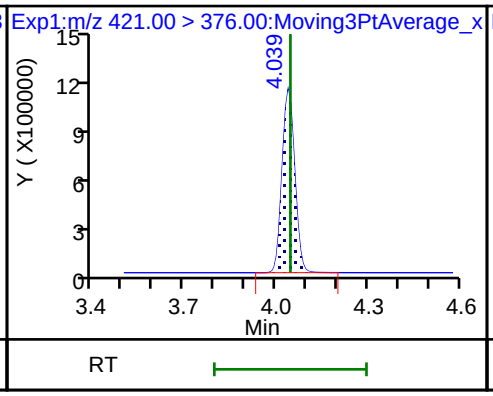
24 Perfluoroheptanesulfonic acid



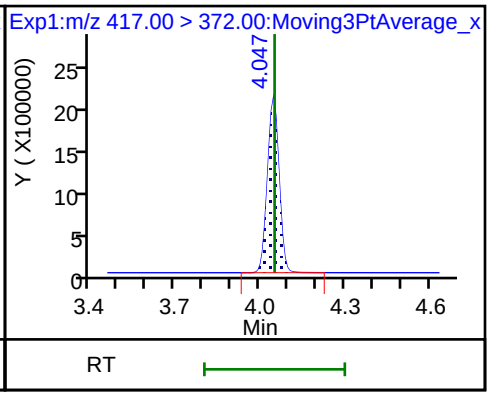
24 Perfluoroheptanesulfonic acid



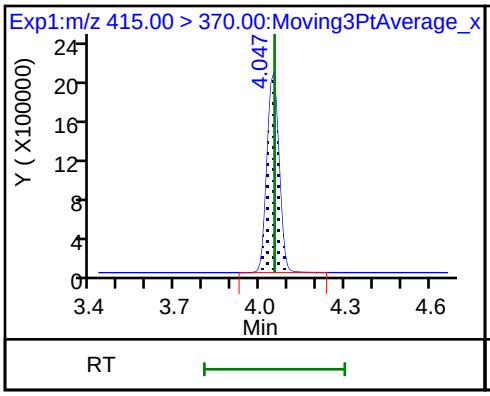
$ 26 13C8 PFOA



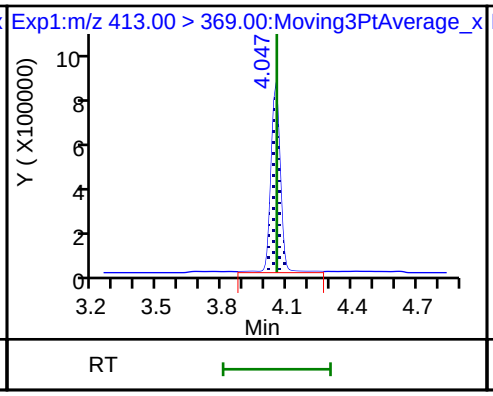
D 25 13C4 PFOA



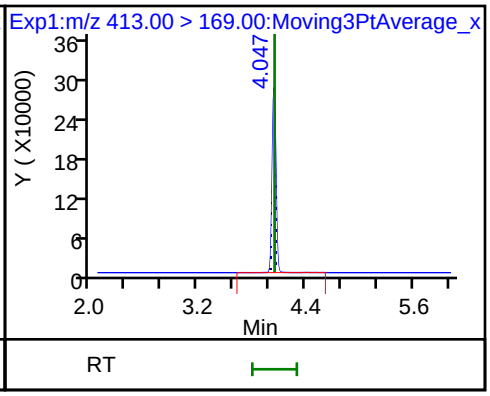
* 23 13C2 PFOA



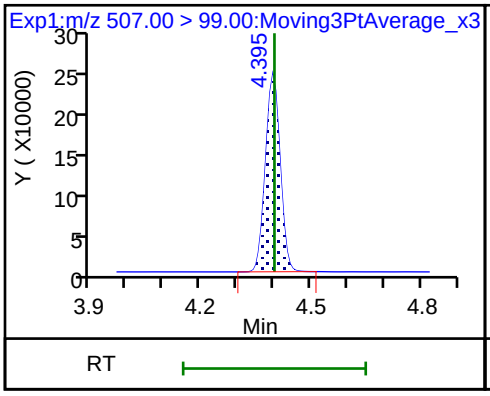
22 Perfluorooctanoic acid



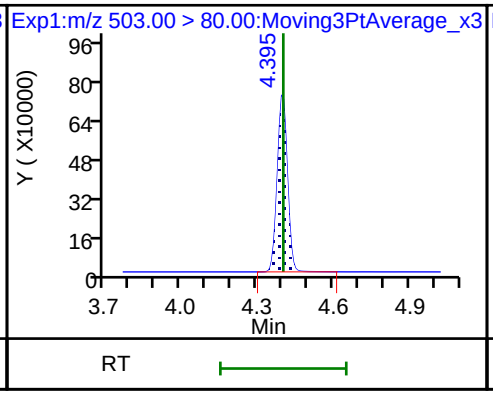
22 Perfluorooctanoic acid



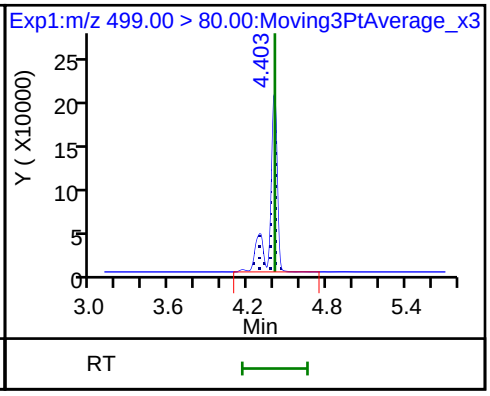
$ 28 13C8 PFOS



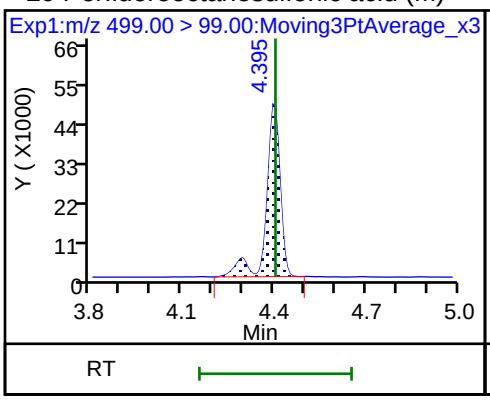
D 27 13C4 PFOS



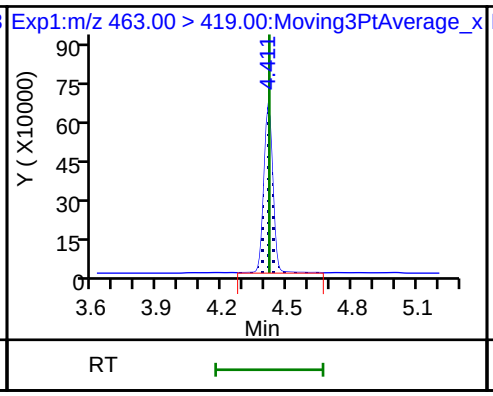
29 Perfluorooctanesulfonic acid



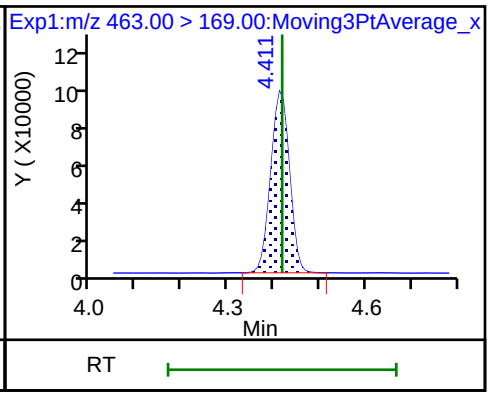
29 Perfluorooctanesulfonic acid (M)



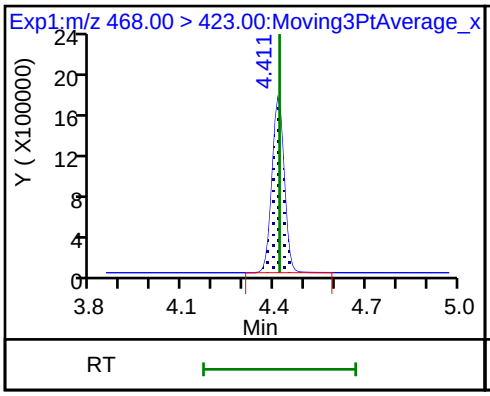
31 Perfluorononanoic acid



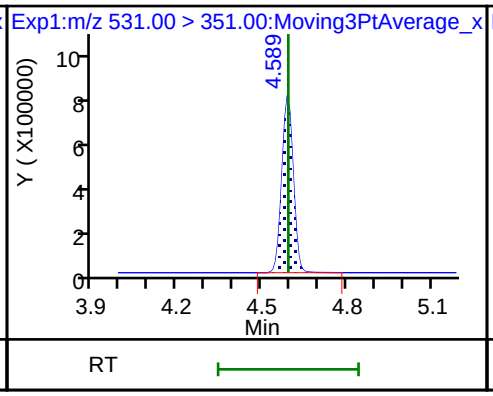
31 Perfluorononanoic acid



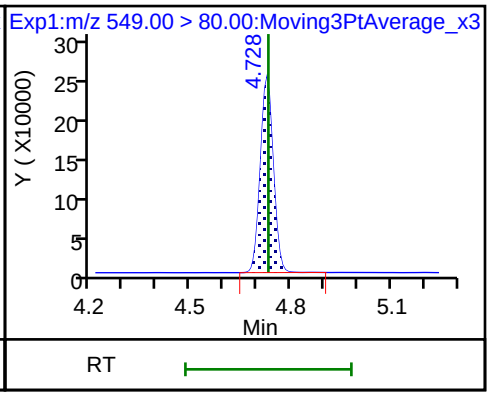
D 30 13C5 PFNA



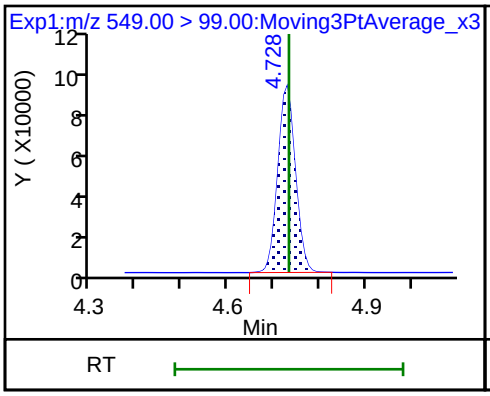
32 9-Chlorohexadecafluoro-3-oxanona



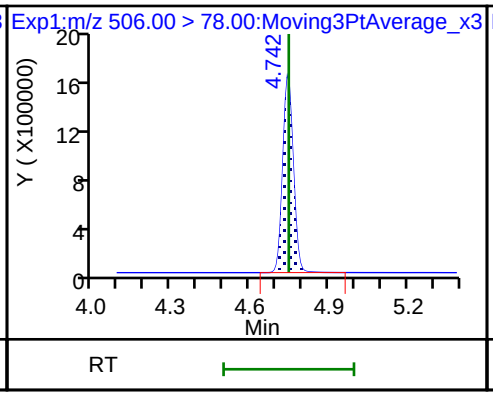
35 Perfluorononanesulfonic acid



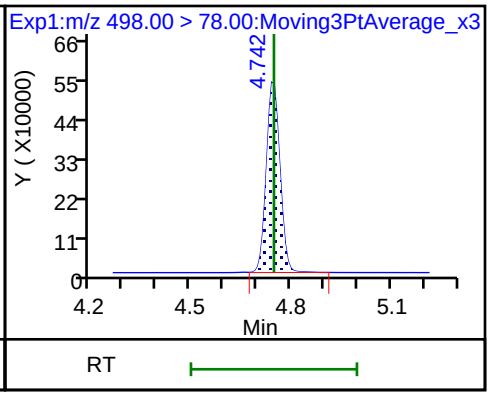
35 Perfluorononanesulfonic acid



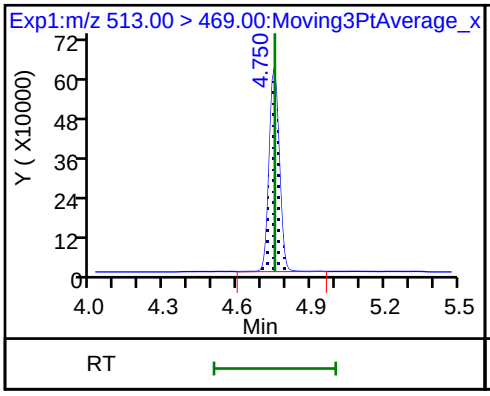
D 33 13C8 FOSA



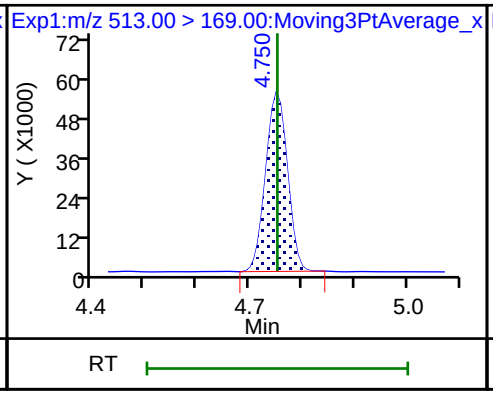
34 Perfluorooctanesulfonamide



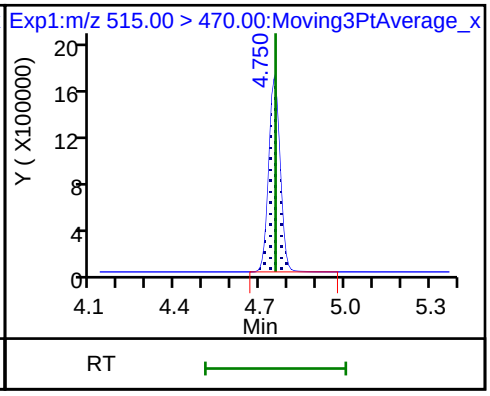
37 Perfluorodecanoic acid



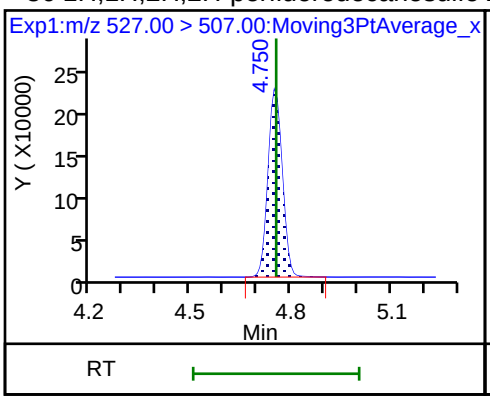
37 Perfluorodecanoic acid



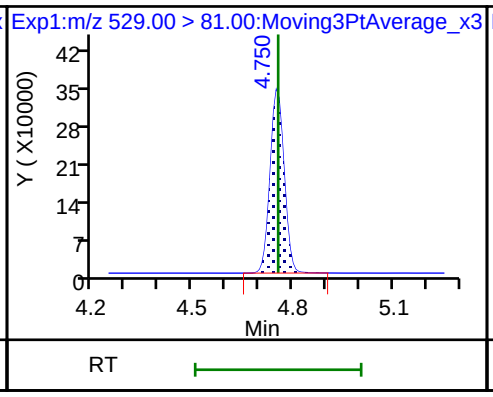
D 39 13C2 PFDA



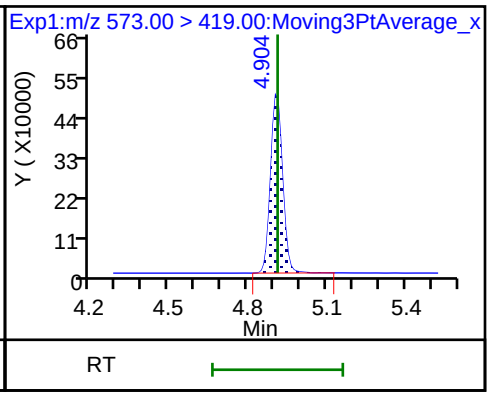
36 1H,1H,2H,2H-perfluorodecanesulfo



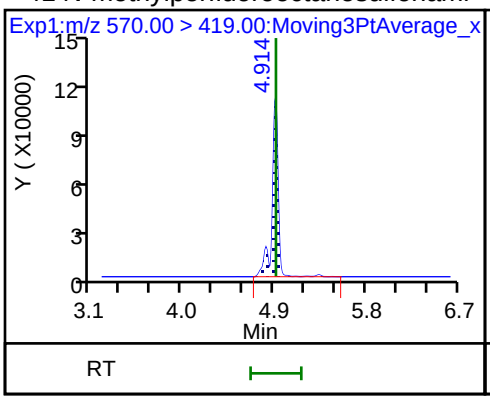
D 38 M2-8:2 FTS



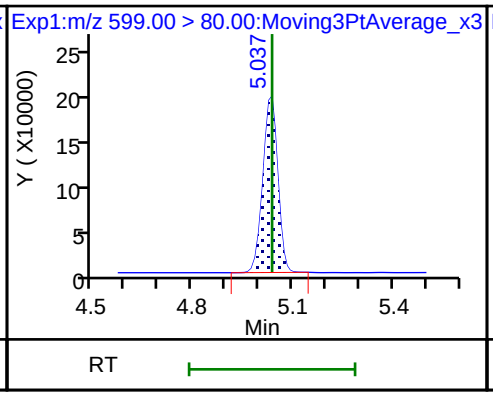
D 40 d3-NMeFOSAA



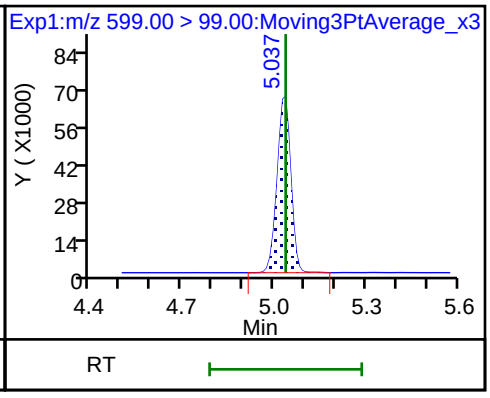
41 N-methylperfluorooctanesulfonami



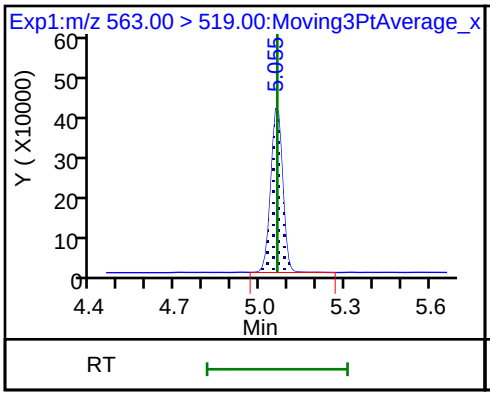
42 Perfluorodecanesulfonic acid



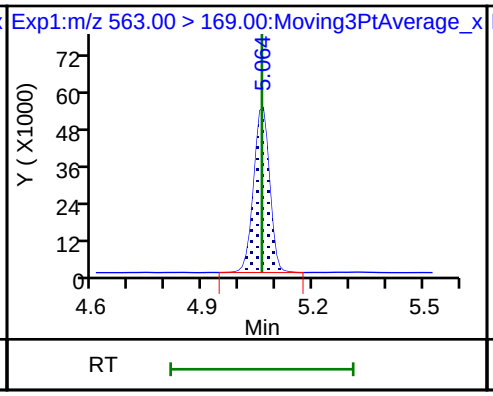
42 Perfluorodecanesulfonic acid



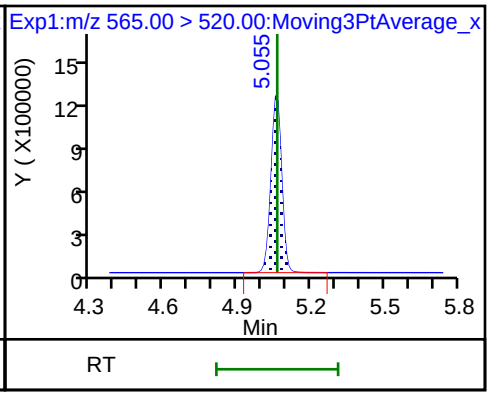
45 Perfluoroundecanoic acid



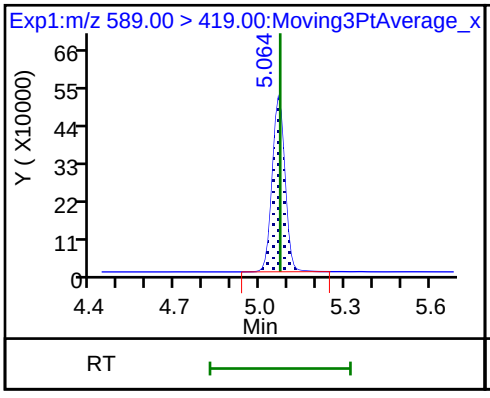
45 Perfluoroundecanoic acid



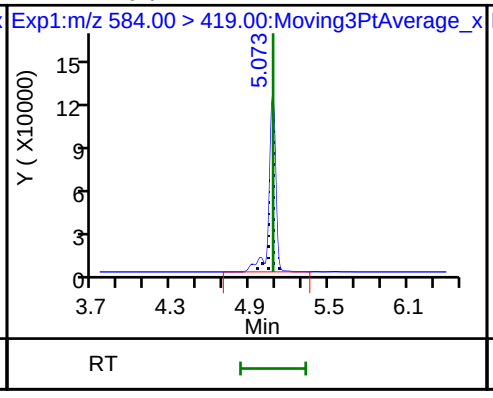
D 43 13C2 PFUnA



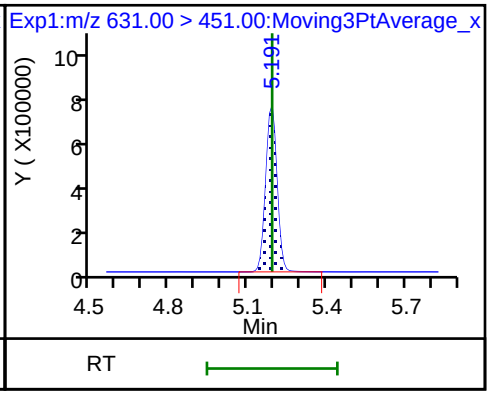
D 44 d5-NEtFOSAA



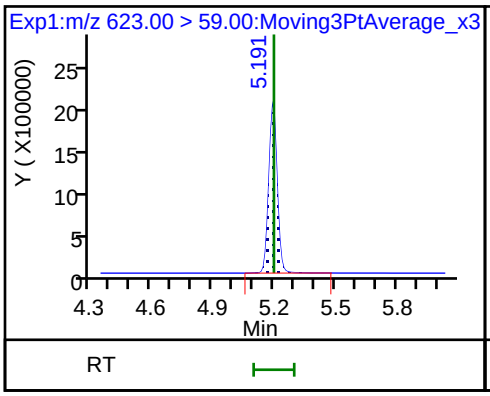
46 N-ethylperfluorooctanesulfonamid



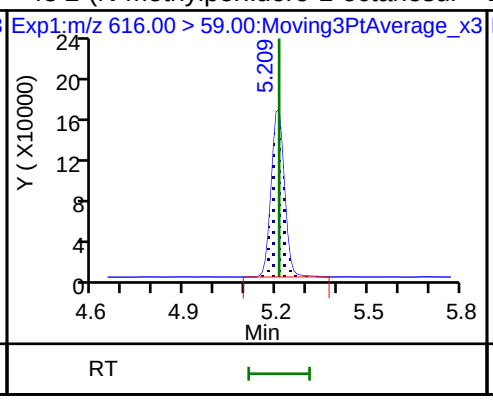
51 11-Chloroeicosafluoro-3-oxaundec



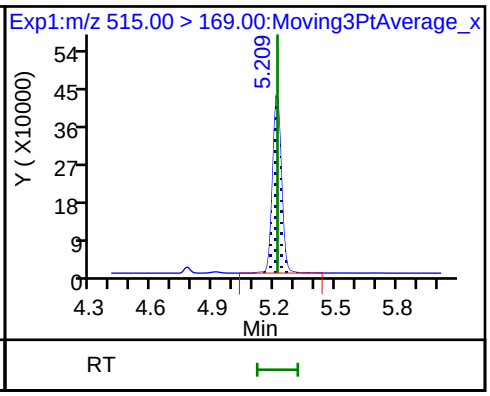
D 47 d7-N-MeFOSE-M



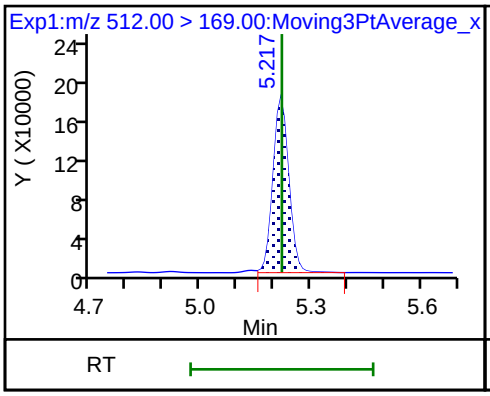
48 2-(N-methylperfluoro-1-octanesul



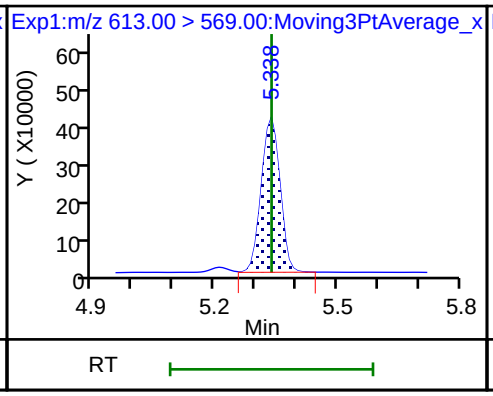
D 49 d-N-MeFOSA-M



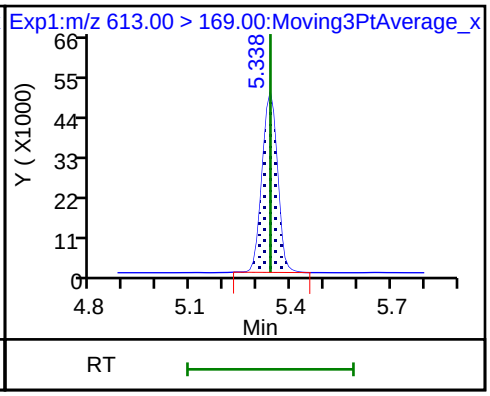
50 NMeFOSA



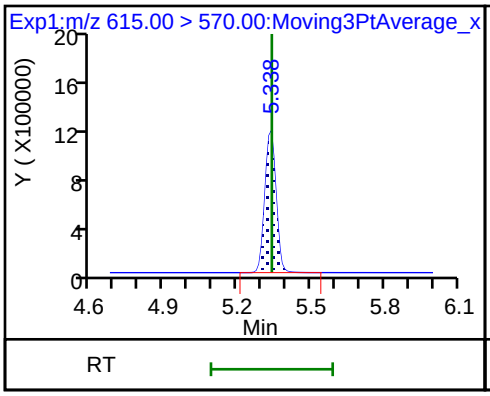
57 Perfluorododecanoic acid



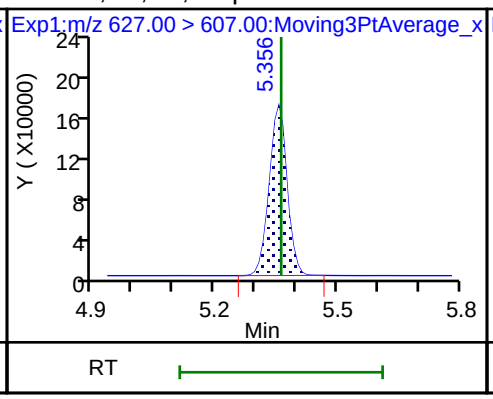
57 Perfluorododecanoic acid



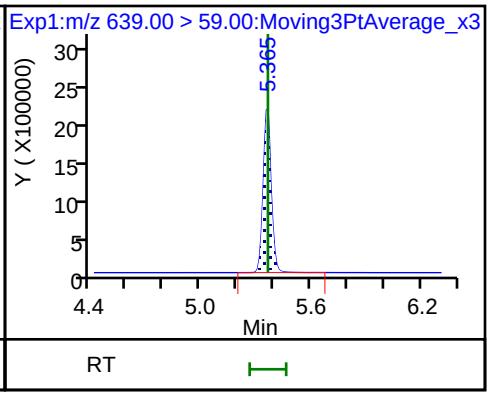
D 56 13C2 PFDoA



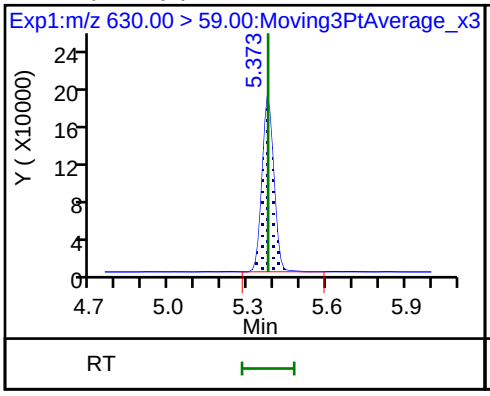
58 1H,1H,2H,2H-perfluorododecanesul



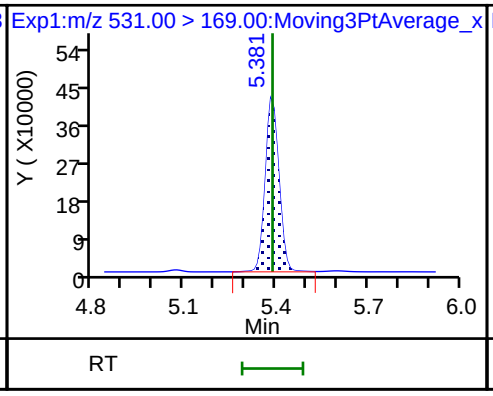
D 52 d9-N-EtFOSE-M



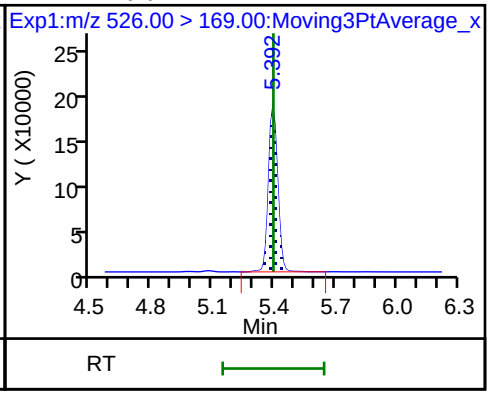
53 2-(N-ethylperfluoro-1-octanesulf



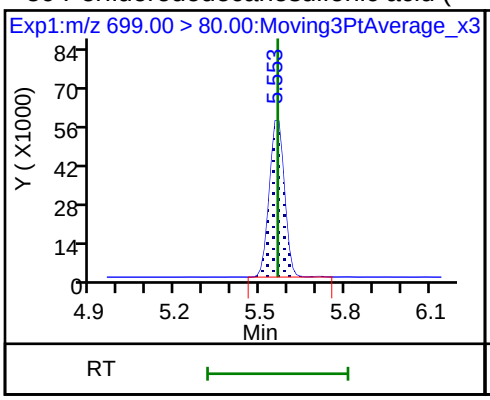
D 54 d-N-EtFOSA-M



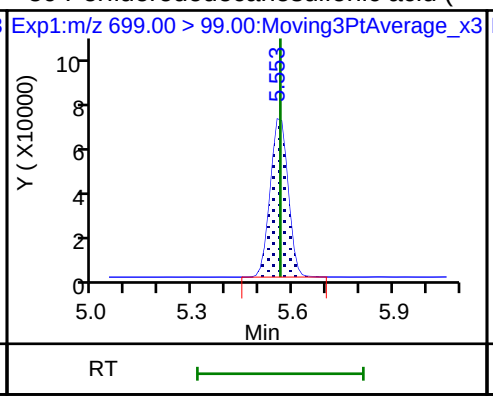
55 N-ethylperfluoro-1-octanesulfona



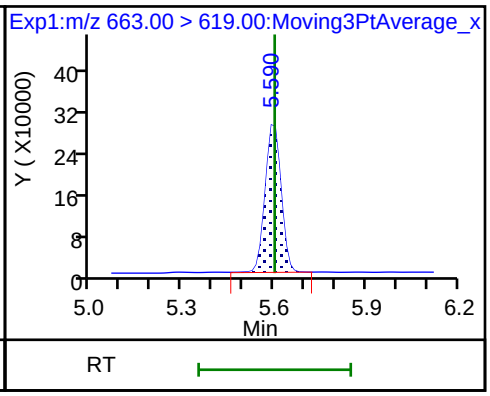
59 Perfluorododecanesulfonic acid (



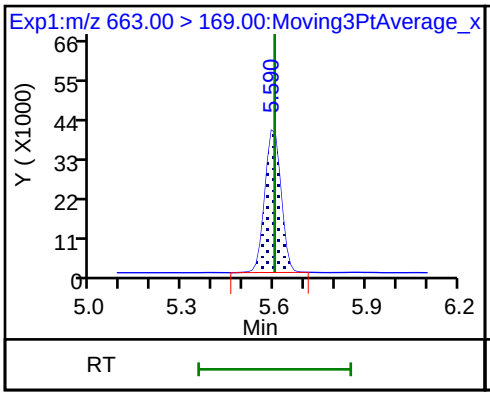
59 Perfluorododecanesulfonic acid (



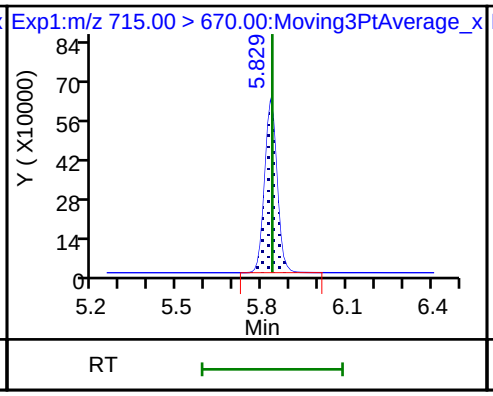
60 Perfluorotridecanoic acid



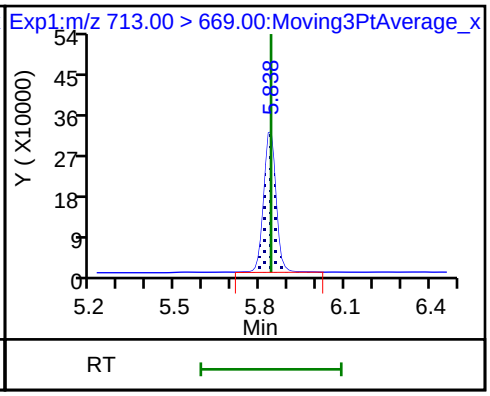
60 Perfluorotridecanoic acid



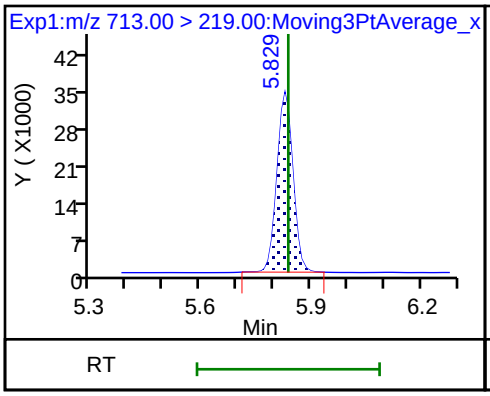
D 61 13C2 PFTeDA



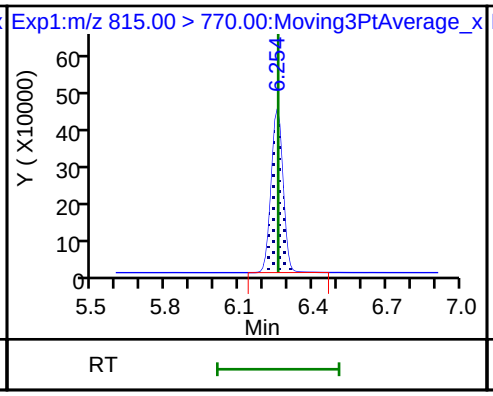
62 Perfluorotetradecanoic acid



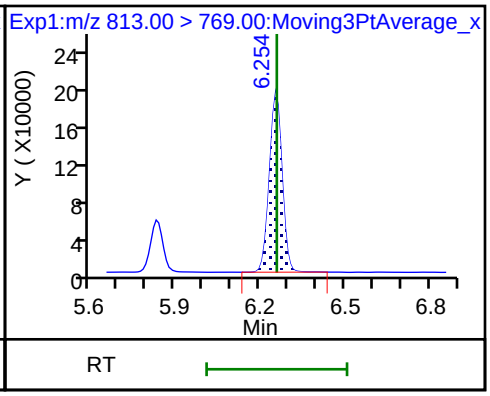
62 Perfluorotetradecanoic acid



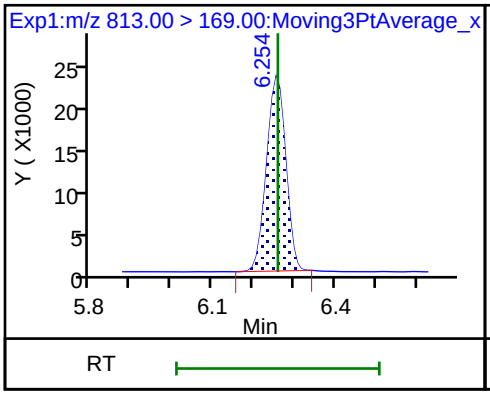
D 64 13C2 PFHxDA



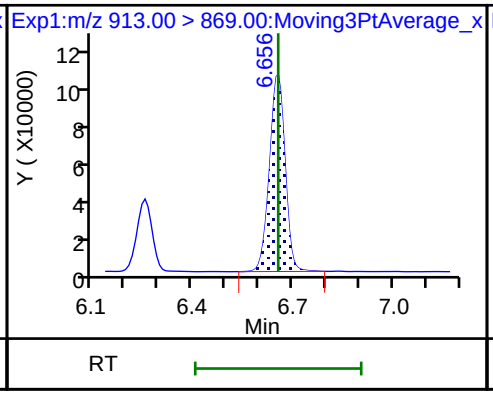
63 Perfluorohexadecanoic acid



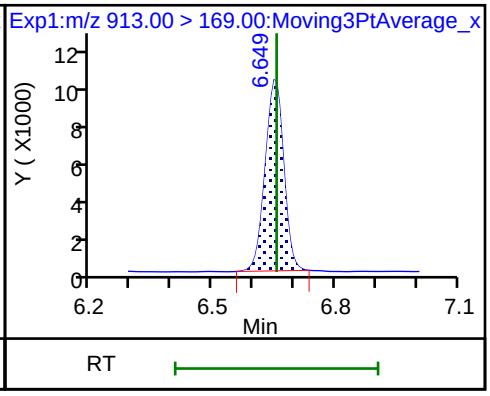
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

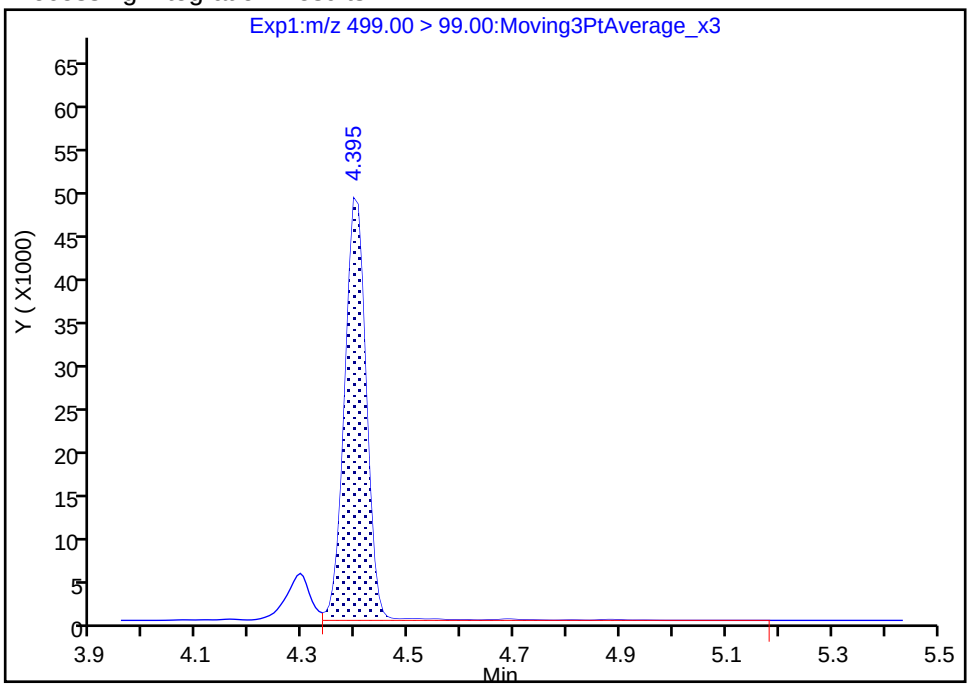
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_007.d				
Injection Date:	04-Jun-2020 12:24:14	Instrument ID:	A15		
Lims ID:	IC L4 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	4	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

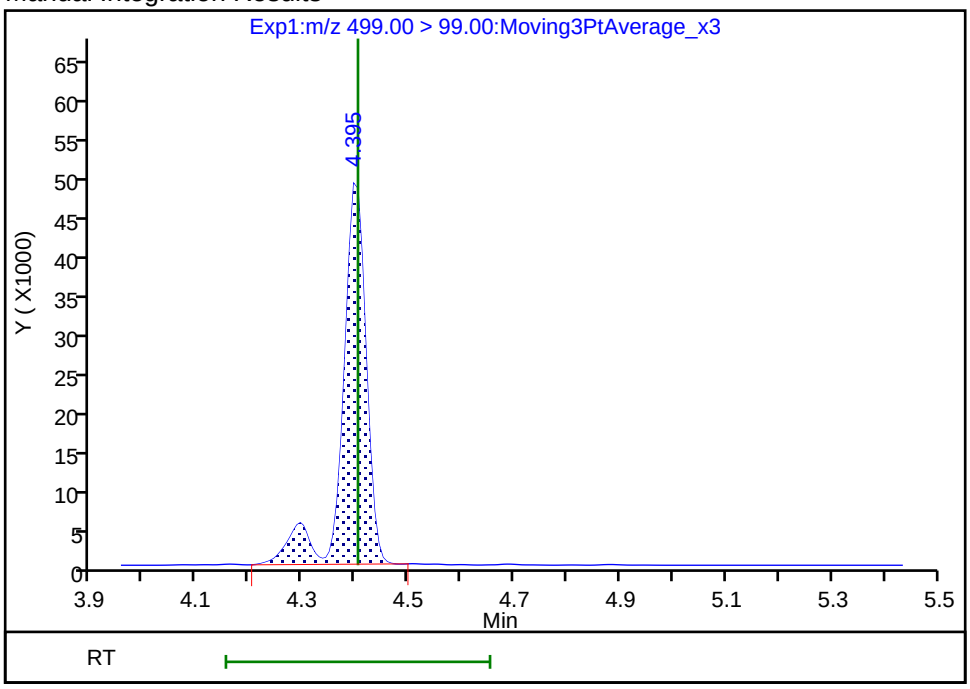
Processing Integration Results

RT: 4.40
Area: 138132
Amount: 0.902345
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 151424
Amount: 0.902345
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:36:58
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_008.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 04-Jun-2020 12:33:23 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 5 (27)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:41 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:39:35
Ratio Calibration: Average of Initial Calibration

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	2.554	2.549	0.005	0.630	9027703	2.43		97.4	17372	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.563	2.551	0.012	1.003	8607524	2.57		103	2294	
D 4 13C5 PFPeA										
267.90 > 223.00	2.896	2.895	0.001	0.715	8137666	2.46		98.2	16235	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.906	2.898	0.008	1.004	7792020	2.38		95.0	598	
D 9 13C3 PFBS										
301.90 > 80.00	2.938	2.930	0.008	0.725	5198591	2.26		97.3	17059	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.938	2.930	0.008	1.000	4878139	2.24	Target=2.14	101	2213	
298.90 > 99.00	2.938	2.930	0.008	1.000	2361241		2.07(1.07-3.21)	101	1537	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.233	3.226	0.007	0.798	669176	2.19		93.8	1399	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.233	3.227	0.006	1.000	1563862	2.42		104	11400	
D 11 13C2 PFHxA										
315.00 > 270.00	3.272	3.267	0.005	0.808	7954661	2.47		98.8	14433	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.272	3.267	0.005	1.000	7282094	2.44	Target=15.73	97.6	3342	
313.00 > 119.00	3.272	3.267	0.005	1.000	475398		15.32(7.86-23.59)	97.6	1231	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.293	3.285	0.008	1.121	4032245	2.46	Target=2.69	105	11375	
349.00 > 99.00	3.293	3.285	0.008	1.121	1492623		2.70(1.35-4.04)	105	5027	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.389	3.386	0.003	0.836	1799762	2.44		97.7	14373	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.389	3.386	0.003	1.000	1748448	2.66		106	8610	
D 18 13C4 PFHpA										
367.00 > 322.00	3.664	3.661	0.003	0.904	6188566	2.42		96.9	18224	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.673	3.662	0.011	1.003	6482928	2.59	Target=3.80	104	2295	
363.00 > 169.00	3.664	3.662	0.002	1.000	1672884		3.88(1.90-5.71)	104	5133	
D 17 18O2 PFHxS										
403.00 > 84.00	3.673	3.667	0.006	0.907	2541523	2.30		97.3	11106	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.673	3.670	0.003	1.000	2657927	2.20	Target=2.99	96.8	6725	
399.00 > 99.00	3.673	3.670	0.003	1.000	909567		2.92(1.50-4.49)	96.8	2608	
19 DONA										
377.00 > 251.00	3.713	3.709	0.004	0.842	14689211	2.34	Target=2.14	99.6	16893	
377.00 > 85.00	3.713	3.709	0.004	0.842	6997251		2.10(1.07-3.21)	99.6	11588	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.036	4.030	0.006	0.996	772132	2.29		96.3	4521	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.036	4.032	0.004	1.000	1514283	2.37		100.0	6862	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.052	4.046	0.006	0.919	2255726	2.42	Target=3.77	102	5801	
449.00 > 99.00	4.052	4.046	0.006	0.919	620389		3.64(1.89-5.66)	102	3631	
$ 26 13C8 PFOA										
421.00 > 376.00	4.052	4.046	0.006	1.000	3405935	2.40		98.2	15024	
D 25 13C4 PFOA										
417.00 > 372.00	4.052	4.051	0.001	1.000	5761918	2.50		99.8	12127	
* 23 13C2 PFOA										
415.00 > 370.00	4.052	4.051	0.001		5857514	2.50			13586	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.052	4.052	0.0	1.000	6031818	2.48	Target=2.88	99.1	470	
413.00 > 169.00	4.052	4.052	0.0	1.000	2033674		2.97(1.44-4.31)	99.1	20463	
$ 28 13C8 PFOS										
507.00 > 99.00	4.400	4.400	0.0	1.086	702645	2.41		101	5286	
D 27 13C4 PFOS										
503.00 > 80.00	4.407	4.402	0.005	1.088	2042488	2.38		99.7	5920	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.407	4.403	0.004	1.000	1971399	2.33	Target=4.89	100	4206	
499.00 > 99.00	4.400	4.403	-0.003	0.998	392900		5.02(2.44-7.33)	100	1646	M
31 Perfluorononanoic acid										
463.00 > 419.00	4.415	4.417	-0.002	1.000	4370924	2.57	Target=7.00	103	769	
463.00 > 169.00	4.415	4.417	-0.002	1.000	618982		7.06(3.50-10.51)	103	2636	
D 30 13C5 PFNA										
468.00 > 423.00	4.415	4.417	-0.002	1.090	4184898	2.37		94.7	8603	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.593	4.592	0.001	1.042	5630815	2.41		104	11968	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.731	4.732	-0.001	1.073	1700810	2.49	Target=2.77	104	4110	
549.00 > 99.00	4.731	4.732	-0.001	1.073	596969		2.85(1.38-4.15)	104	3234	
D 33 13C8 FOSA										
506.00 > 78.00	4.745	4.747	-0.002	1.171	4164895	2.44		97.7	5952	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.745	4.749	-0.004	1.000	3700238	2.53		101	3387	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.753	4.752	0.001	1.000	3945087	2.24	Target=10.36	89.5	1170	
513.00 > 169.00	4.753	4.752	0.001	1.000	406537		9.70(5.18-15.54)	89.5	238	
D 39 13C2 PFDA										
515.00 > 470.00	4.753	4.754	-0.001	1.173	4562785	2.71		108	16011	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.753	4.755	-0.002	1.000	1536987	2.59		108	6735	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.753	4.755	-0.002	1.173	871076	2.17		90.4	3394	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.908	4.912	-0.004	1.211	1524709	2.42		97.0	2344	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.917	4.915	0.002	1.002	1131231	2.54		102	19387	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.038	5.037	0.001	1.143	1487380	2.48	Target=2.97	103	5266	
599.00 > 99.00	5.038	5.037	0.001	1.143	514272		2.89(1.49-4.46)	103	3516	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.057	5.060	-0.003	1.000	2558072	2.55	Target=7.56	102	1435	
563.00 > 169.00	5.057	5.060	-0.003	1.000	349576		7.32(3.78-11.34)	102	1968	
D 43 13C2 PFUnA										
565.00 > 520.00	5.057	5.062	-0.005	1.248	3474271	2.42		96.7	6160	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.066	5.071	-0.005	1.250	1578577	2.47		98.6	1722	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.075	5.075	0.0	1.002	1060515	2.38		95.1	16789	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.193	5.191	0.002	1.178	5308994	2.41		102	9078	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.193	5.198	-0.005	1.281	5476298	12.7		102	3494	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.210	5.209	0.001	1.003	1002590	2.19		87.5	1672	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.210	5.215	-0.005	1.286	1307025	2.43		97.0	190	
50 NMeFOSA										
512.00 > 169.00	5.219	5.220	-0.001	1.002	1369719	2.78		111	617	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.340	5.338	0.002	1.000	3222984	2.86	Target=7.18	114	548	
613.00 > 169.00	5.340	5.338	0.002	1.000	442181		7.29(3.59-10.76)	114	3959	
D 56 13C2 PFDoA										
615.00 > 570.00	5.340	5.339	0.001	1.318	2873956	2.26		90.3	7533	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.358	5.362	-0.004	1.127	1225099	2.62		109	4504	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.358	5.364	-0.006	1.322	6375503	12.1		96.9	4889	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.375	5.376	-0.001	1.003	1311216	2.51		100	2007	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.383	5.387	-0.004	1.328	1342737	2.46		98.2	388	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.394	5.395	-0.001	1.002	1494414	2.78		111	662	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.555	5.562	-0.007	1.260	540600	2.60	Target=0.79	107	4125	
699.00 > 99.00	5.555	5.562	-0.007	1.260	651860		0.83(0.39-1.18)	107	4518	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.605	5.601	0.004	1.050	2454288	2.71	Target=6.63	108	391	
663.00 > 169.00	5.592	5.601	-0.009	1.047	350263		7.01(3.32-9.95)	108	2185	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.830	5.835	-0.005	1.439	2021036	2.43		97.2	5579	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.839	5.838	0.001	1.002	2018998	2.50	Target=8.46	99.9	581	
713.00 > 219.00	5.830	5.838	-0.008	1.000	202772		9.96(4.23-12.69)	99.9	2127	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.254	6.257	-0.003	1.543	1946691	2.82		113	6654	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.254	6.258	-0.004	1.000	1524467	2.28	Target=7.92	91.0	209	
813.00 > 169.00	6.254	6.258	-0.004	1.000	184774		8.25(3.96-11.88)	91.0	2184	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.649	6.655	-0.006	1.063	859961	2.24	Target=10.24	89.8	167	
913.00 > 169.00	6.649	6.655	-0.006	1.063	86590		9.93(5.12-15.36)	89.8	1225	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00027 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:42 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_008.d

Injection Date: 04-Jun-2020 12:33:23 Instrument ID: A15

Lims ID: IC L5 Full

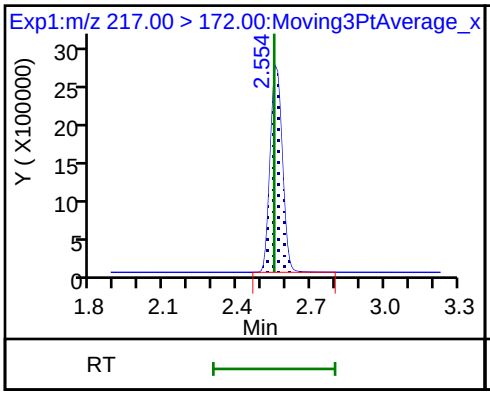
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 5 Worklist Smp#: 6

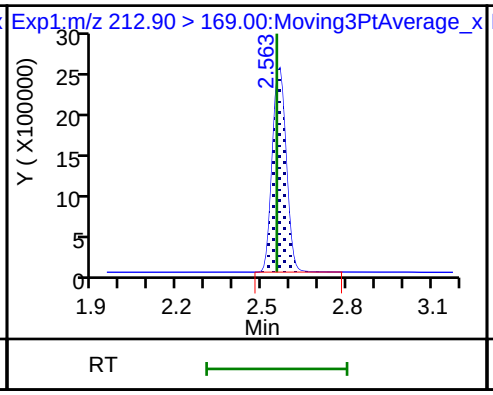
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

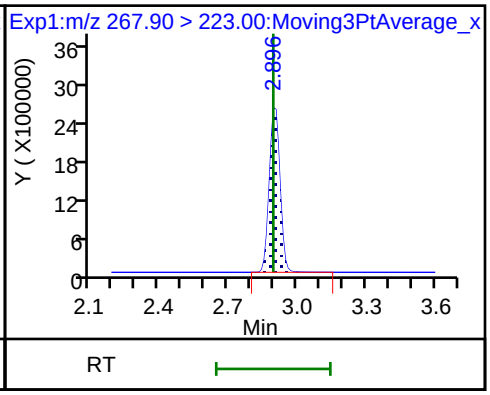
D 1 13C4 PFBA



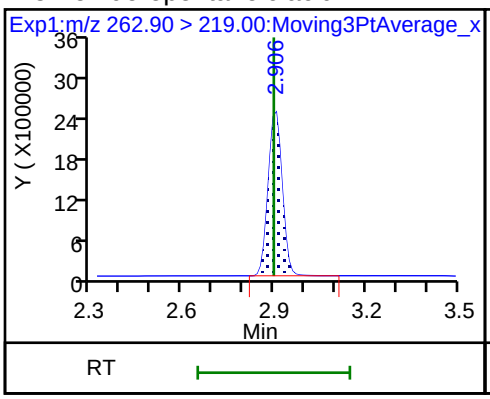
2 Perfluorobutanoic acid



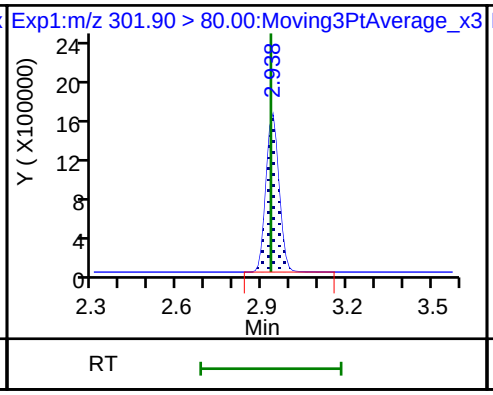
D 4 13C5 PFPeA



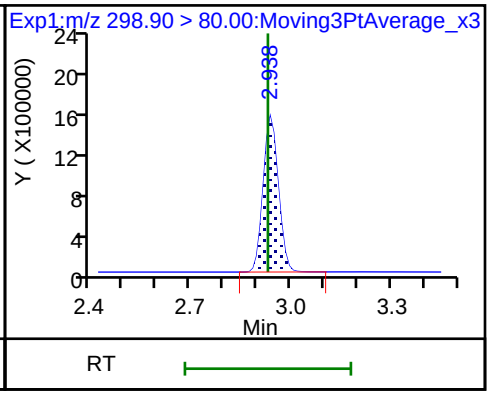
5 Perfluoropentanoic acid



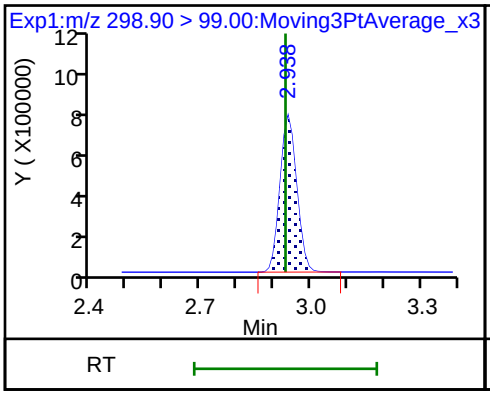
D 9 13C3 PFBS



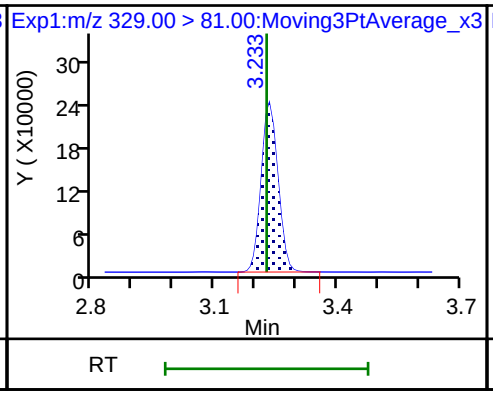
6 Perfluorobutanesulfonic acid



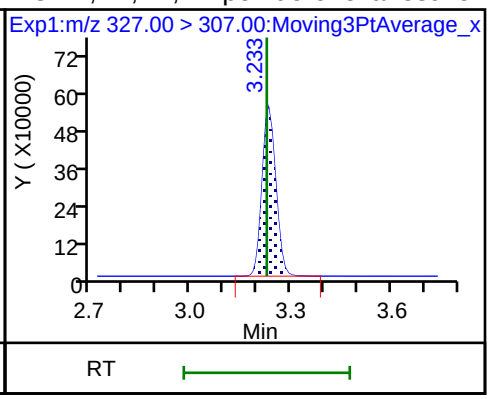
6 Perfluorobutanesulfonic acid



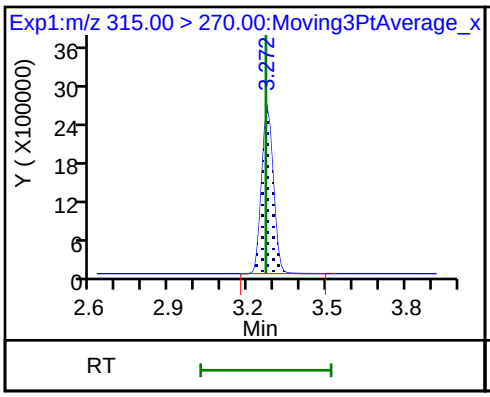
D 7 M2-4:2 FTS



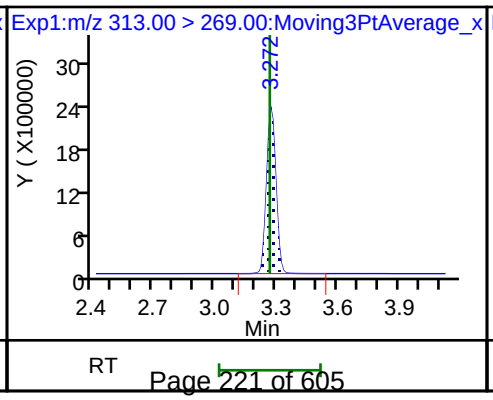
8 1H,1H,2H,2H-perfluorohexanesulfo



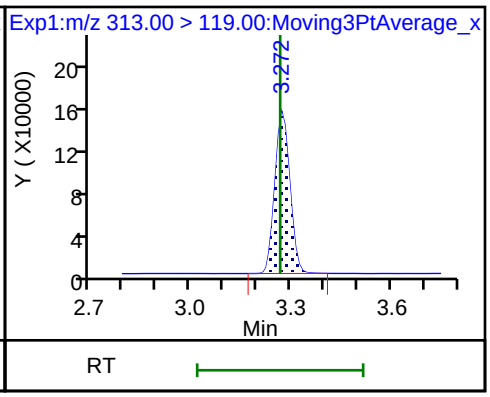
D 11 13C2 PFHxA



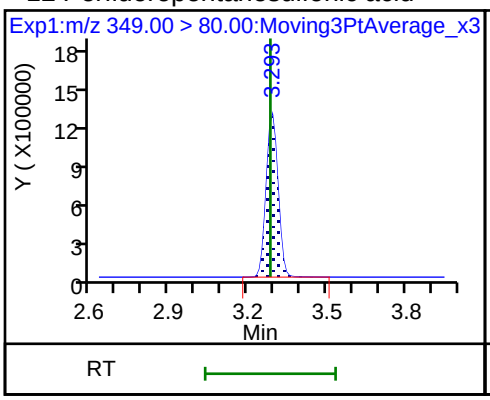
10 Perfluorohexanoic acid



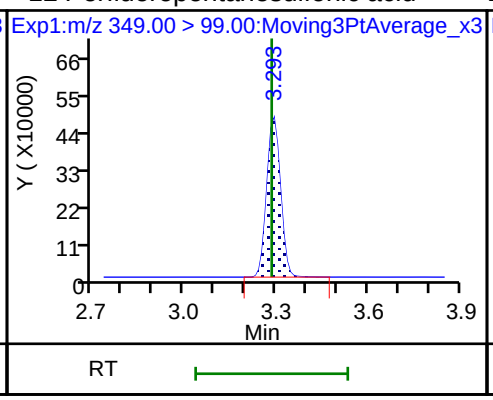
10 Perfluorohexanoic acid



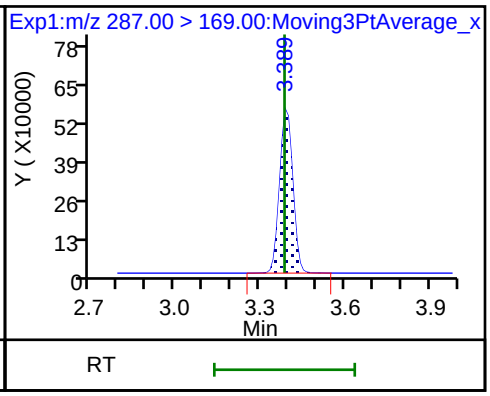
12 Perfluoropentanesulfonic acid



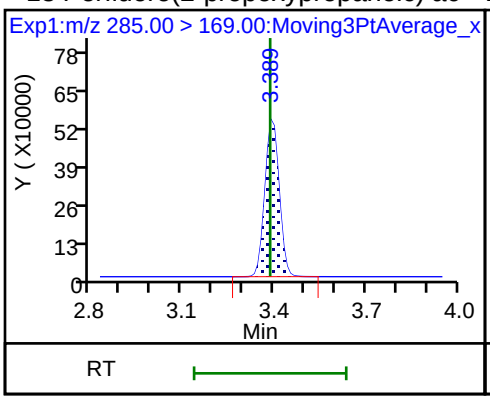
12 Perfluoropentanesulfonic acid



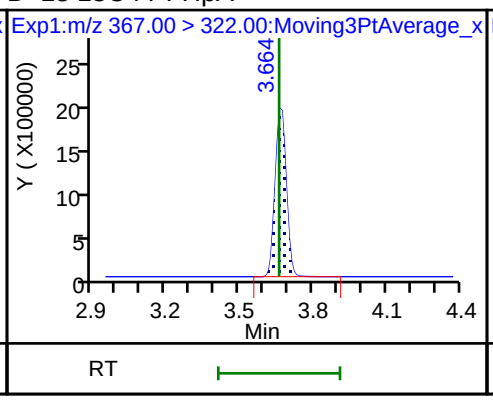
D 14 13C3 HFPO-DA



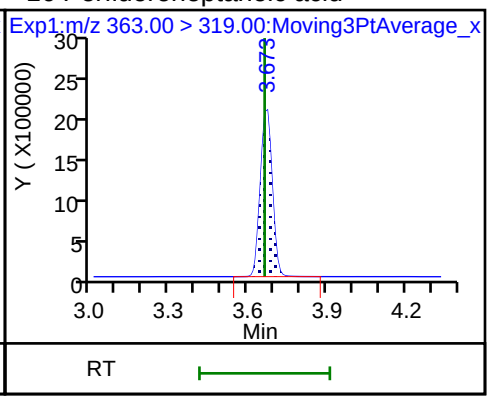
13 Perfluoro(2-propoxypropanoic) ac



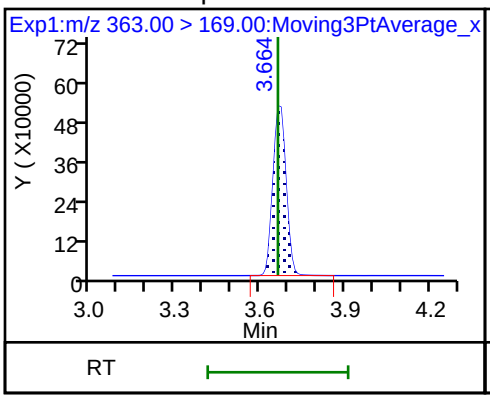
D 18 13C4 PFHpA



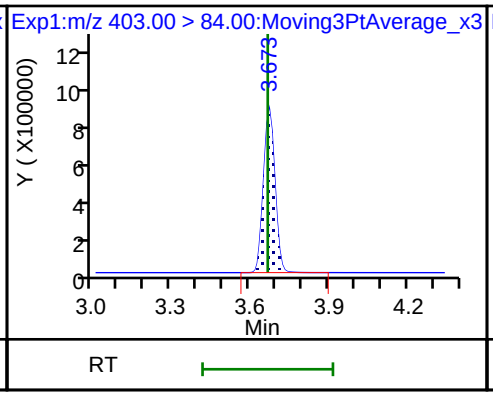
16 Perfluoroheptanoic acid



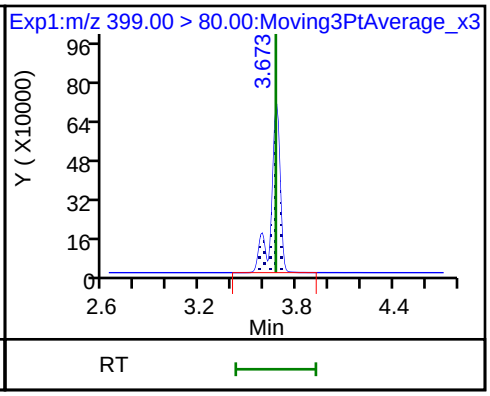
16 Perfluoroheptanoic acid



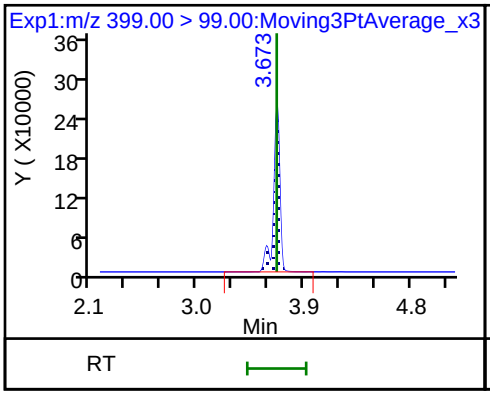
D 17 18O2 PFHxS



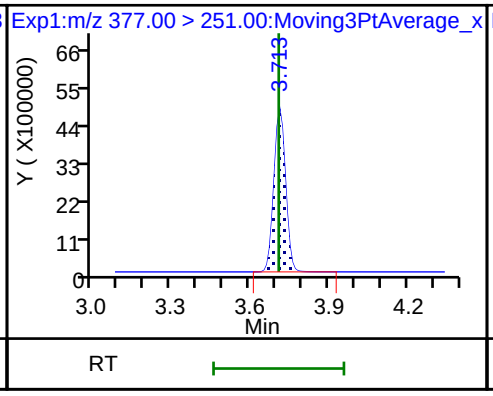
15 Perfluorohexanesulfonic acid



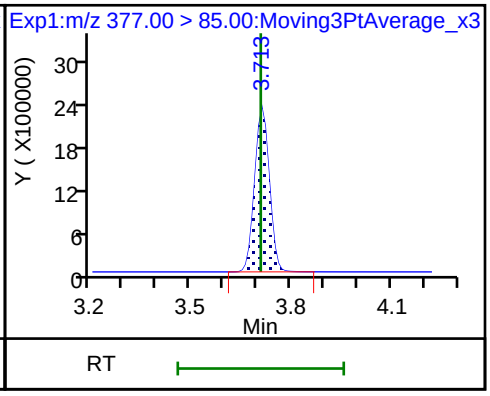
15 Perfluorohexanesulfonic acid



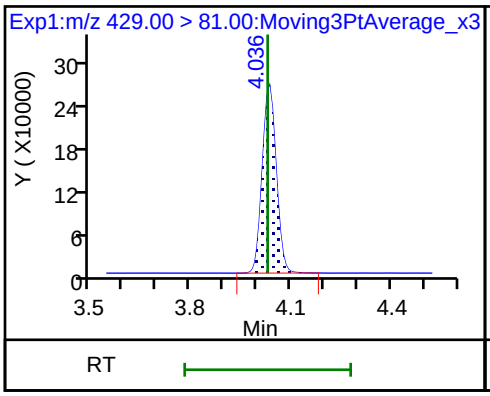
19 DONA



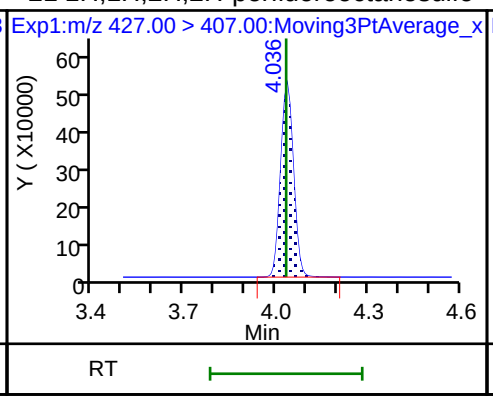
19 DONA



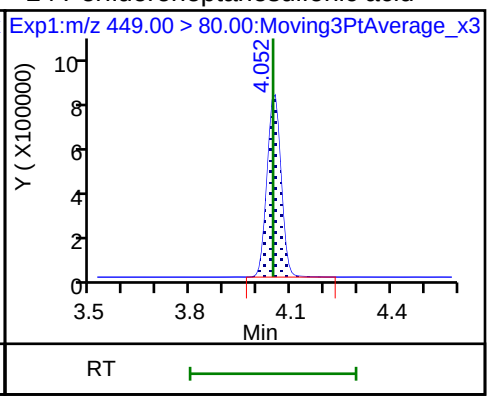
D 20 M2-6:2 FTS



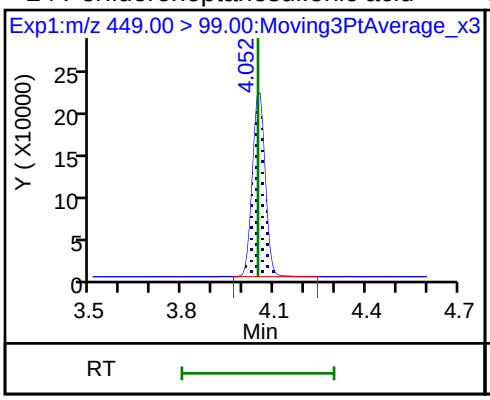
21 1H,1H,2H,2H-perfluorooctanesulfo



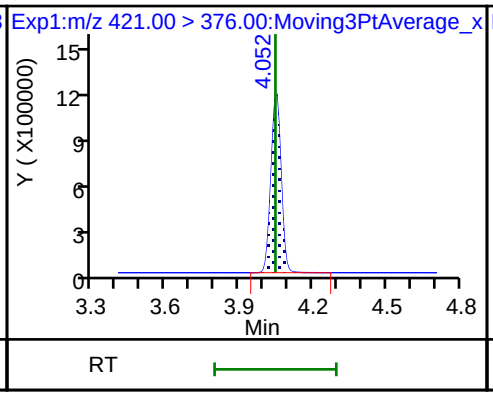
24 Perfluoroheptanesulfonic acid



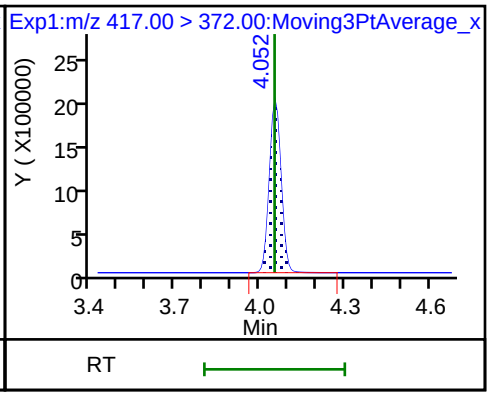
24 Perfluoroheptanesulfonic acid



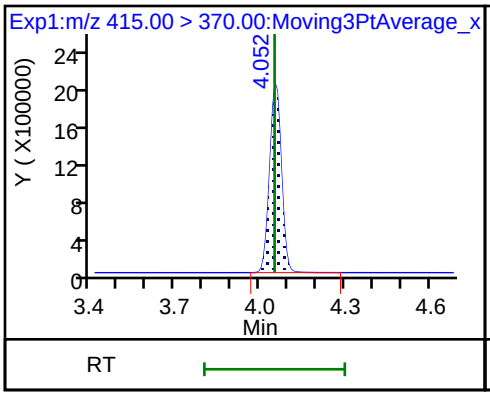
$ 26 13C8 PFOA



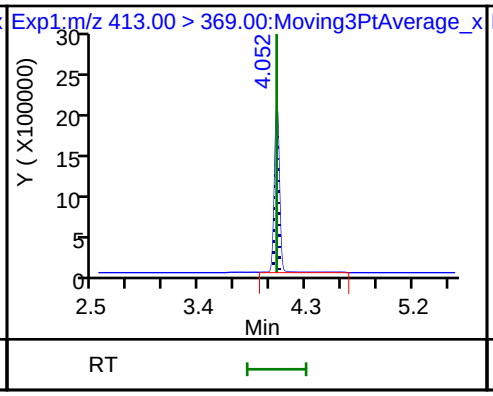
D 25 13C4 PFOA



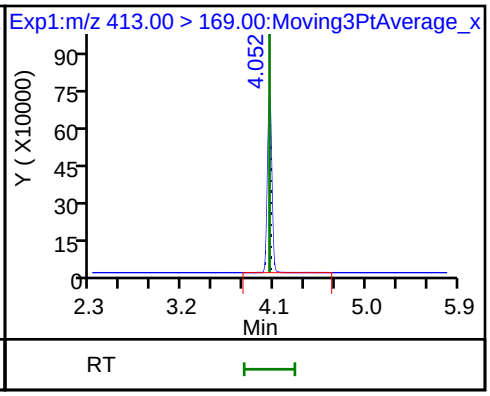
* 23 13C2 PFOA



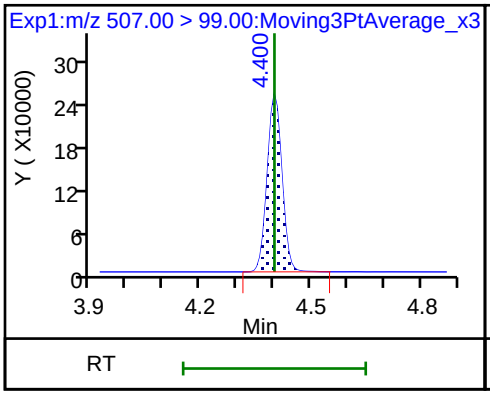
22 Perfluorooctanoic acid



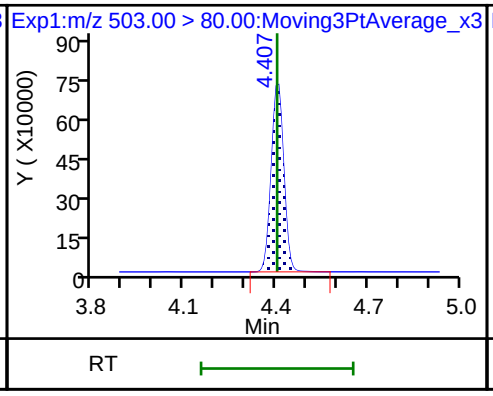
22 Perfluorooctanoic acid



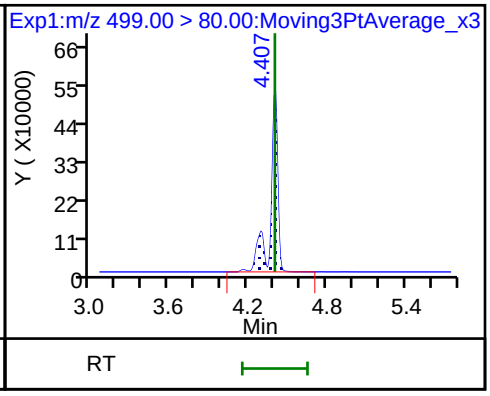
$ 28 13C8 PFOS



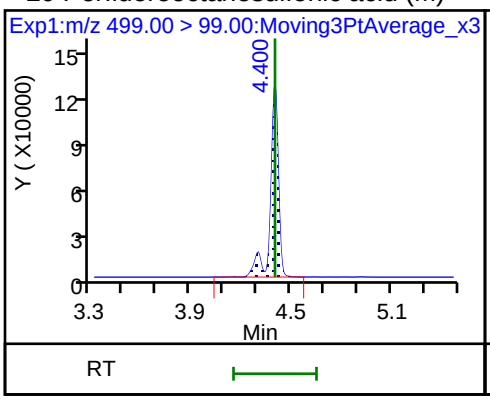
D 27 13C4 PFOS



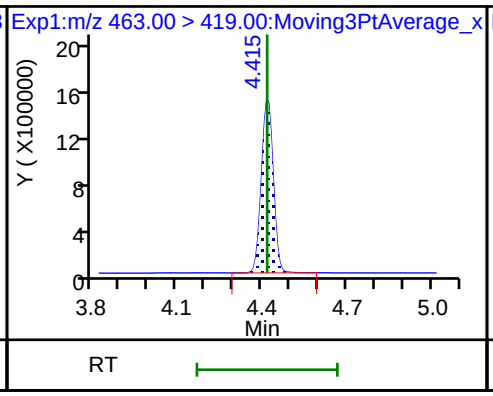
29 Perfluorooctanesulfonic acid



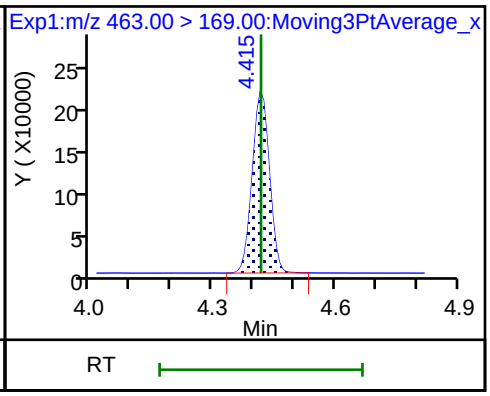
29 Perfluorooctanesulfonic acid (M)



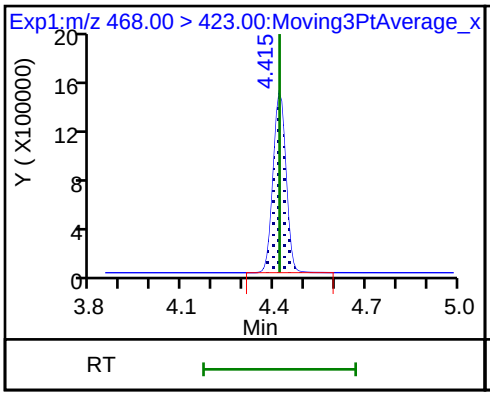
31 Perfluorononanoic acid



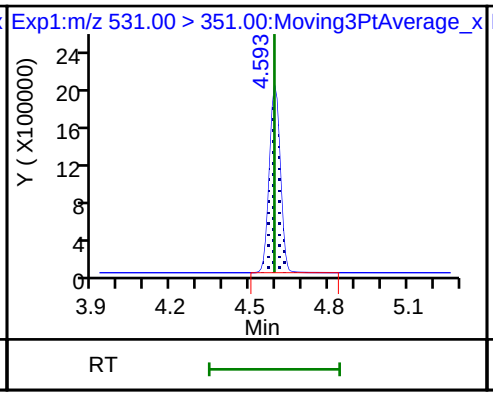
31 Perfluorononanoic acid



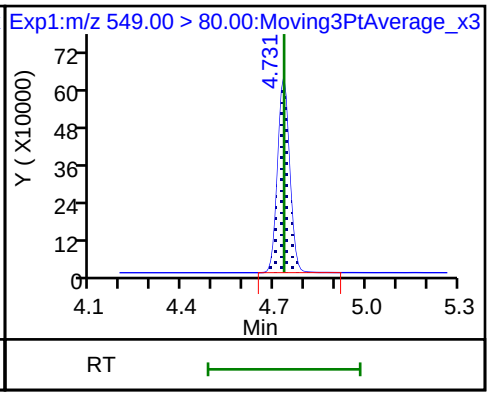
D 30 13C5 PFNA



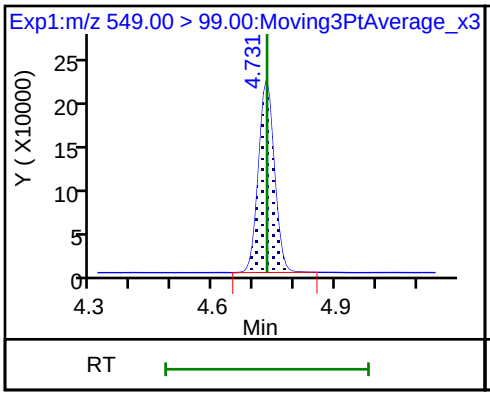
32 9-Chlorohexadecafluoro-3-oxanona



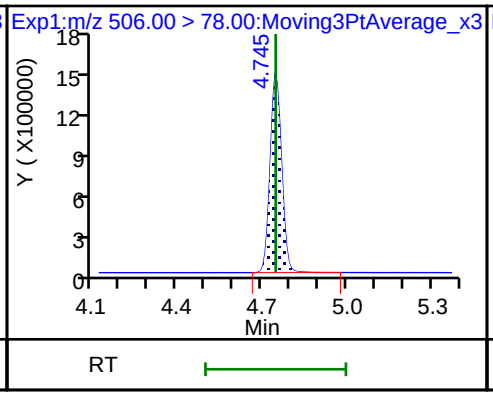
35 Perfluorononanesulfonic acid



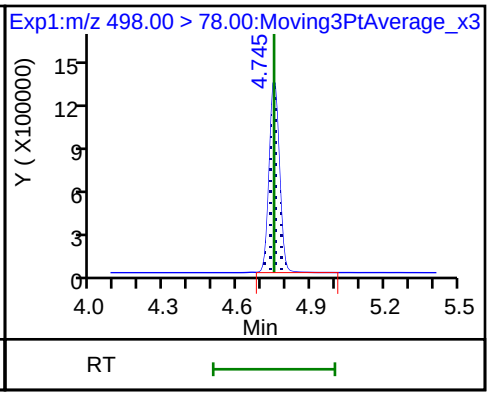
35 Perfluorononanesulfonic acid



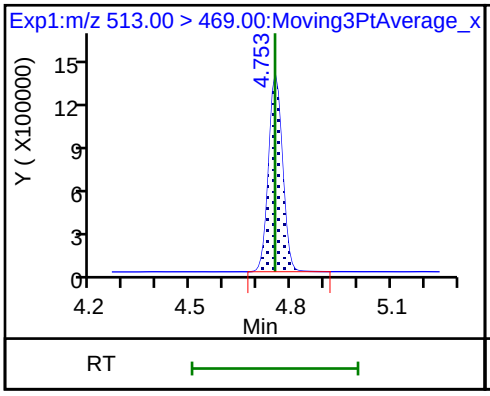
D 33 13C8 FOSA



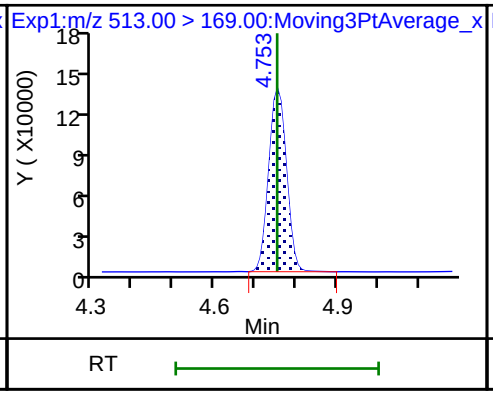
34 Perfluorooctanesulfonamide



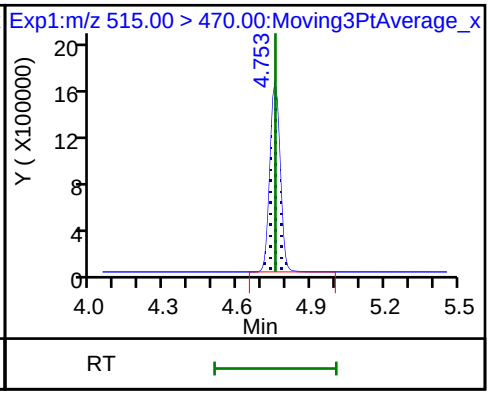
37 Perfluorodecanoic acid



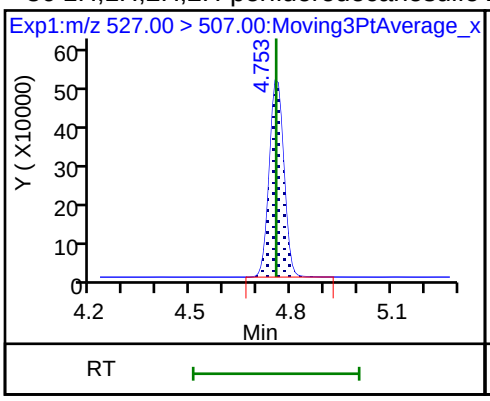
37 Perfluorodecanoic acid



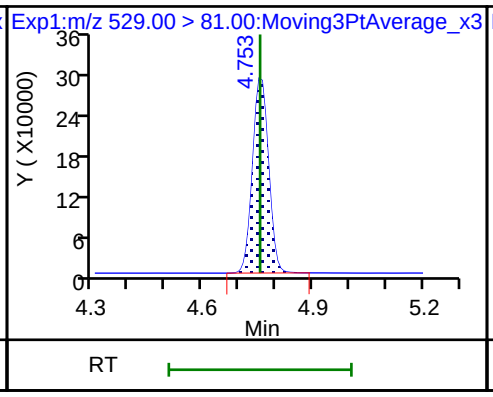
D 39 13C2 PFDA



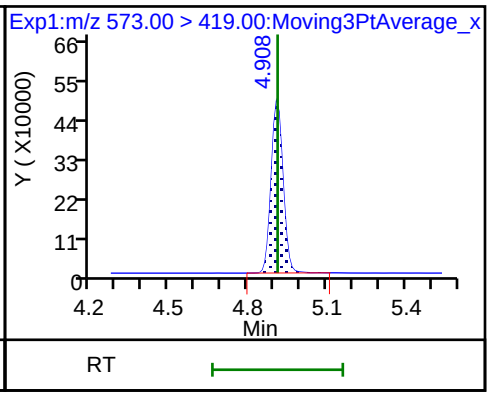
36 1H,1H,2H,2H-perfluorodecanesulfo



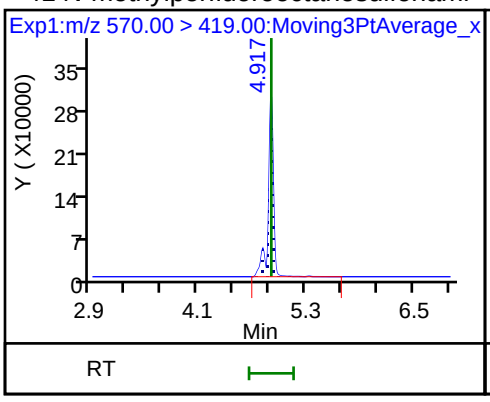
D 38 M2-8:2 FTS



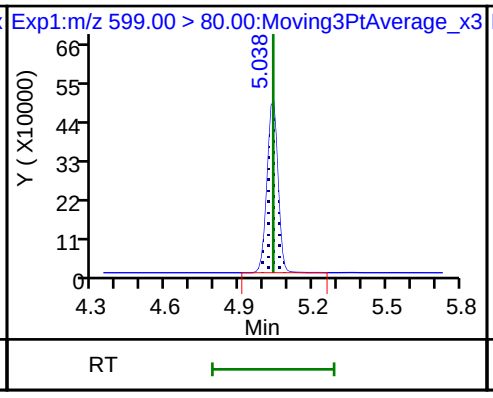
D 40 d3-NMeFOSAA



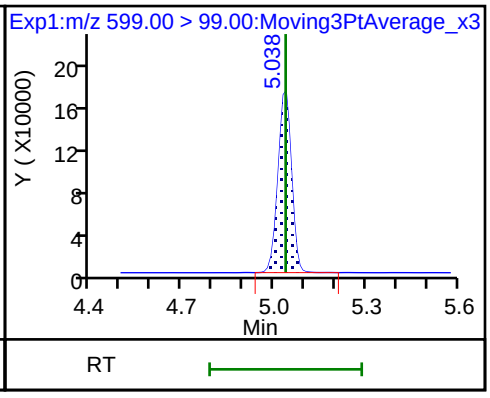
41 N-methylperfluorooctanesulfonami



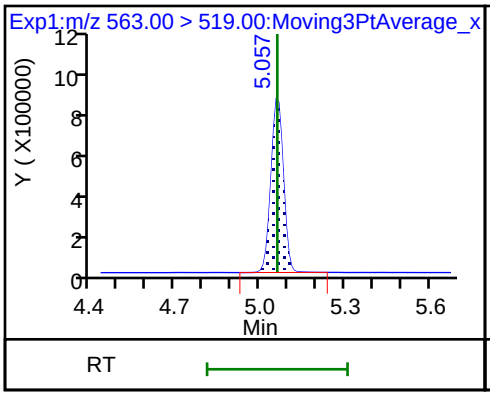
42 Perfluorodecanesulfonic acid



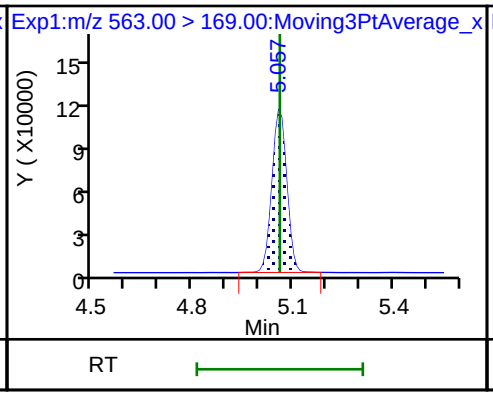
42 Perfluorodecanesulfonic acid



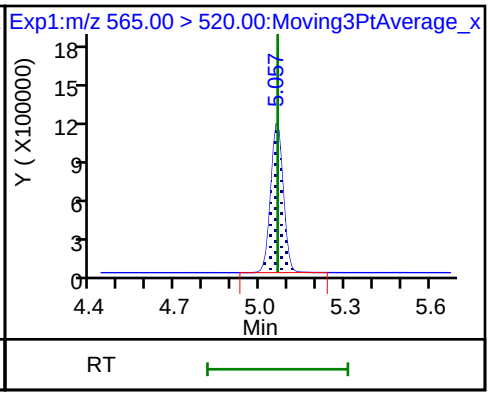
45 Perfluoroundecanoic acid



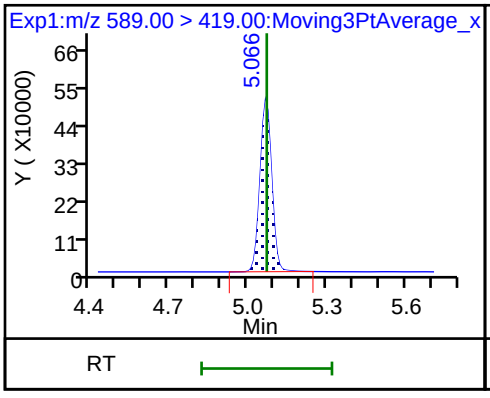
45 Perfluoroundecanoic acid



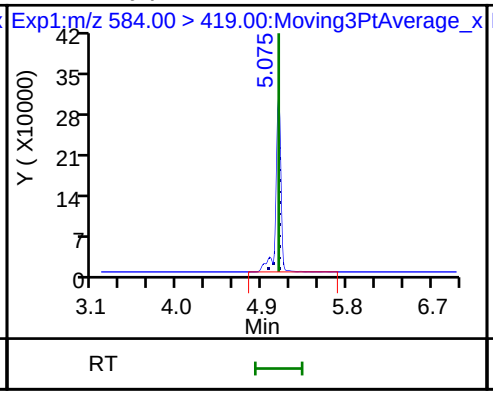
D 43 13C2 PFUnA



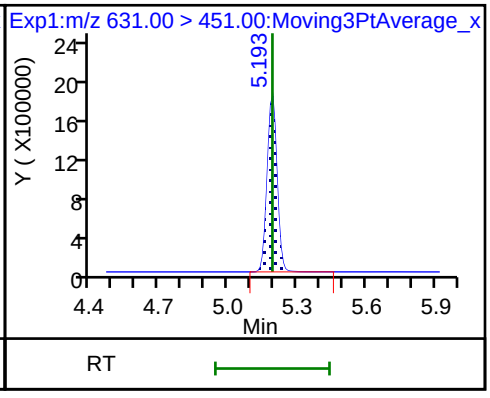
D 44 d5-NEtFOSAA



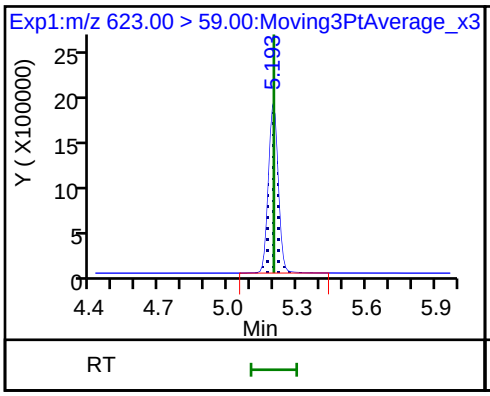
46 N-ethylperfluorooctanesulfonamid



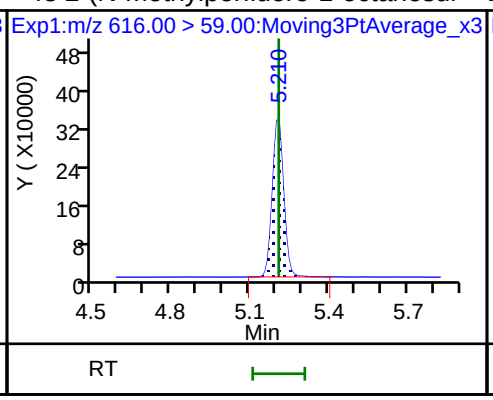
51 11-Chloroeicosafluoro-3-oxaundec



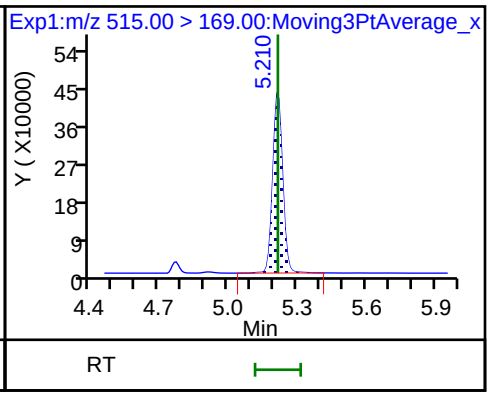
D 47 d7-N-MeFOSE-M



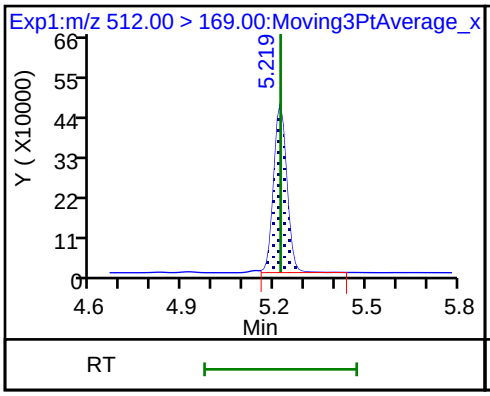
48 2-(N-methylperfluoro-1-octanesul



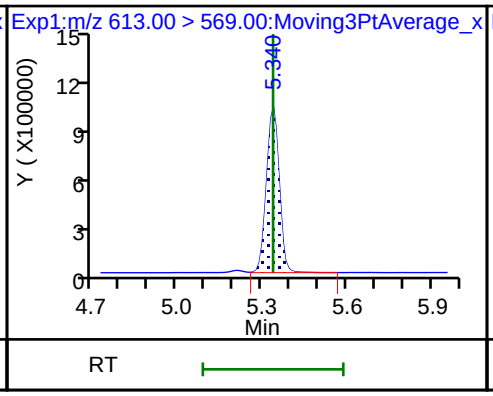
D 49 d-N-MeFOSA-M



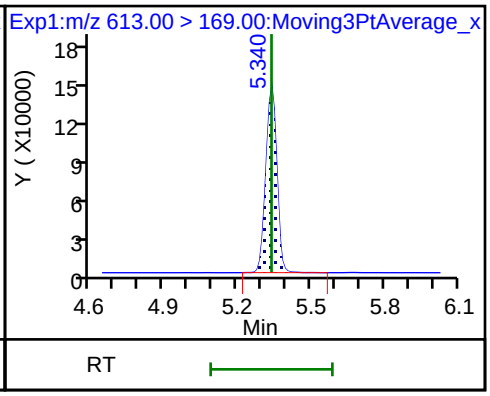
50 NMeFOSA



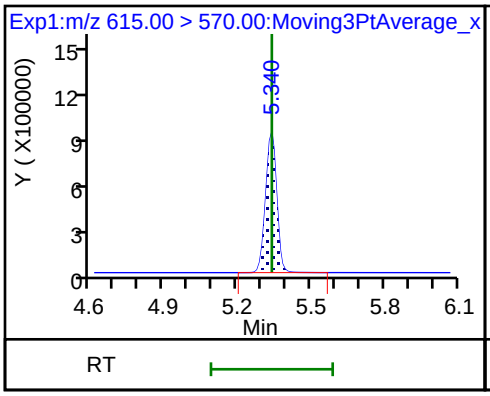
57 Perfluorododecanoic acid



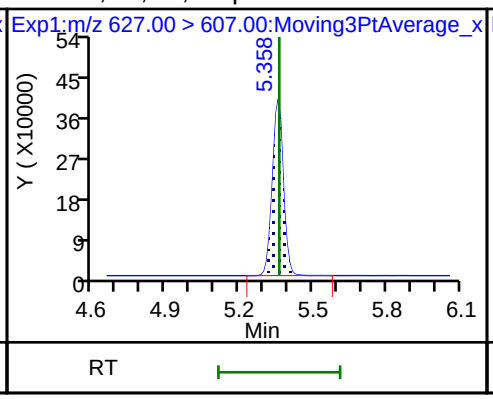
57 Perfluorododecanoic acid



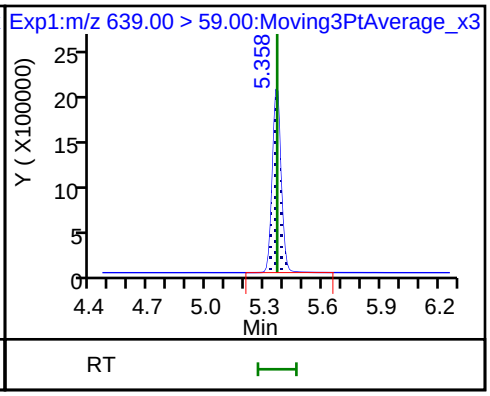
D 56 13C2 PFDoA



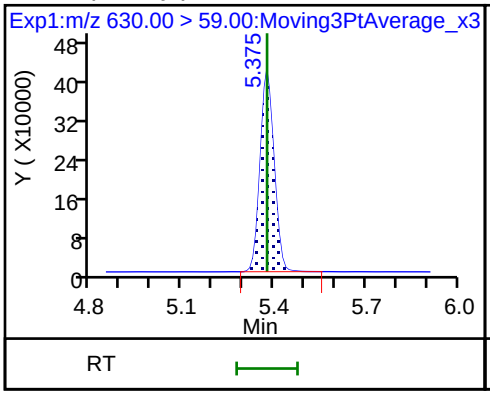
58 1H,1H,2H,2H-perfluorododecanesul



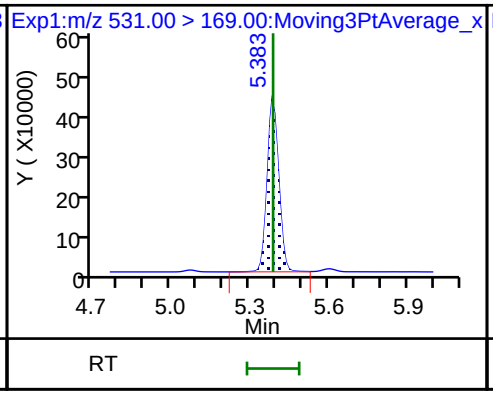
D 52 d9-N-EtFOSE-M



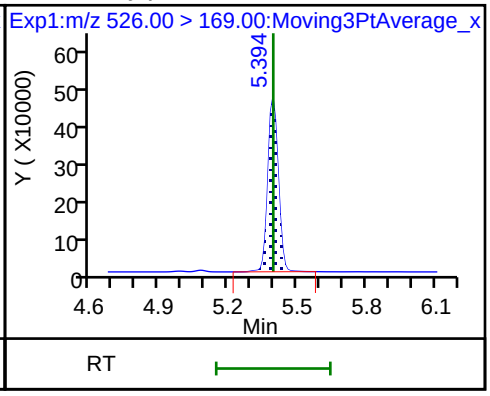
53 2-(N-ethylperfluoro-1-octanesulf



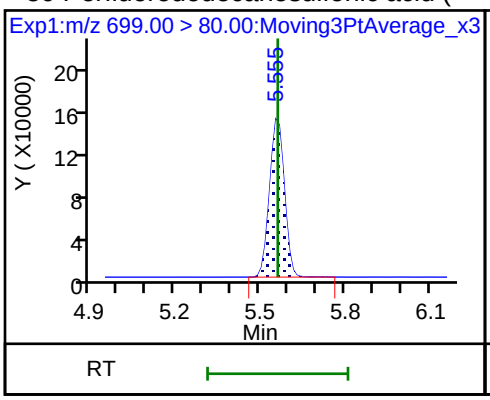
D 54 d-N-EtFOSA-M



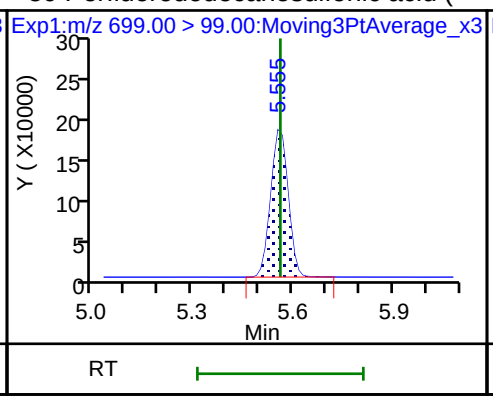
55 N-ethylperfluoro-1-octanesulfona



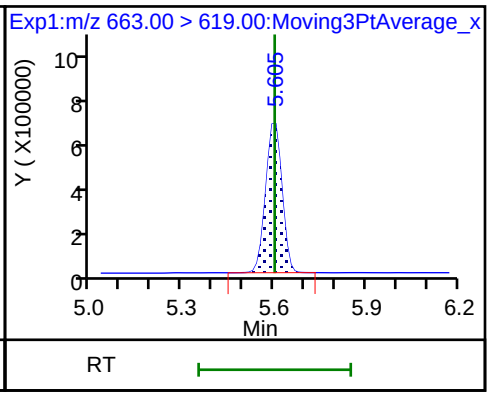
59 Perfluorododecanesulfonic acid (



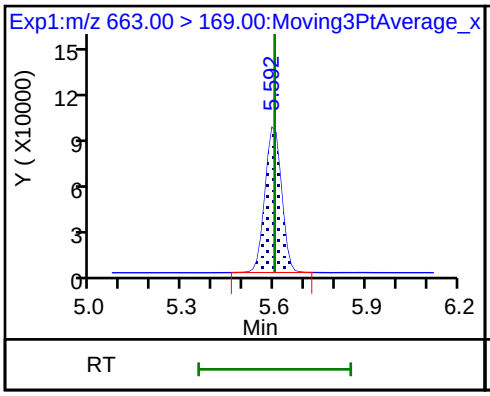
59 Perfluorododecanesulfonic acid (



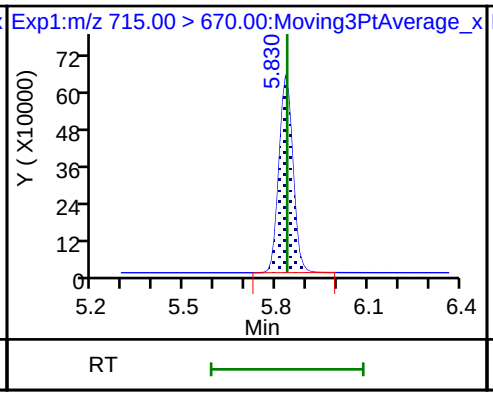
60 Perfluorotridecanoic acid



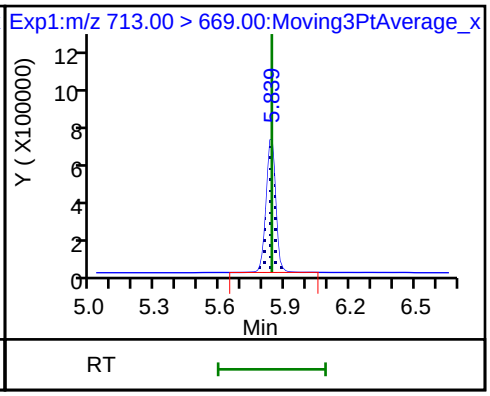
60 Perfluorotridecanoic acid



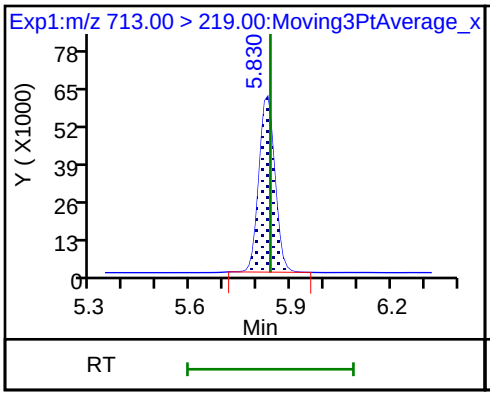
D 61 13C2 PFTeDA



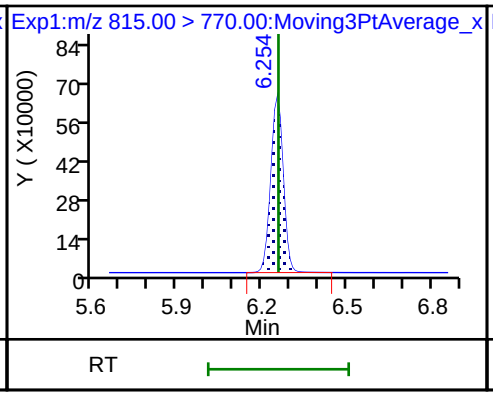
62 Perfluorotetradecanoic acid



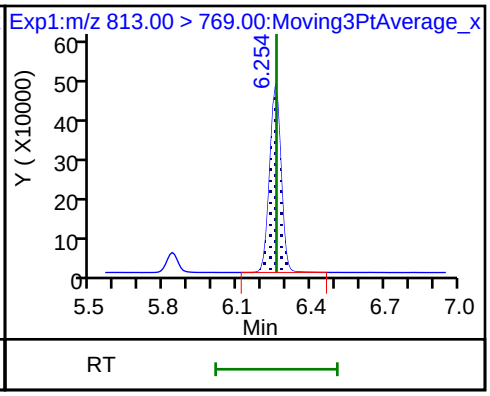
62 Perfluorotetradecanoic acid



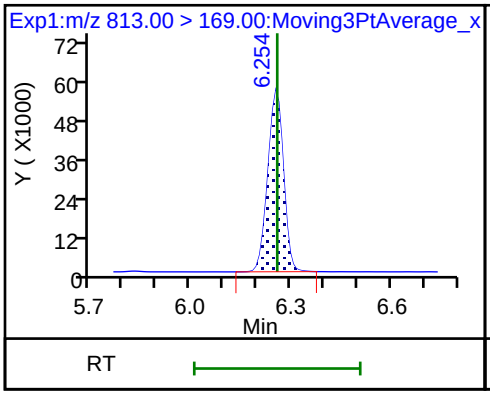
D 64 13C2 PFHxDA



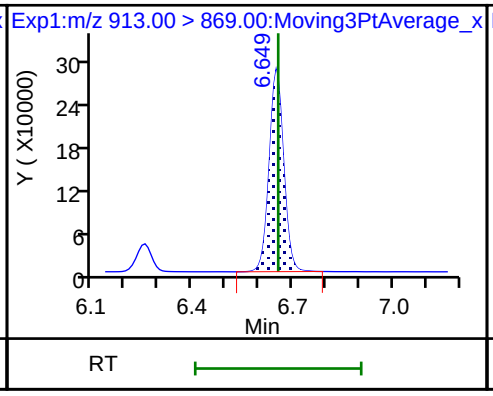
63 Perfluorohexadecanoic acid



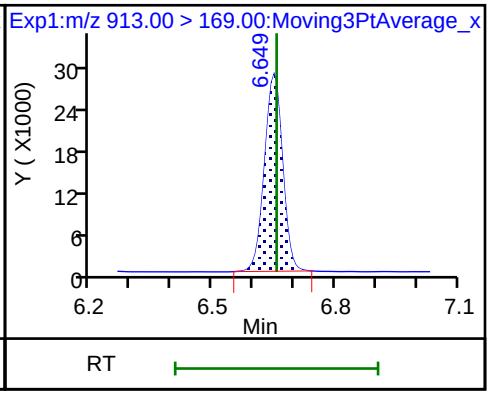
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

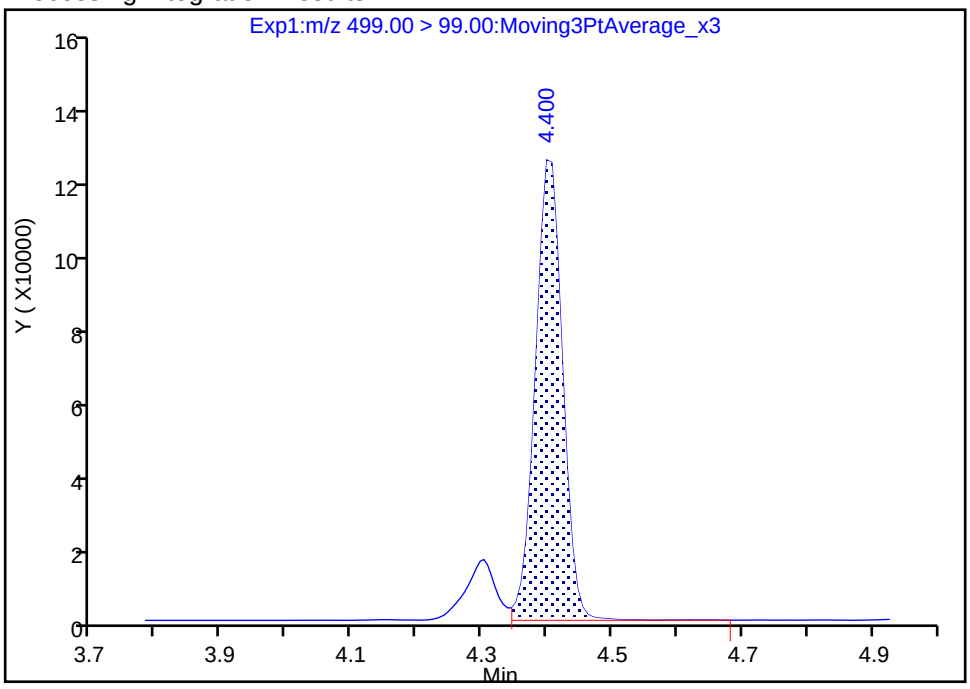
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_008.d
Injection Date: 04-Jun-2020 12:33:23 Instrument ID: A15
Lims ID: IC L5 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

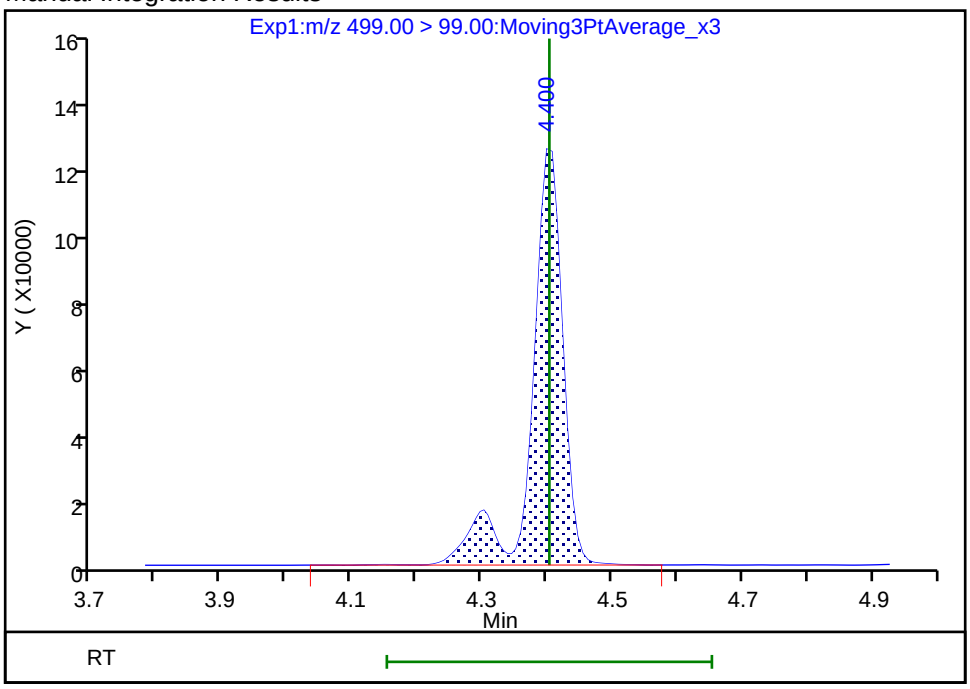
RT: 4.40
Area: 343355
Amount: 2.331493
Amount Units: ng/ml

Processing Integration Results



RT: 4.40
Area: 392900
Amount: 2.331493
Amount Units: ng/ml

Manual Integration Results



Reviewer: maxwellm, 04-Jun-2020 14:39:01
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_009.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 04-Jun-2020 12:42:29 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 6 (25)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:48 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:41:10
Ratio Calibration: Average of Initial Calibration

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	2.552	2.549	0.003	0.629	9090663	2.67		107	17210	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.552	2.551	0.001	1.000	17523720	5.20		104	4592	
D 4 13C5 PFPeA										
267.90 > 223.00	2.903	2.895	0.008	0.716	7995197	2.63		105	11474	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.903	2.898	0.005	1.000	15678192	4.87		97.3	1186	
D 9 13C3 PFBS										
301.90 > 80.00	2.934	2.930	0.004	0.723	5370688	2.55		109	17818	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.934	2.930	0.004	1.000	10524971	4.67	Target=2.14	106	4245	
298.90 > 99.00	2.934	2.930	0.004	1.000	4764233		2.21(1.07-3.21)	106	2835	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.229	3.226	0.003	0.796	718991	2.56		110	1564	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.236	3.227	0.009	1.002	3421017	4.93		105	21078	
D 11 13C2 PFHxA										
315.00 > 270.00	3.276	3.267	0.009	0.808	7678162	2.60		104	12578	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.276	3.267	0.009	1.000	14187904	4.93	Target=15.73	98.6	6199	
313.00 > 119.00	3.276	3.267	0.009	1.000	928201		15.29(7.86-23.59)	98.6	2354	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.297	3.285	0.012	1.124	8202928	4.84	Target=2.69	103	15396	
349.00 > 99.00	3.286	3.285	0.001	1.120	3017881		2.72(1.35-4.04)	103	7884	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.392	3.386	0.006	0.836	1839459	2.72		109	10200	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.392	3.386	0.006	1.000	3377071	5.02		100	13733	
D 18 13C4 PFHpA										
367.00 > 322.00	3.667	3.661	0.006	0.904	5990467	2.55		102	25145	
D 17 18O2 PFHxS										
403.00 > 84.00	3.677	3.667	0.010	0.907	2582641	2.54		108	10092	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.677	3.670	0.007	1.000	5172852	4.22	Target=2.99	92.7	13189	
399.00 > 99.00	3.677	3.670	0.007	1.000	1795493		2.88(1.50-4.49)	92.7	4468	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.667	3.662	0.005	1.000	12066452	4.98	Target=3.80	99.6	4009	
363.00 > 169.00	3.667	3.662	0.005	1.000	3152903		3.83(1.90-5.71)	99.6	10653	
19 DONA										
377.00 > 251.00	3.716	3.709	0.007	0.842	30115737	4.81	Target=2.14	102	30696	
377.00 > 85.00	3.716	3.709	0.007	0.842	14355425		2.10(1.07-3.21)	102	19180	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.040	4.030	0.010	0.996	734246	2.37		99.7	3738	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.040	4.032	0.008	1.000	2989847	4.92		104	10896	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.056	4.046	0.010	0.919	4617036	4.96	Target=3.77	104	8948	
449.00 > 99.00	4.056	4.046	0.010	0.919	1238635		3.73(1.89-5.66)	104	4917	
$ 26 13C8 PFOA										
421.00 > 376.00	4.056	4.046	0.010	1.000	3300754	2.53		104	11485	
D 25 13C4 PFOA										
417.00 > 372.00	4.056	4.051	0.005	1.000	5354025	2.52		101	9906	
* 23 13C2 PFOA										
415.00 > 370.00	4.056	4.051	0.005		5380903	2.50			13404	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.064	4.052	0.012	1.002	10227799	4.52	Target=2.88	90.4	793	
413.00 > 169.00	4.056	4.052	0.004	1.000	3924375		2.61(1.44-4.31)	90.4	22459	
$ 28 13C8 PFOS										
507.00 > 99.00	4.405	4.400	0.005	1.086	703067	2.63		110	4023	
D 27 13C4 PFOS										
503.00 > 80.00	4.412	4.402	0.010	1.088	2039057	2.59		108	5768	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.412	4.403	0.009	1.000	4023416	4.77	Target=4.89	103	5919	
499.00 > 99.00	4.412	4.403	0.009	1.000	815892		4.93(2.44-7.33)	103	4533	
31 Perfluorononanoic acid										
463.00 > 419.00	4.428	4.417	0.011	1.000	8604297	4.92	Target=7.00	98.3	1538	
463.00 > 169.00	4.428	4.417	0.011	1.000	1258241		6.84(3.50-10.51)	98.3	6162	
D 30 13C5 PFNA										
468.00 > 423.00	4.428	4.417	0.011	1.092	4315211	2.66		106	10268	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.599	4.592	0.007	1.042	11361857	4.88		105	16174	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.737	4.732	0.005	1.074	3370318	4.95	Target=2.77	103	4718	
549.00 > 99.00	4.737	4.732	0.005	1.074	1194396		2.82(1.38-4.15)	103	6434	
D 33 13C8 FOSA										
506.00 > 78.00	4.752	4.747	0.005	1.172	4095028	2.61		105	9165	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.761	4.749	0.012	1.002	7465140	5.19		104	4257	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.761	4.752	0.009	1.000	7786365	4.97	Target=10.36	99.3	1980	
513.00 > 169.00	4.761	4.752	0.009	1.000	731424		10.65(5.18-15.54)	99.3	242	
D 39 13C2 PFDA										
515.00 > 470.00	4.761	4.754	0.007	1.174	4057879	2.62		105	16442	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.761	4.755	0.006	1.000	3056319	4.87		102	9275	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.761	4.755	0.006	1.174	921429	2.49		104	5759	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.917	4.912	0.005	1.212	1536928	2.66		106	2260	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.917	4.915	0.002	1.000	2513798	5.60		112	1691	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.039	5.037	0.002	1.142	2922028	4.89	Target=2.97	101	7155	
599.00 > 99.00	5.039	5.037	0.002	1.142	1005191		2.91(1.49-4.46)	101	4782	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.066	5.060	0.006	1.000	4994985	5.13	Target=7.56	103	2369	
563.00 > 169.00	5.066	5.060	0.006	1.000	610832		8.18(3.78-11.34)	103	2849	
D 43 13C2 PFUnA										
565.00 > 520.00	5.066	5.062	0.004	1.249	3371659	2.55		102	10357	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.075	5.071	0.004	1.251	1520185	2.58		103	2274	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.084	5.075	0.009	1.002	2459976	5.72		114	49555	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.193	5.191	0.002	1.177	11022366	5.01		106	15267	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.202	5.198	0.004	1.283	4693030	11.9		95.2	2442	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.211	5.209	0.002	1.002	2283757	5.81		116	2924	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.220	5.215	0.005	1.287	1439720	2.91		116	181	
50 NMeFOSA										
512.00 > 169.00	5.229	5.220	0.009	1.002	2783078	5.13		103	649	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.340	5.338	0.002	1.000	6005489	5.41	Target=7.18	108	939	
613.00 > 169.00	5.340	5.338	0.002	1.000	778312		7.72(3.59-10.76)	108	4588	
D 56 13C2 PFDoA										
615.00 > 570.00	5.340	5.339	0.001	1.317	2825569	2.42		96.7	7917	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.367	5.362	0.005	1.127	2493812	5.04		105	5817	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.367	5.364	0.003	1.323	6645712	13.7		110	4874	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.375	5.376	-0.001	1.001	2702114	4.96		99.3	3435	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.394	5.387	0.007	1.330	1464448	2.91		117	309	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.405	5.395	0.010	1.002	2868640	4.89		97.7	735	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.568	5.562	0.006	1.262	1107494	5.33	Target=0.79	110	5234	
699.00 > 99.00	5.568	5.562	0.006	1.262	1338621		0.83(0.39-1.18)	110	6630	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.605	5.601	0.004	1.050	5012084	5.62	Target=6.63	112	807	
663.00 > 169.00	5.605	5.601	0.004	1.050	700489		7.16(3.32-9.95)	112	2501	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.839	5.835	0.004	1.440	2185293	2.86		114	10222	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.839	5.838	0.001	1.000	3783988	4.33	Target=8.46	86.6	980	
713.00 > 219.00	5.839	5.838	0.001	1.000	497571		7.60(4.23-12.69)	86.6	1663	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.255	6.257	-0.002	1.542	1761696	2.78		111	5612	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.255	6.258	-0.003	1.000	2927071	4.85	Target=7.92	97.1	395	
813.00 > 169.00	6.255	6.258	-0.003	1.000	382662		7.65(3.96-11.88)	97.1	2990	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.656	6.655	0.001	1.064	1574210	4.54	Target=10.24	90.8	279	
913.00 > 169.00	6.650	6.655	-0.005	1.063	174947		9.00(5.12-15.36)	90.8	1738	

Reagents:

LCPFC_LL6_00023 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_009.d

Injection Date: 04-Jun-2020 12:42:29 Instrument ID: A15

Lims ID: IC L6 Full

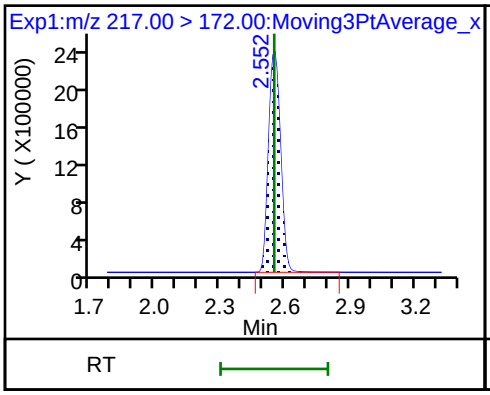
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 6 Worklist Smp#: 7

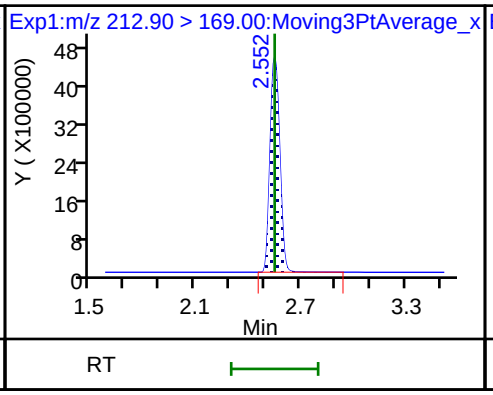
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

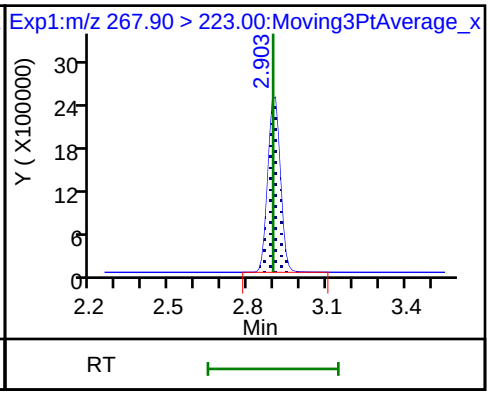
D 1 13C4 PFBA



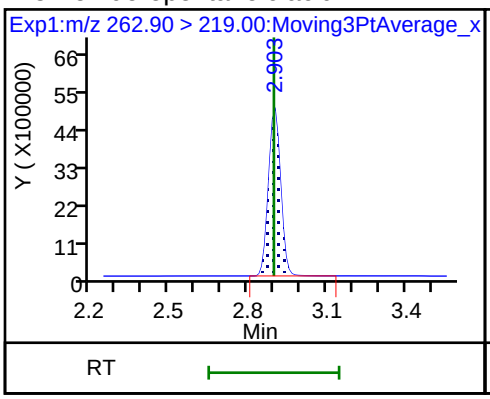
2 Perfluorobutanoic acid



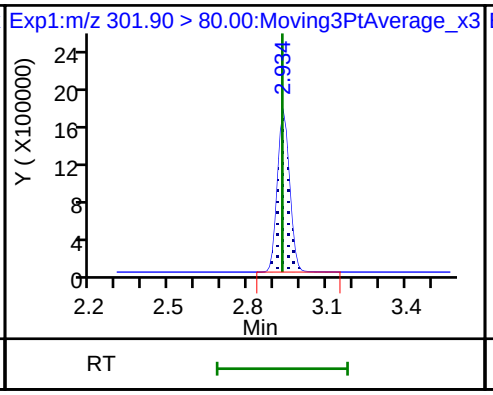
D 4 13C5 PFPeA



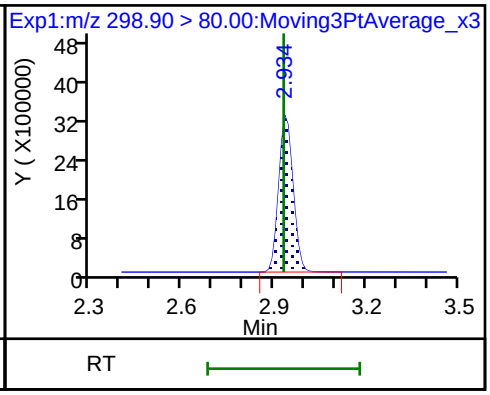
5 Perfluoropentanoic acid



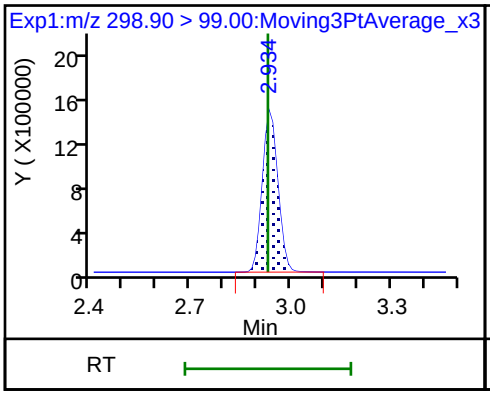
D 9 13C3 PFBS



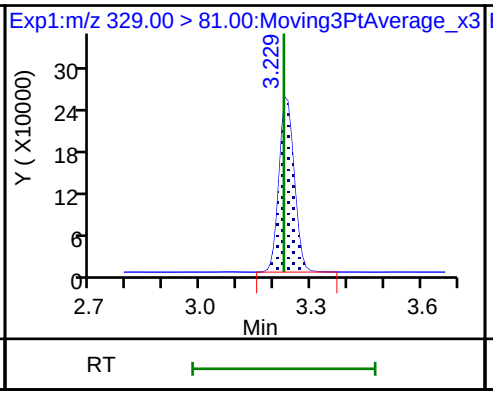
6 Perfluorobutanesulfonic acid



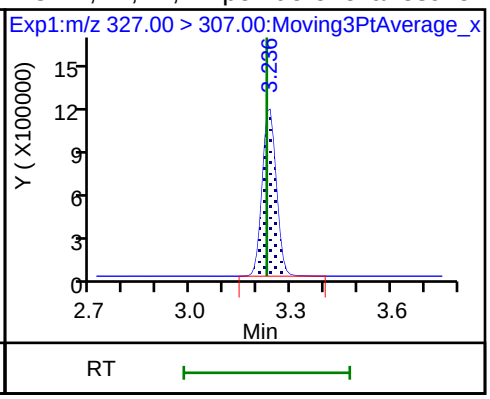
6 Perfluorobutanesulfonic acid



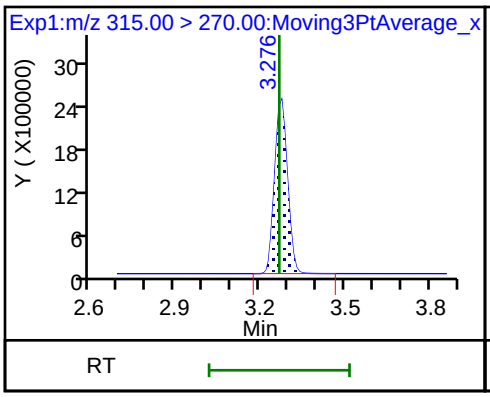
D 7 M2-4:2 FTS



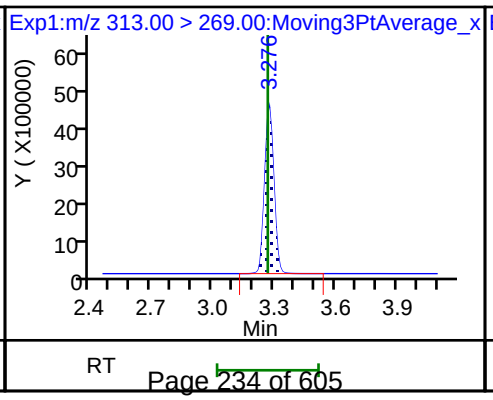
8 1H,1H,2H,2H-perfluorohexanesulfo



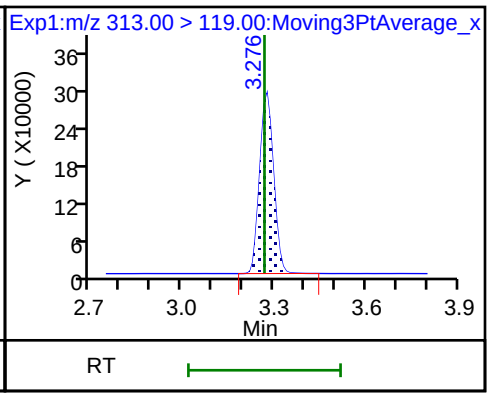
D 11 13C2 PFHxA



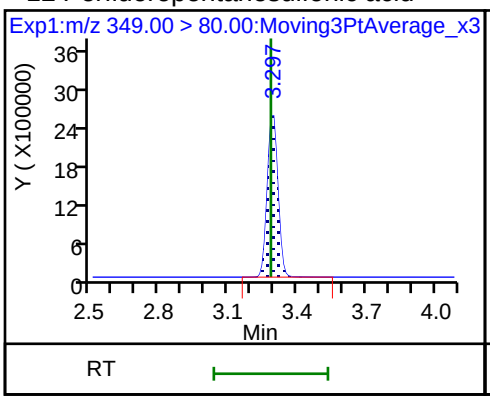
10 Perfluorohexanoic acid



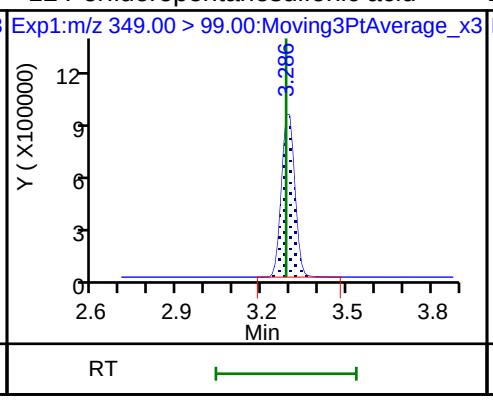
10 Perfluorohexanoic acid



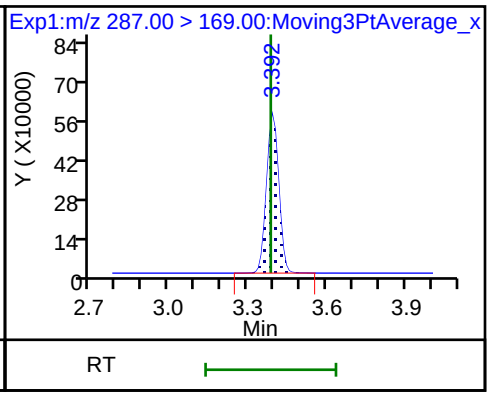
12 Perfluoropentanesulfonic acid



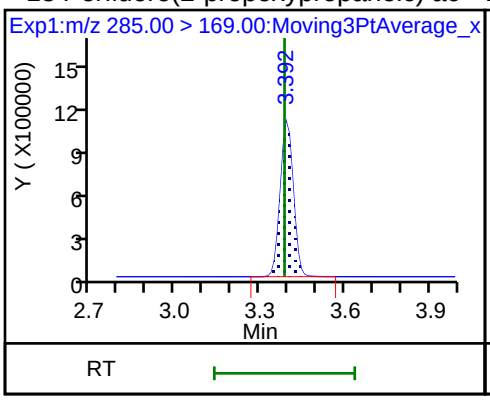
12 Perfluoropentanesulfonic acid



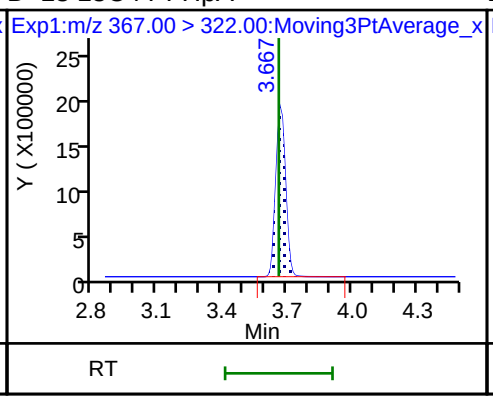
D 14 13C3 HFPO-DA



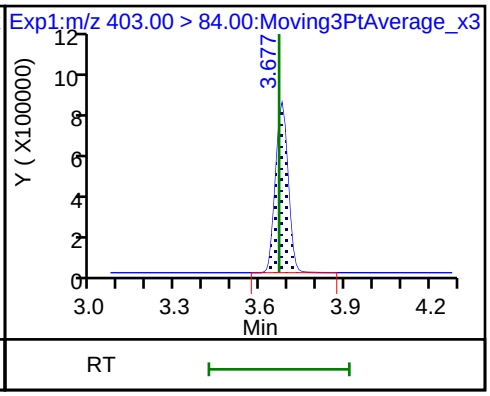
13 Perfluoro(2-propoxypropanoic) ac



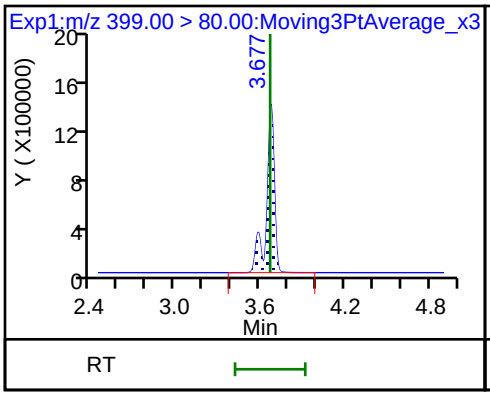
D 18 13C4 PFHpA



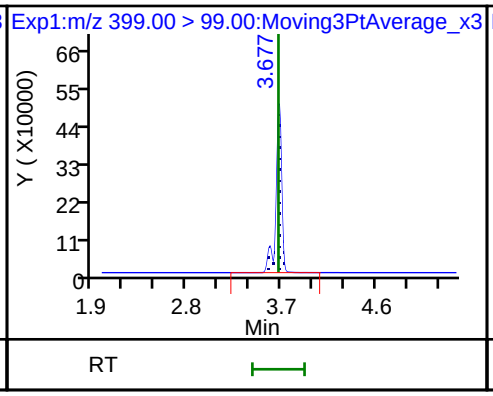
D 17 18O2 PFHxS



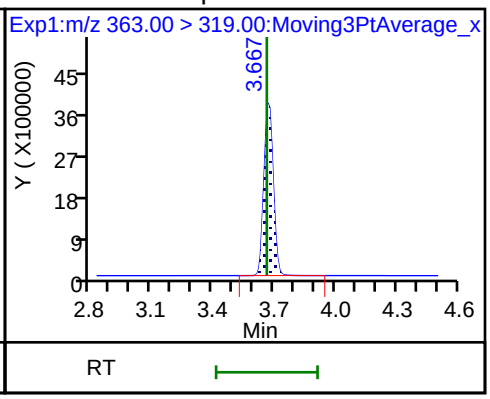
15 Perfluorohexanesulfonic acid



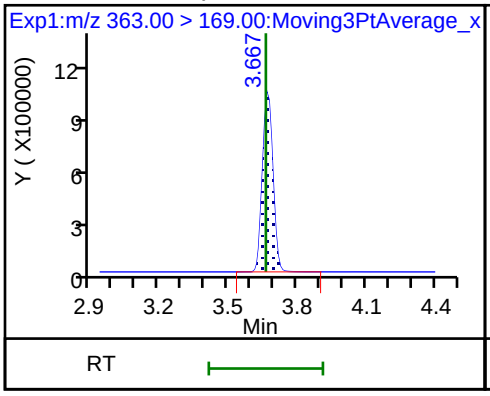
15 Perfluorohexanesulfonic acid



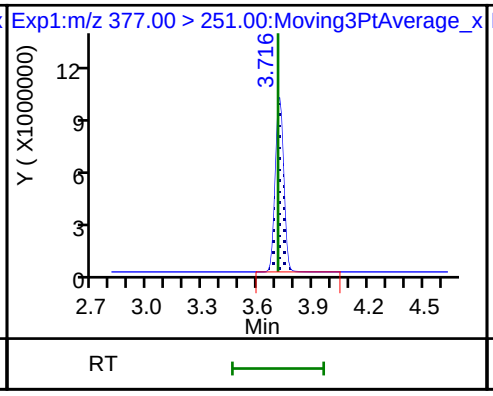
16 Perfluoroheptanoic acid



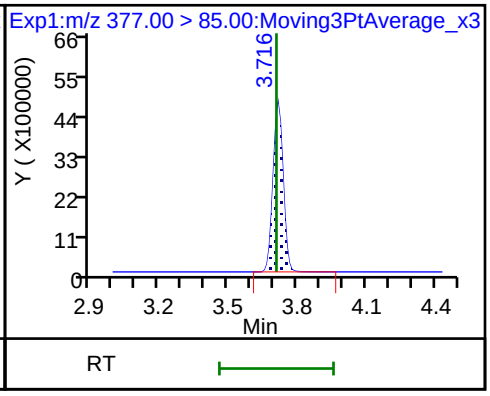
16 Perfluoroheptanoic acid



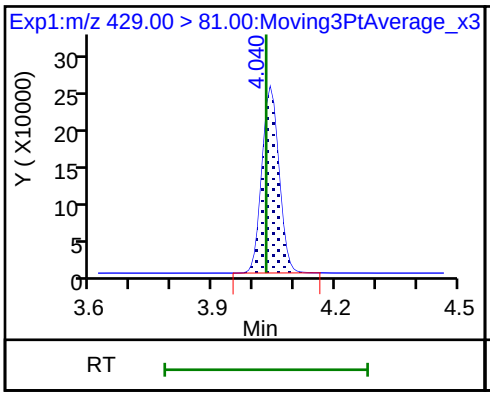
19 DONA



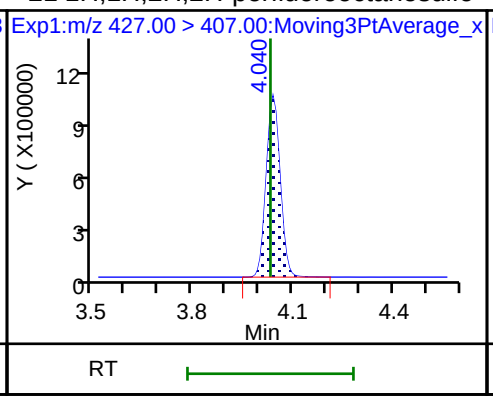
19 DONA



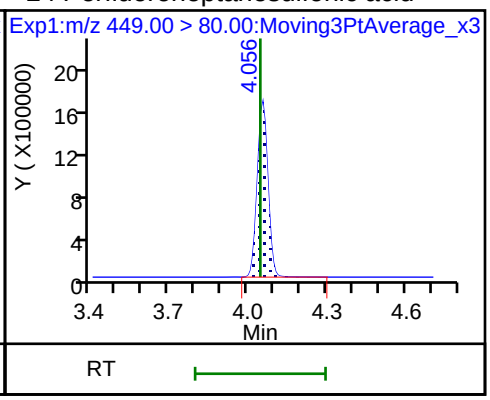
D 20 M2-6:2 FTS



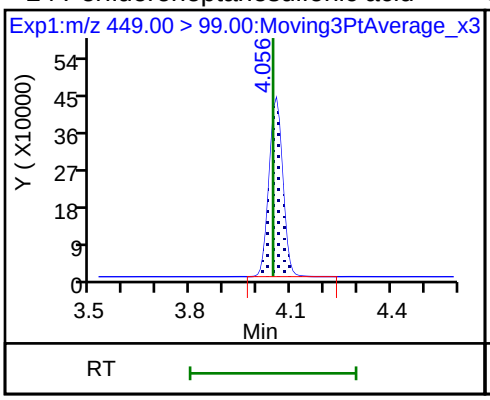
21 1H,1H,2H,2H-perfluorooctanesulfo



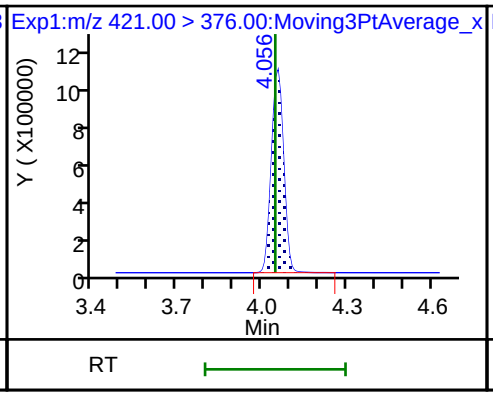
24 Perfluoroheptanesulfonic acid



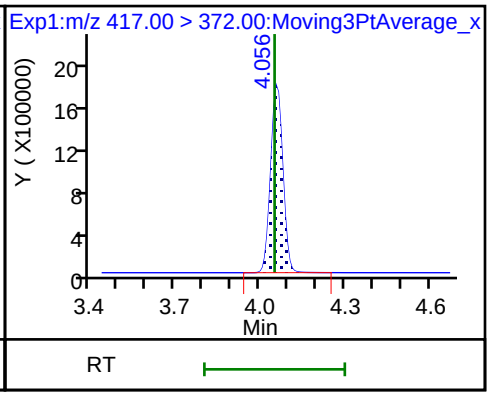
24 Perfluoroheptanesulfonic acid



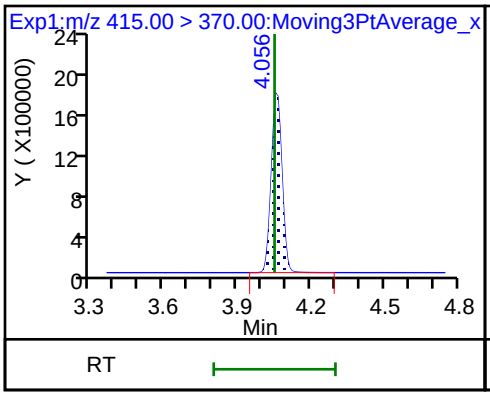
$ 26 13C8 PFOA



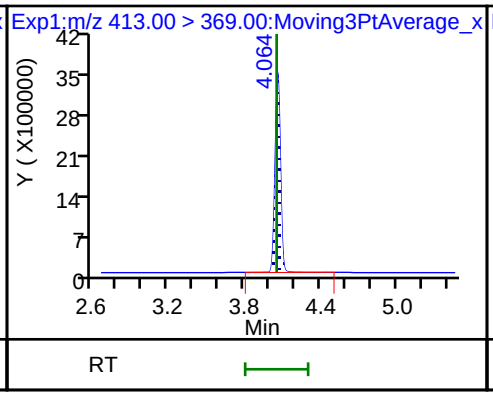
D 25 13C4 PFOA



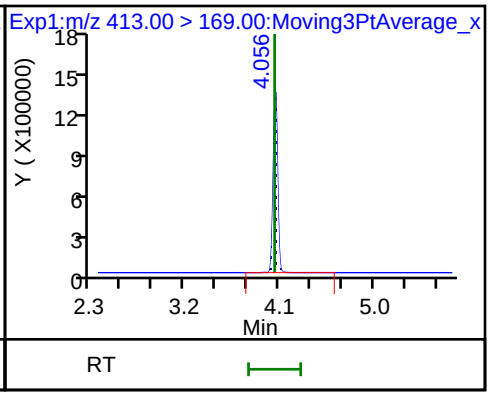
* 23 13C2 PFOA



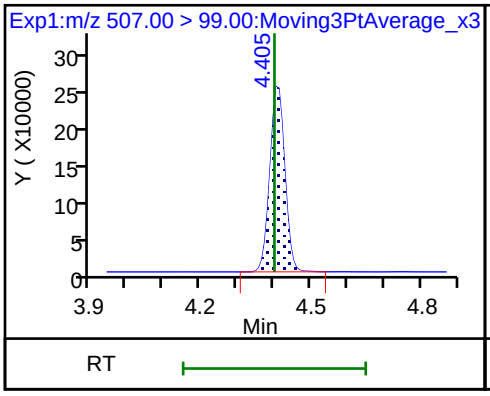
22 Perfluorooctanoic acid



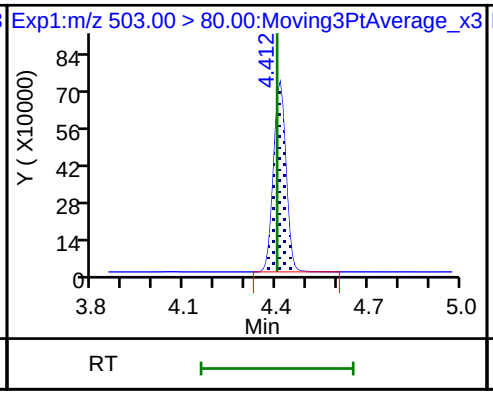
22 Perfluorooctanoic acid



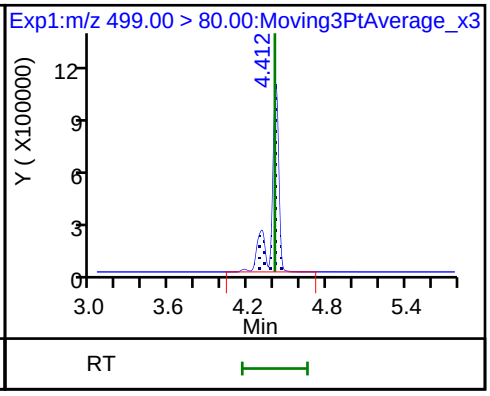
$ 28 13C8 PFOS



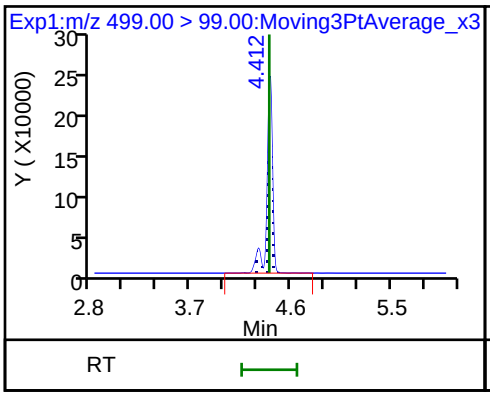
D 27 13C4 PFOS



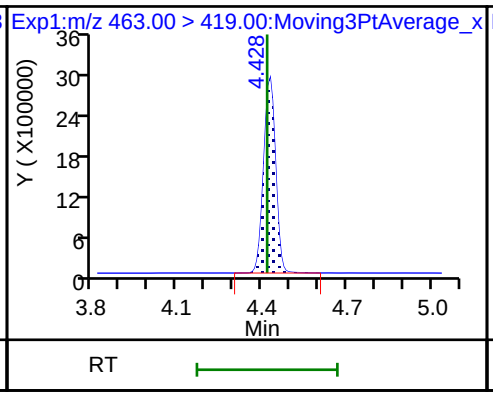
29 Perfluorooctanesulfonic acid



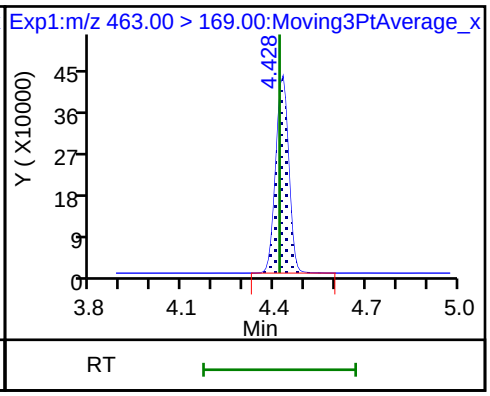
29 Perfluorooctanesulfonic acid



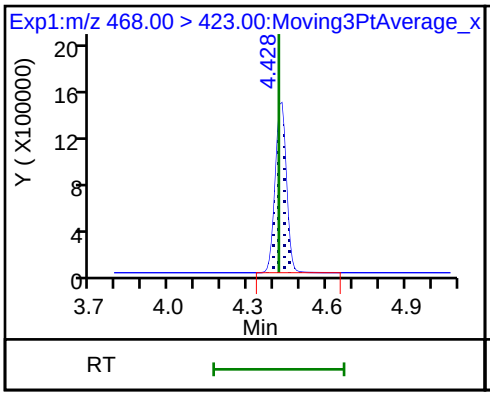
31 Perfluorononanoic acid



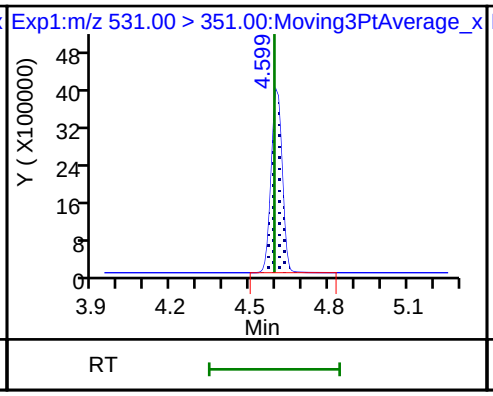
31 Perfluorononanoic acid



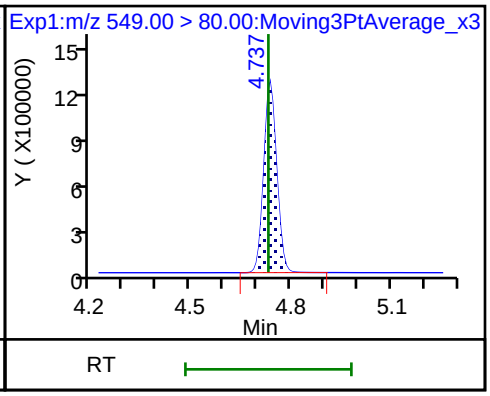
D 30 13C5 PFNA



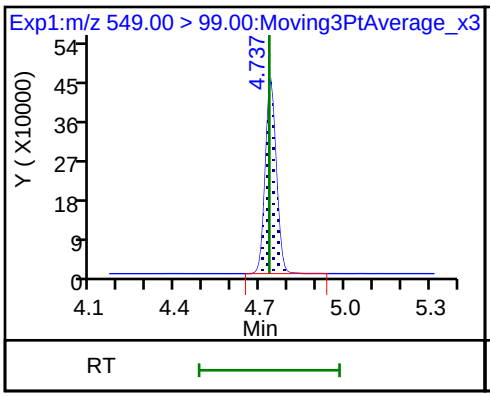
32 9-Chlorohexadecafluoro-3-oxanona



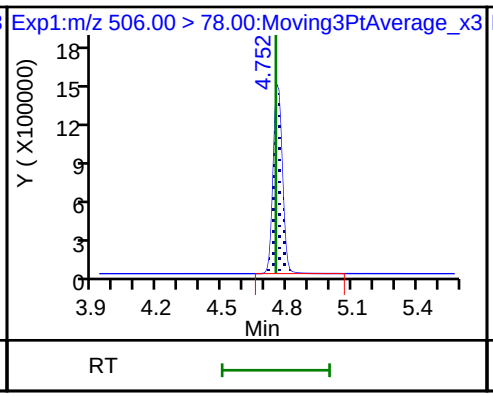
35 Perfluorononanesulfonic acid



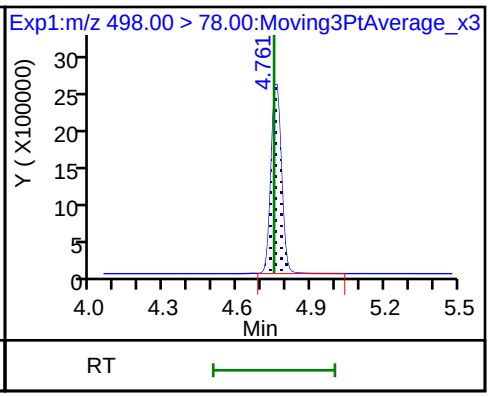
35 Perfluorononanesulfonic acid



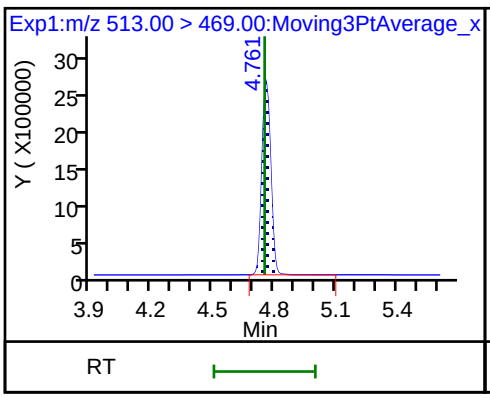
D 33 13C8 FOSA



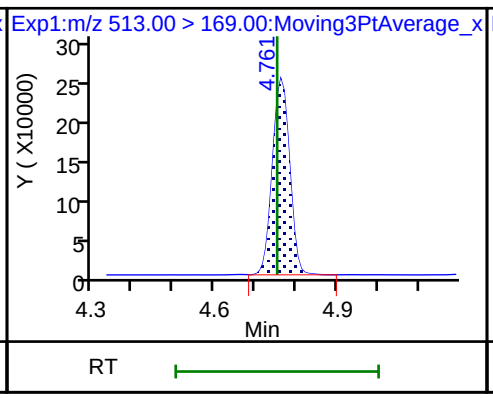
34 Perfluorooctanesulfonamide



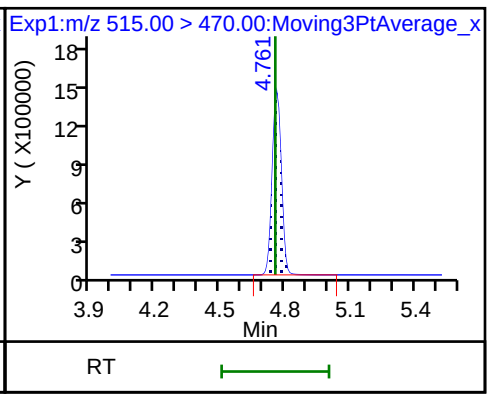
37 Perfluorodecanoic acid



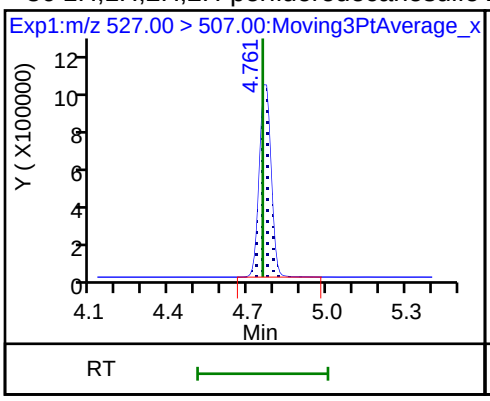
37 Perfluorodecanoic acid



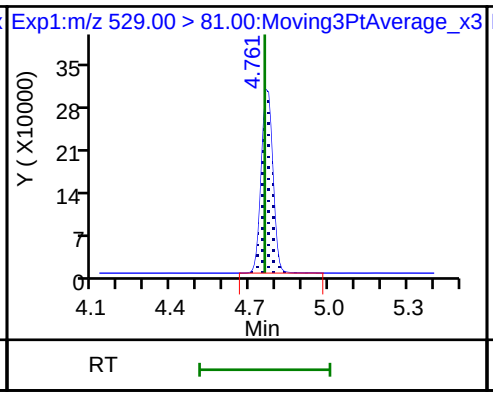
D 39 13C2 PFDA



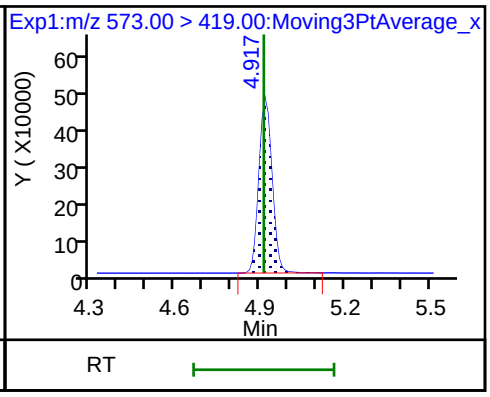
36 1H,1H,2H,2H-perfluorodecanesulfo



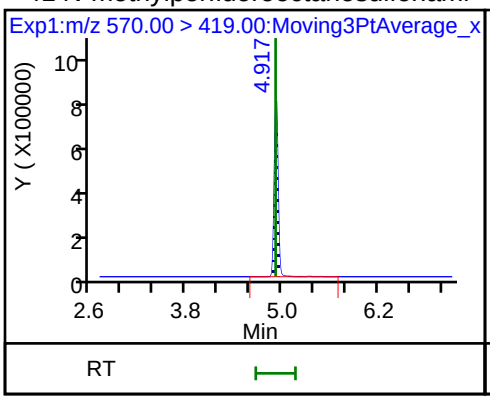
D 38 M2-8:2 FTS



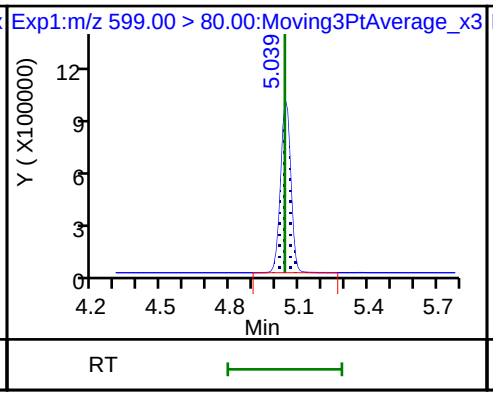
D 40 d3-NMeFOSAA



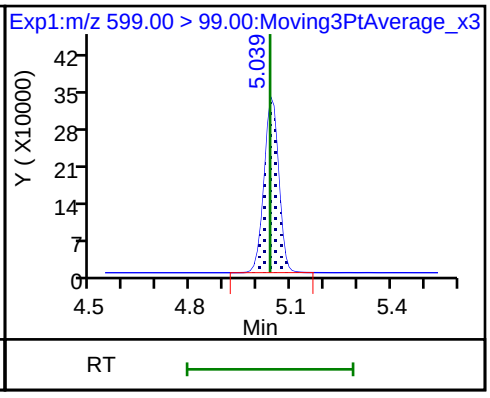
41 N-methylperfluorooctanesulfonami



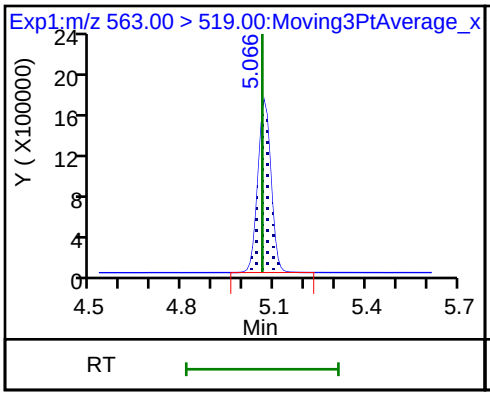
42 Perfluorodecanesulfonic acid



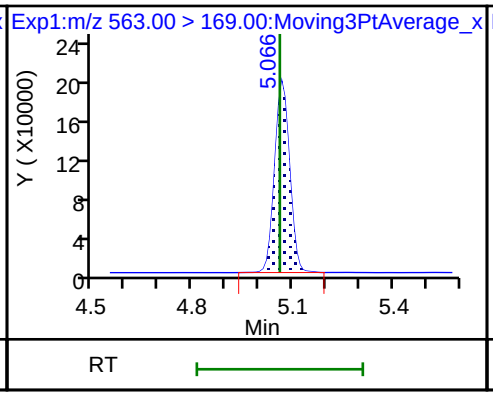
42 Perfluorodecanesulfonic acid



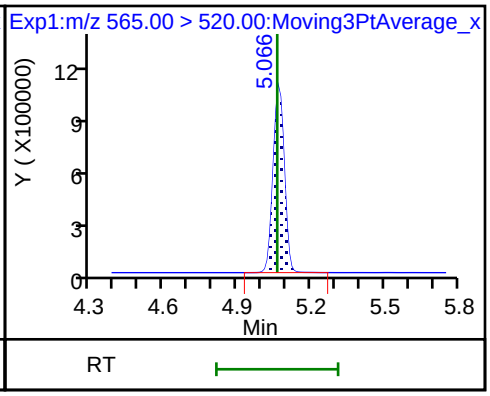
45 Perfluoroundecanoic acid



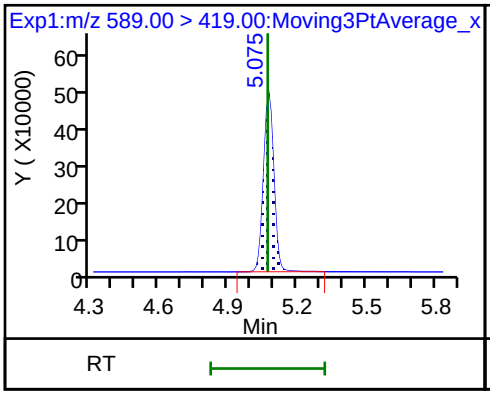
45 Perfluoroundecanoic acid



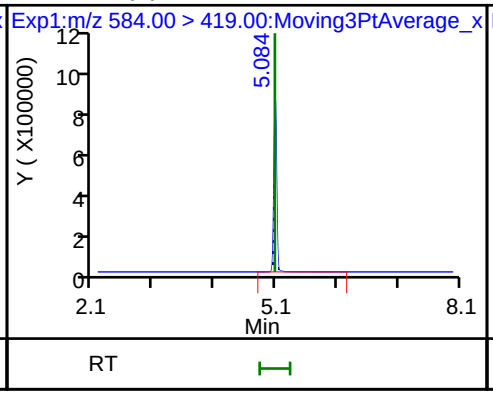
D 43 13C2 PFUnA



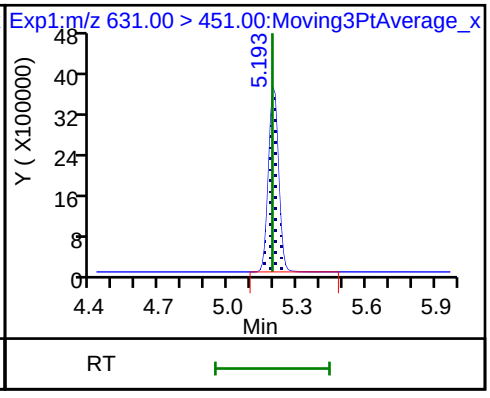
D 44 d5-NEtFOSAA



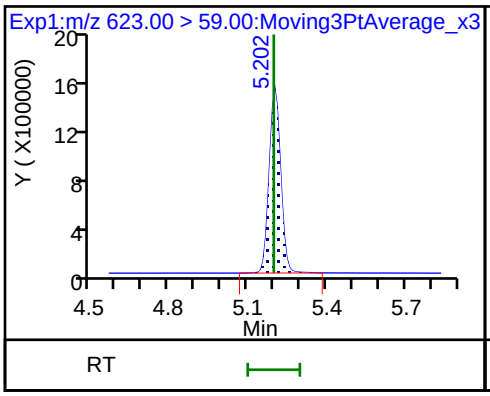
46 N-ethylperfluorooctanesulfonamid



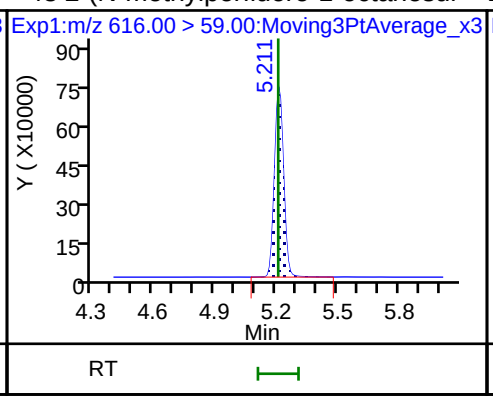
51 11-Chloroeicosafluoro-3-oxaundec



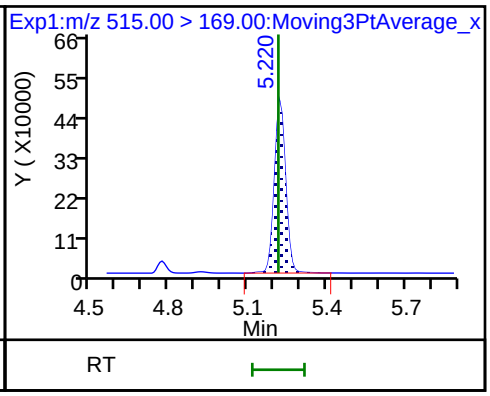
D 47 d7-N-MeFOSE-M



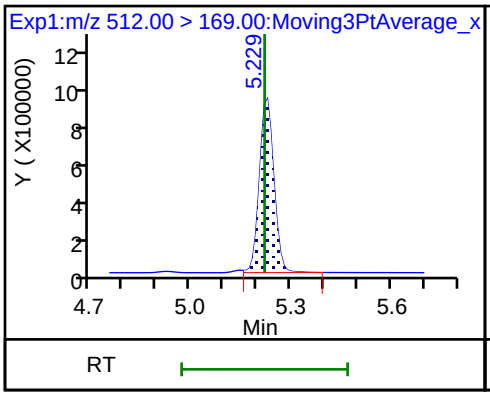
48 2-(N-methylperfluoro-1-octanesul



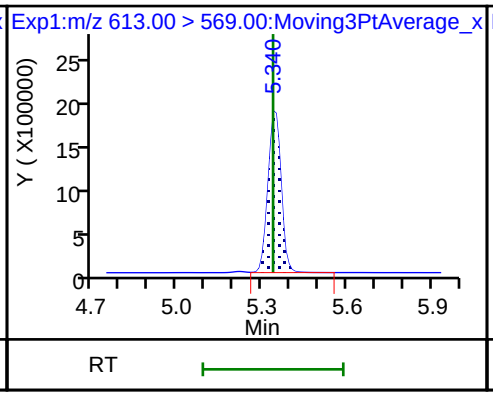
D 49 d-N-MeFOSA-M



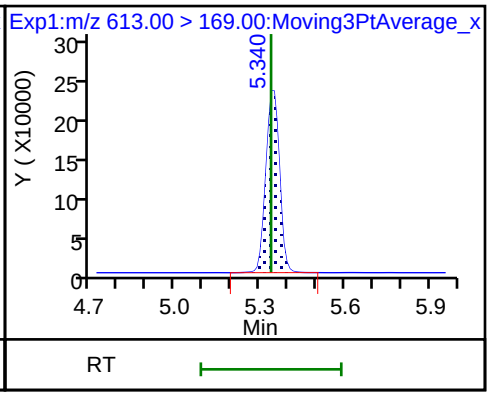
50 NMeFOSA



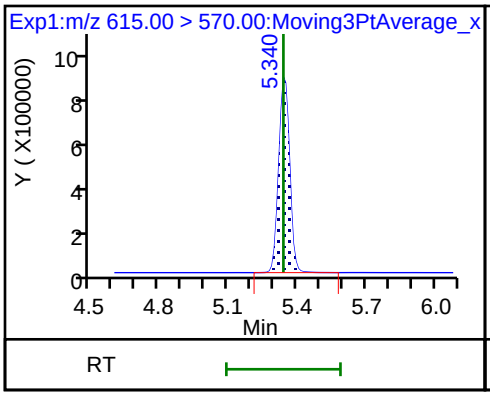
57 Perfluorododecanoic acid



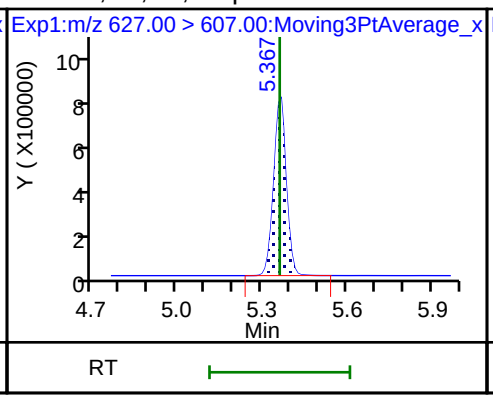
57 Perfluorododecanoic acid



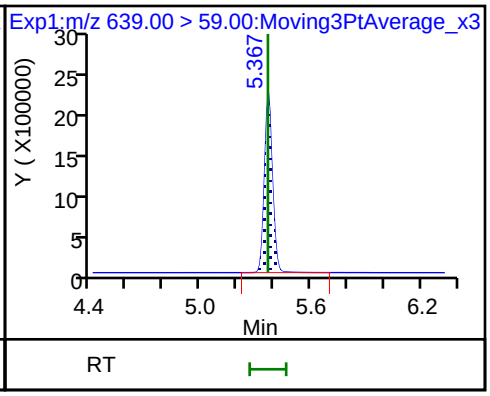
D 56 13C2 PFDoA



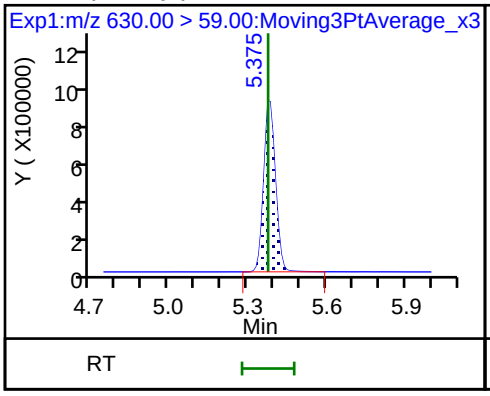
58 1H,1H,2H,2H-perfluorododecanesul



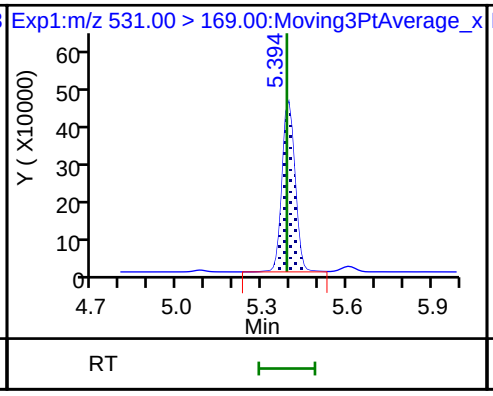
D 52 d9-N-EtFOSE-M



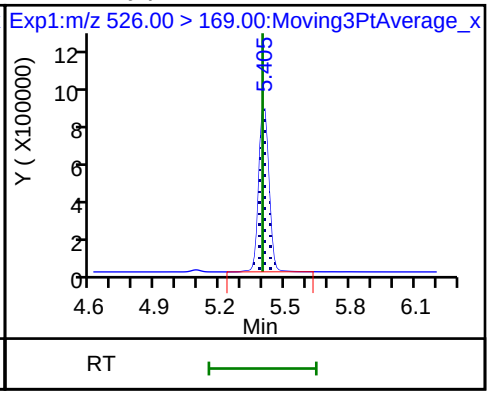
53 2-(N-ethylperfluoro-1-octanesulf



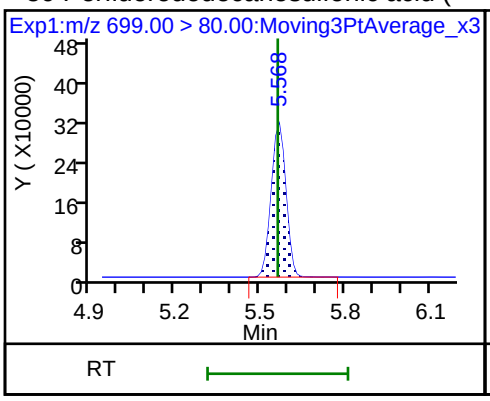
D 54 d-N-EtFOSA-M



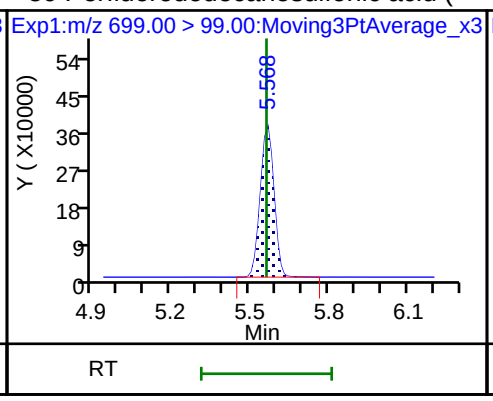
55 N-ethylperfluoro-1-octanesulfona



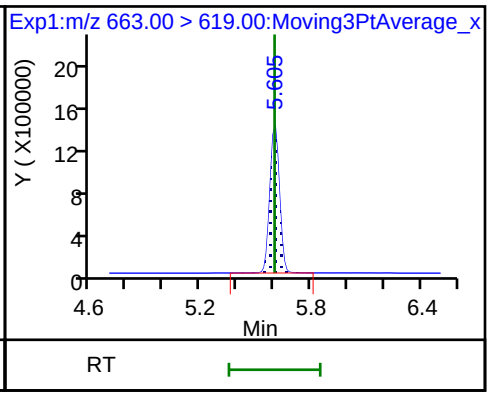
59 Perfluorododecanesulfonic acid (



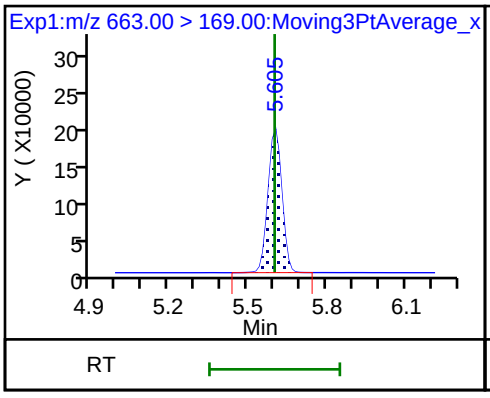
59 Perfluorododecanesulfonic acid (



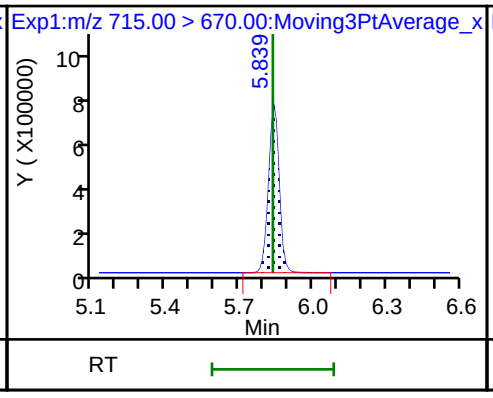
60 Perfluorotridecanoic acid



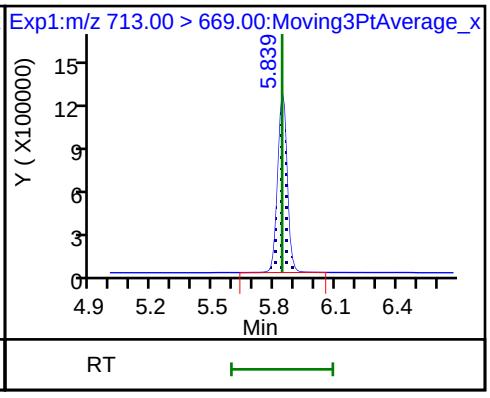
60 Perfluorotridecanoic acid



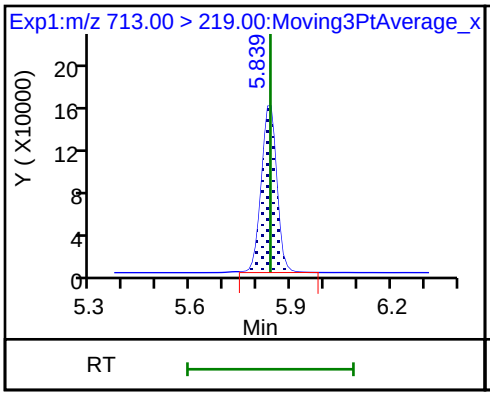
D 61 13C2 PFTeDA



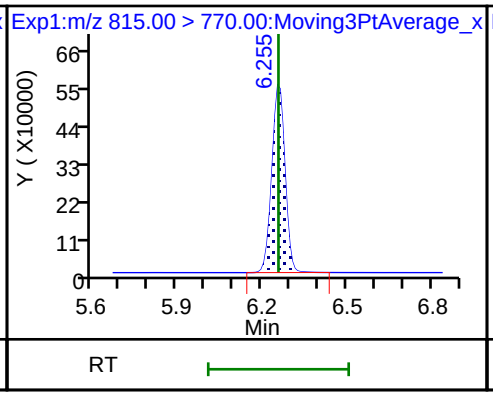
62 Perfluorotetradecanoic acid



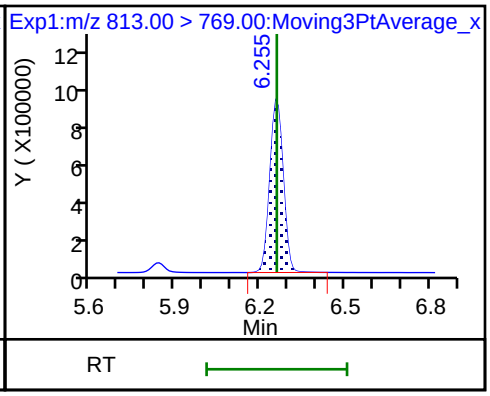
62 Perfluorotetradecanoic acid



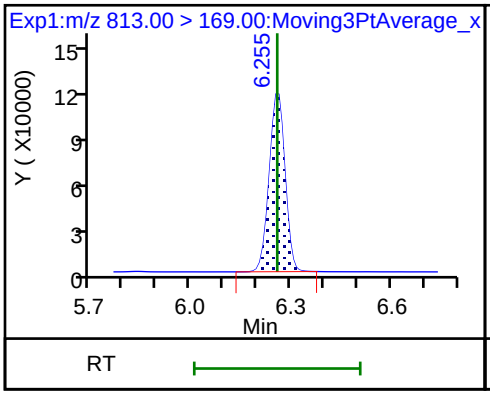
D 64 13C2 PFHxDA



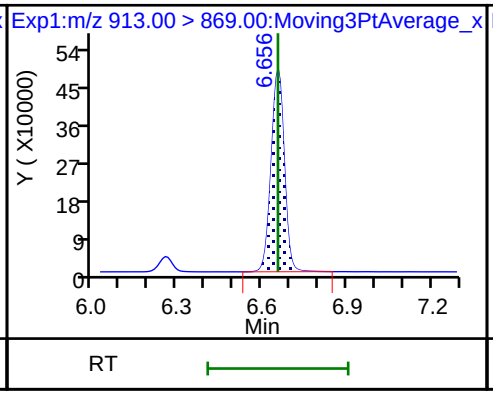
63 Perfluorohexadecanoic acid



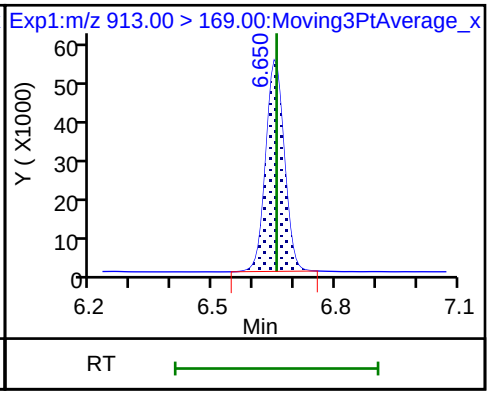
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 04-Jun-2020 12:51:36 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 7 (24)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:55 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:42:35
Ratio Calibration: Average of Initial Calibration

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	2.538	2.549	-0.011	0.628	8854156	2.66		106	16647	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.538	2.551	-0.013	1.000	34571646	10.5		105	9287	
D 4 13C5 PFPeA										
267.90 > 223.00	2.876	2.895	-0.019	0.712	7601881	2.56		102	16111	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.886	2.898	-0.012	1.004	29781182	9.72		97.2	2229	
D 9 13C3 PFBS										
301.90 > 80.00	2.917	2.930	-0.013	0.722	4903914	2.38		102	14968	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.917	2.930	-0.013	1.000	18781556	9.13	Target=2.14	103	9429	
298.90 > 99.00	2.917	2.930	-0.013	1.000	8738611		2.15(1.07-3.21)	103	5025	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.212	3.226	-0.014	0.795	667497	2.44		104	1494	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.212	3.227	-0.015	1.000	6380089	9.90		106	25539	
D 11 13C2 PFHxA										
315.00 > 270.00	3.246	3.267	-0.021	0.804	7499391	2.60		104	14234	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.246	3.267	-0.021	1.000	27188259	9.67	Target=15.73	96.7	8378	
313.00 > 119.00	3.246	3.267	-0.021	1.000	1823447		14.91(7.86-23.59)	96.7	4170	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.265	3.285	-0.020	1.120	15215091	9.83	Target=2.69	105	15472	
349.00 > 99.00	3.265	3.285	-0.020	1.120	5645245		2.70(1.35-4.04)	105	13936	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.370	3.386	-0.016	0.834	1747744	2.65		106	8465	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.370	3.386	-0.016	1.000	6739451	10.6		106	13986	
D 18 13C4 PFHpA										
367.00 > 322.00	3.647	3.661	-0.014	0.903	6067869	2.65		106	11425	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.647	3.662	-0.015	1.000	23968023	9.77	Target=3.80	97.7	6515	
363.00 > 169.00	3.647	3.662	-0.015	1.000	6309266		3.80(1.90-5.71)	97.7	10396	
D 17 18O2 PFHxS										
403.00 > 84.00	3.647	3.667	-0.020	0.903	2433067	2.46		104	6877	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.657	3.670	-0.013	1.003	10374885	8.98	Target=2.99	98.7	10548	
399.00 > 99.00	3.657	3.670	-0.013	1.003	3503351		2.96(1.50-4.49)	98.7	4697	
19 DONA										
377.00 > 251.00	3.696	3.709	-0.013	0.841	57185309	9.61	Target=2.14	102	26885	
377.00 > 85.00	3.696	3.709	-0.013	0.841	27851798		2.05(1.07-3.21)	102	27655	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.014	4.030	-0.016	0.994	675627	2.23		94.0	4216	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.023	4.032	-0.009	1.002	5537814	9.90		104	11093	
$ 26 13C8 PFOA										
421.00 > 376.00	4.039	4.046	-0.007	1.000	3139164	2.47		101	10919	
D 25 13C4 PFOA										
417.00 > 372.00	4.039	4.051	-0.012	1.000	5023412	2.43		97.0	9777	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.039	4.046	-0.007	0.919	8584960	9.70	Target=3.77	102	7522	
449.00 > 99.00	4.039	4.046	-0.007	0.919	2254394		3.81(1.89-5.66)	102	5814	
* 23 13C2 PFOA										
415.00 > 370.00	4.039	4.051	-0.012		5252289	2.50			8921	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.039	4.052	-0.013	1.000	19898971	9.37	Target=2.88	93.7	1525	
413.00 > 169.00	4.039	4.052	-0.013	1.000	6730775		2.96(1.44-4.31)	93.7	41708	
$ 28 13C8 PFOS										
507.00 > 99.00	4.396	4.400	-0.004	1.088	628417	2.40		101	3548	
D 27 13C4 PFOS										
503.00 > 80.00	4.396	4.402	-0.006	1.088	1938926	2.52		106	4182	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.396	4.403	-0.007	1.000	7733680	9.63	Target=4.89	104	3735	
499.00 > 99.00	4.396	4.403	-0.007	1.000	1485107		5.21(2.44-7.33)	104	2667	M
D 30 13C5 PFNA										
468.00 > 423.00	4.412	4.417	-0.005	1.092	3617340	2.28		91.3	7824	
31 Perfluorononanoic acid										
463.00 > 419.00	4.412	4.417	-0.005	1.000	16953333	11.6	Target=7.00	116	3030	
463.00 > 169.00	4.412	4.417	-0.005	1.000	2380609		7.12(3.50-10.51)	116	7225	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.589	4.592	-0.003	1.044	22044857	9.96		107	21274	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.728	4.732	-0.004	1.076	6203149	9.57	Target=2.77	99.7	7698	
549.00 > 99.00	4.728	4.732	-0.004	1.076	2153250		2.88(1.38-4.15)	99.7	11095	
D 33 13C8 FOSA										
506.00 > 78.00	4.750	4.747	0.003	1.176	3671593	2.40		96.0	5781	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.750	4.749	0.001	1.000	13439661	10.4		104	3987	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.750	4.752	-0.002	0.998	12463138	9.30	Target=10.36	93.0	2813	
513.00 > 169.00	4.758	4.752	0.006	1.000	1336546		9.32(5.18-15.54)	93.0	182	
D 39 13C2 PFDA										
515.00 > 470.00	4.758	4.754	0.004	1.178	3469185	2.30		91.8	10434	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.758	4.755	0.003	1.000	5175859	9.42		98.3	10904	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.758	4.755	0.003	1.178	806507	2.24		93.4	3302	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.914	4.912	0.002	1.217	1547401	2.74		110	1995	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.914	4.915	-0.001	1.000	5113067	11.3		113	78321	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.037	5.037	0.0	1.146	5496367	9.67	Target=2.97	100	9932	
599.00 > 99.00	5.037	5.037	0.0	1.146	1839265		2.99(1.49-4.46)	100	7145	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.064	5.060	0.004	1.000	9119579	10.8	Target=7.56	108	3919	
563.00 > 169.00	5.064	5.060	0.004	1.000	1129556		8.07(3.78-11.34)	108	3878	
D 43 13C2 PFUnA										
565.00 > 520.00	5.064	5.062	0.002	1.254	2928045	2.27		90.9	17976	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.073	5.071	0.002	1.256	1442788	2.51		101	1815	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.073	5.075	-0.002	1.000	4655395	11.4		114	29727	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.191	5.191	0.0	1.181	20853238	9.97		106	16773	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.200	5.198	0.002	1.288	5098711	13.2		106	4022	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.209	5.209	0.0	1.002	4664590	10.9		109	3922	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.218	5.215	0.003	1.292	1405336	2.91		116	342	
50 NMeFOSA										
512.00 > 169.00	5.227	5.220	0.007	1.002	5283834	9.98		99.8	575	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.338	5.338	0.0	0.998	10185088	9.34	Target=7.18	93.4	1621	
613.00 > 169.00	5.338	5.338	0.0	0.998	1473588		6.91(3.59-10.76)	93.4	6303	
D 56 13C2 PFDoA										
615.00 > 570.00	5.347	5.339	0.008	1.324	2776822	2.43		97.3	8932	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.366	5.362	0.004	1.128	4543056	10.5		109	13790	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.366	5.364	0.002	1.329	6583228	14.0		112	5437	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.382	5.376	0.006	1.003	5649039	10.5		105	8403	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.393	5.387	0.005	1.335	1424762	2.91		116	237	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.403	5.395	0.008	1.002	5671182	9.93		99.3	716	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.566	5.562	0.004	1.266	2062682	10.4	Target=0.79	108	6543	
699.00 > 99.00	5.566	5.562	0.004	1.266	2525754		0.82(0.39-1.18)	108	5502	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.603	5.601	0.002	1.048	7988248	9.11	Target=6.63	91.1	1158	
663.00 > 169.00	5.603	5.601	0.002	1.048	1263743		6.32(3.32-9.95)	91.1	2612	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.839	5.835	0.004	1.446	2032789	2.72		109	8698	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.839	5.838	0.001	1.000	7387808	9.09	Target=8.46	90.9	1732	
713.00 > 219.00	5.839	5.838	0.001	1.000	796230		9.28(4.23-12.69)	90.9	5291	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.263	6.257	0.006	1.551	1345151	2.17		87.0	4739	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.263	6.258	0.005	1.000	6259487	13.6	Target=7.92	136	905	
813.00 > 169.00	6.263	6.258	0.005	1.000	596376		10.50(3.96-11.88)	136	3882	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.656	6.655	0.001	1.063	3042541	11.5	Target=10.24	115	558	
913.00 > 169.00	6.656	6.655	0.001	1.063	294429		10.33(5.12-15.36)	115	2226	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00022 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Injection Date: 04-Jun-2020 12:51:36 Instrument ID: A15

Lims ID: IC L7 Full

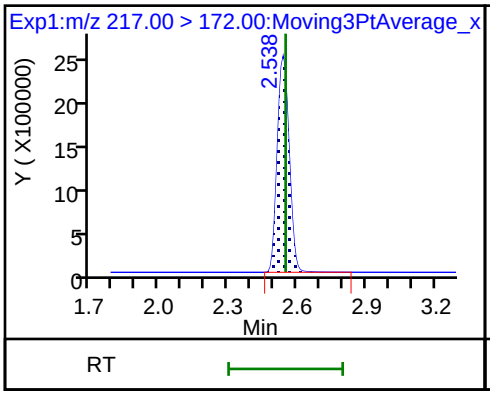
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 7 Worklist Smp#: 8

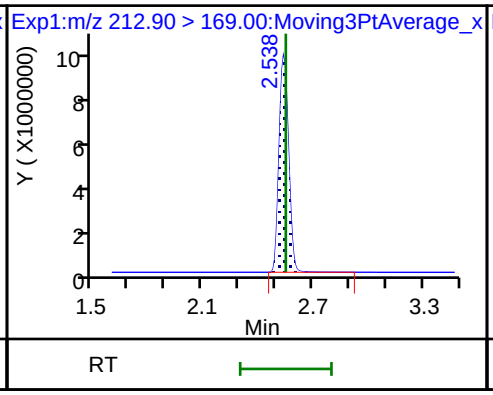
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

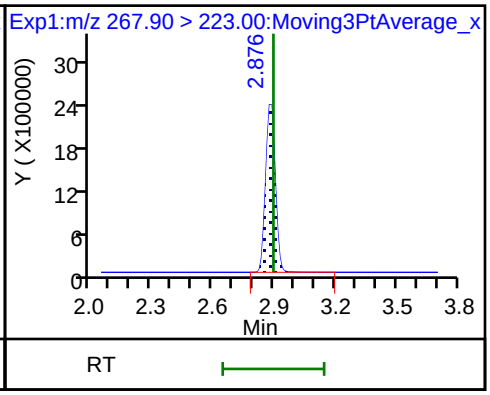
D 1 13C4 PFBA



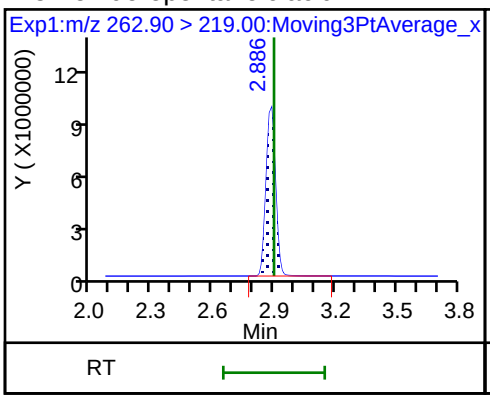
2 Perfluorobutanoic acid



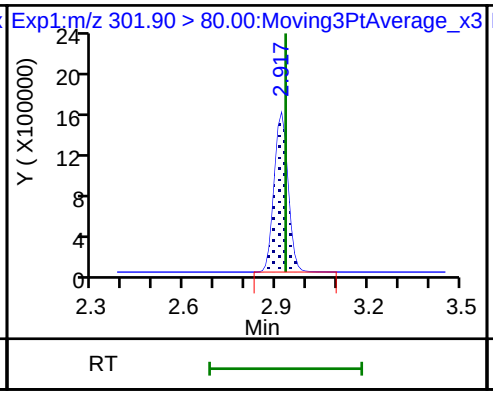
D 4 13C5 PFPeA



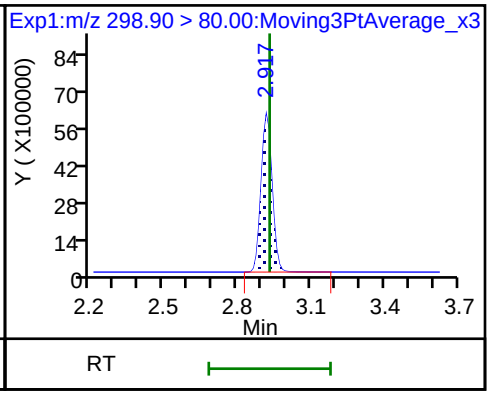
5 Perfluoropentanoic acid



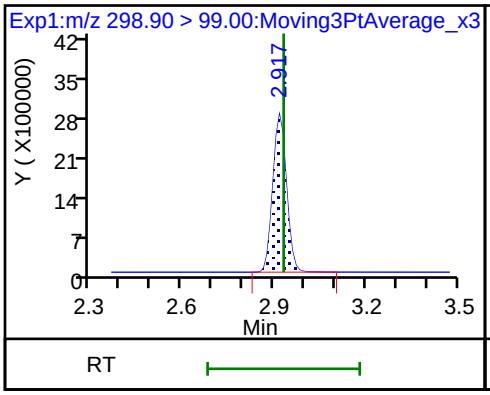
D 9 13C3 PFBS



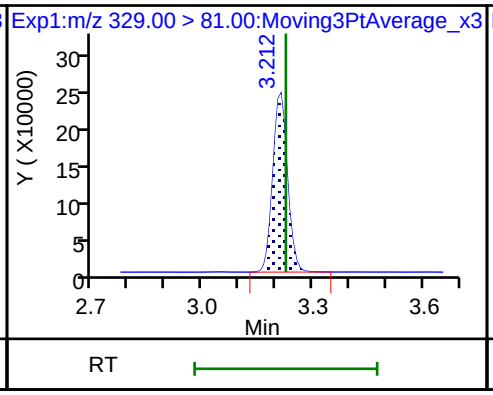
6 Perfluorobutanesulfonic acid



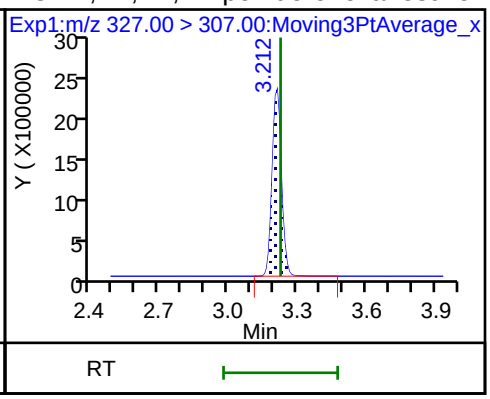
6 Perfluorobutanesulfonic acid



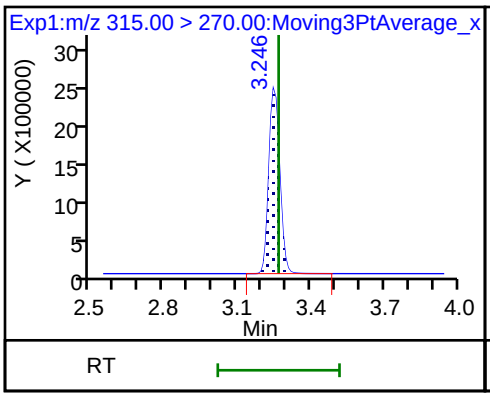
D 7 M2-4:2 FTS



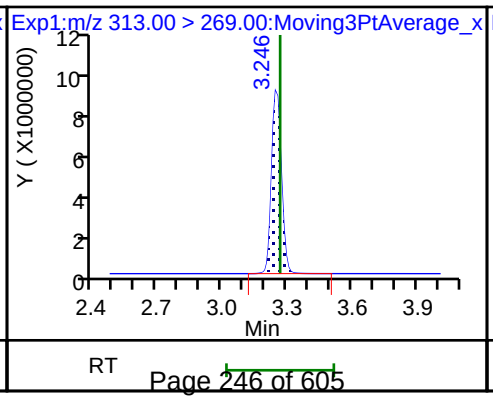
8 1H,1H,2H,2H-perfluorohexanesulfo



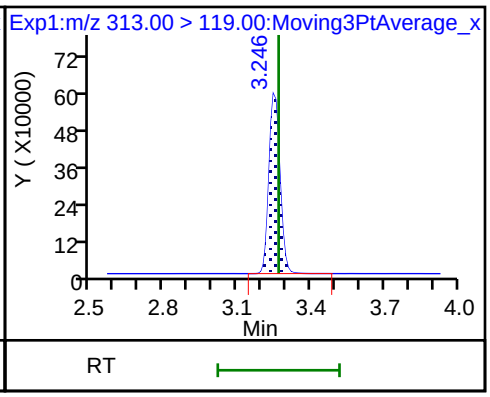
D 11 13C2 PFHxA



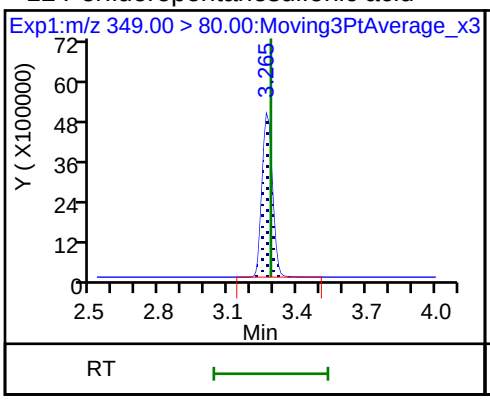
10 Perfluorohexanoic acid



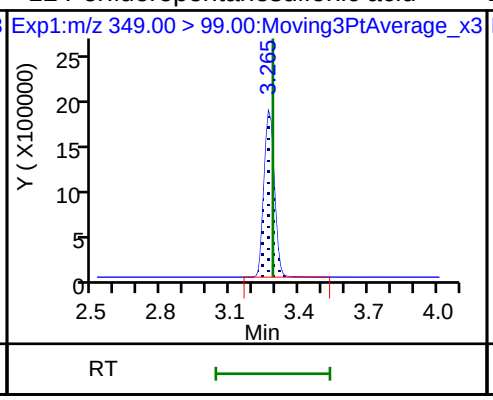
10 Perfluorohexanoic acid



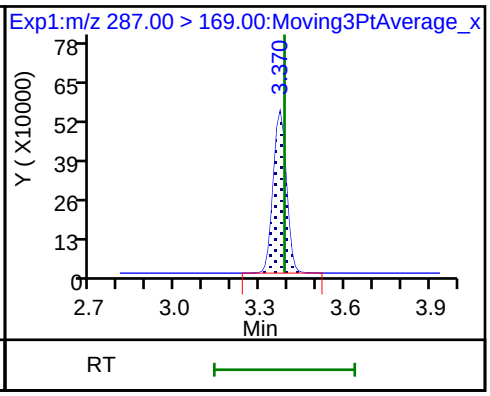
12 Perfluoropentanesulfonic acid



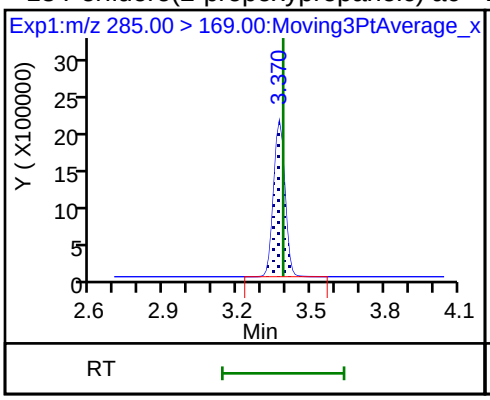
12 Perfluoropentanesulfonic acid



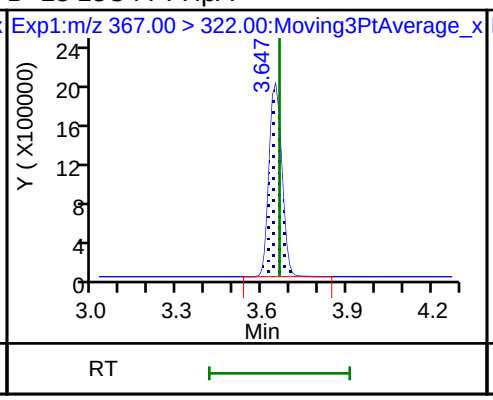
D 14 13C3 HFPO-DA



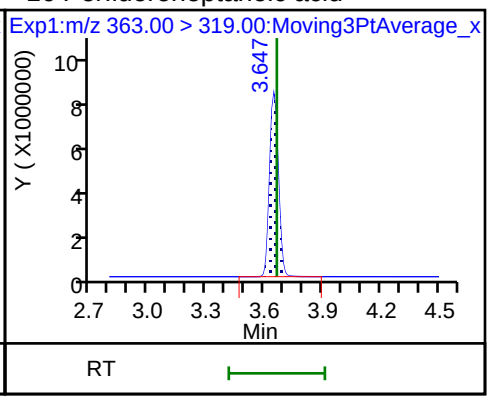
13 Perfluoro(2-propoxypropanoic) ac



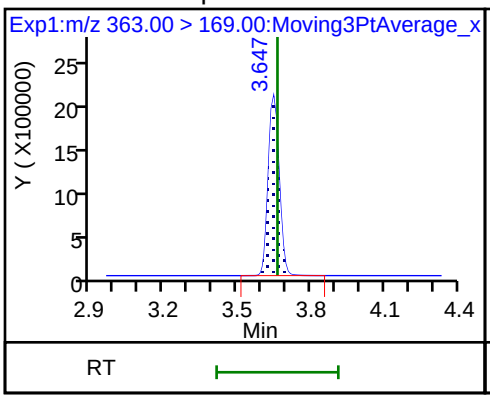
D 18 13C4 PFHpA



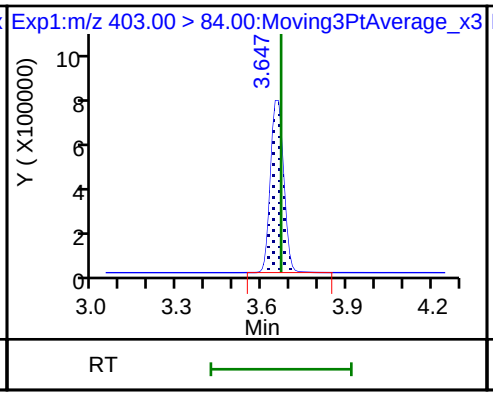
16 Perfluoroheptanoic acid



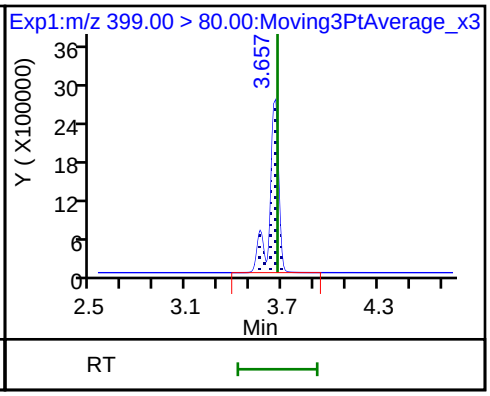
16 Perfluoroheptanoic acid



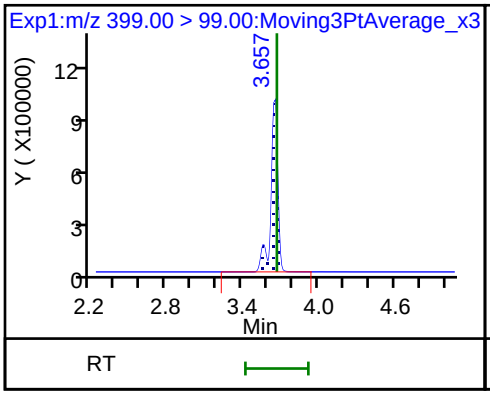
D 17 18O2 PFHxS



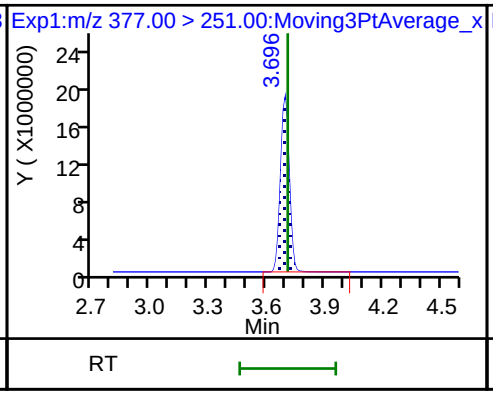
15 Perfluorohexanesulfonic acid



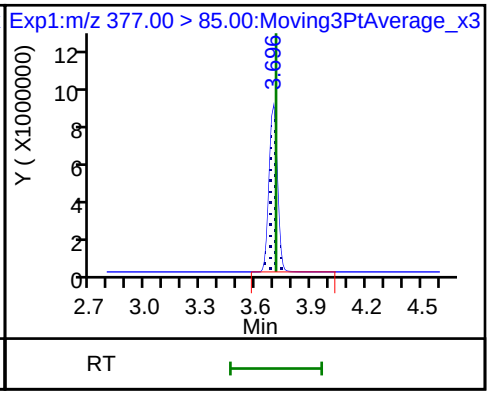
15 Perfluorohexanesulfonic acid



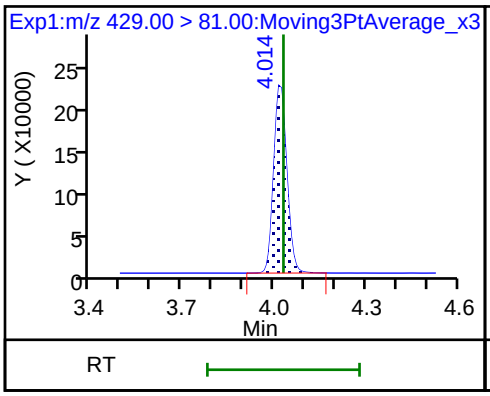
19 DONA



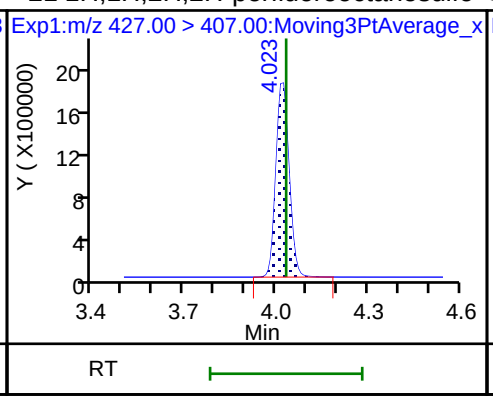
19 DONA



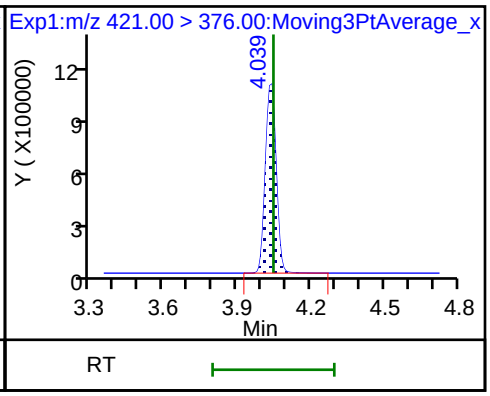
D 20 M2-6:2 FTS



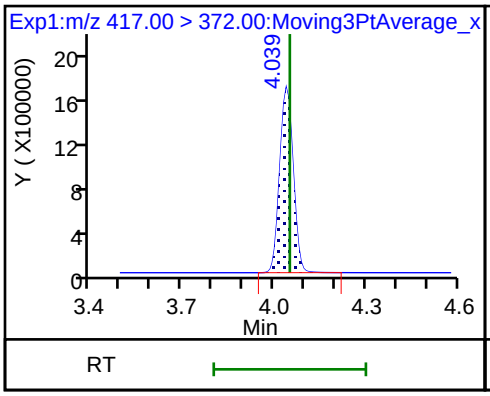
21 1H,1H,2H,2H-perfluorooctanesulfo



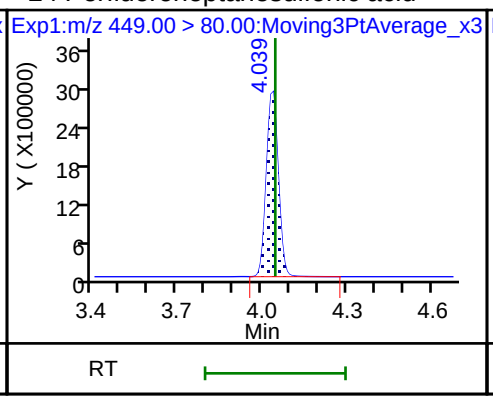
$ 26 13C8 PFOA



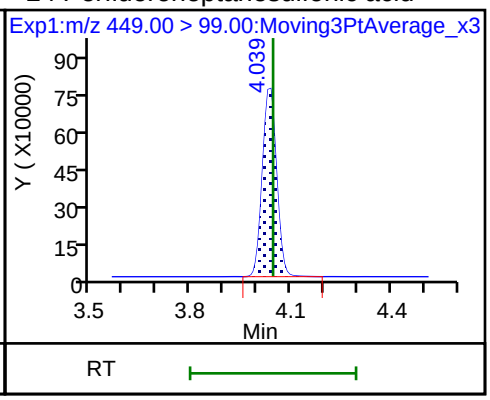
D 25 13C4 PFOA



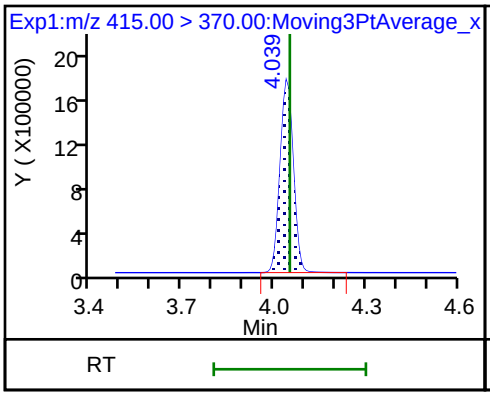
24 Perfluoroheptanesulfonic acid



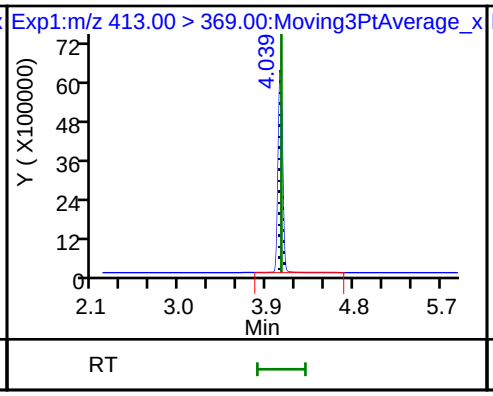
24 Perfluoroheptanesulfonic acid



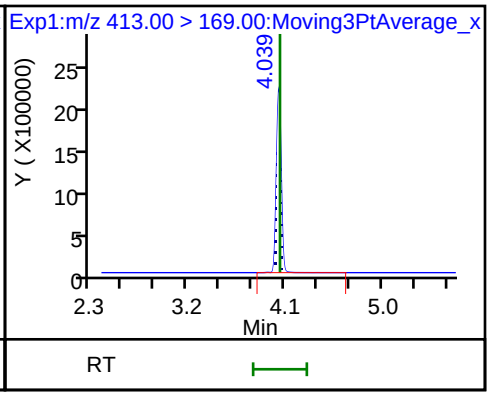
* 23 13C2 PFOA



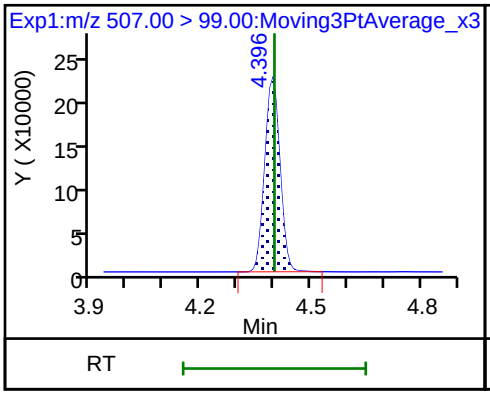
22 Perfluorooctanoic acid



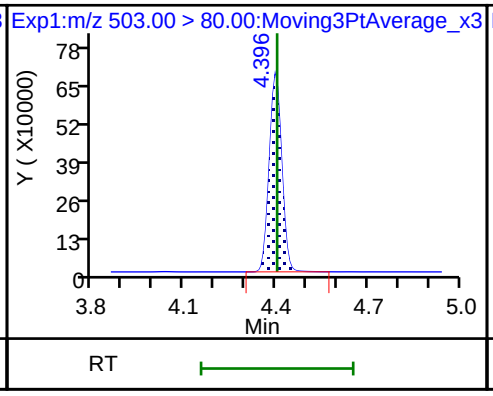
22 Perfluorooctanoic acid



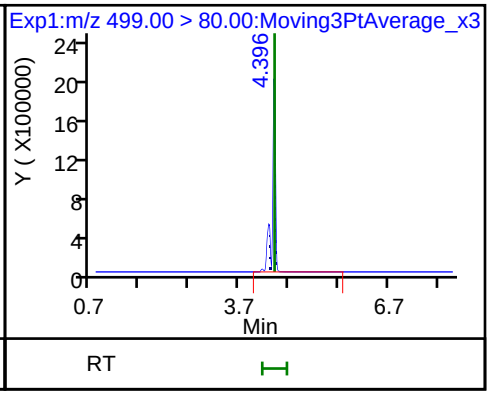
$ 28 13C8 PFOS



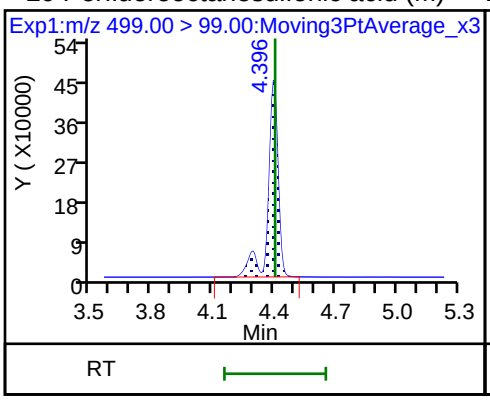
D 27 13C4 PFOS



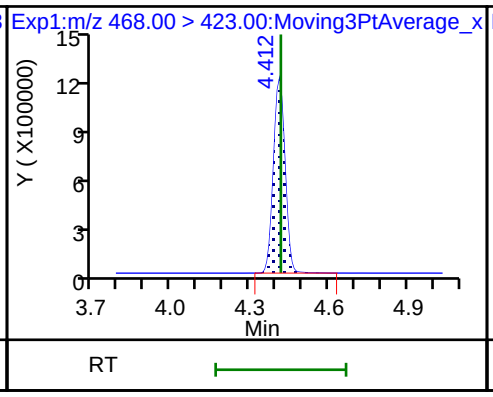
29 Perfluorooctanesulfonic acid



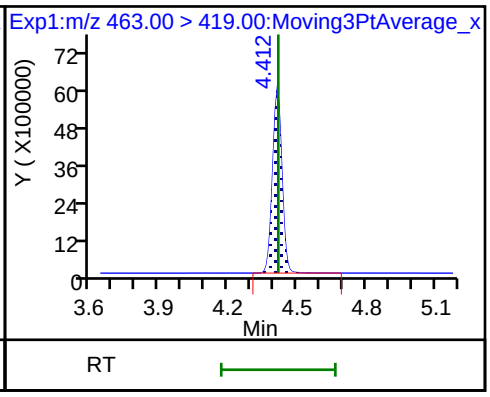
29 Perfluorooctanesulfonic acid (M)



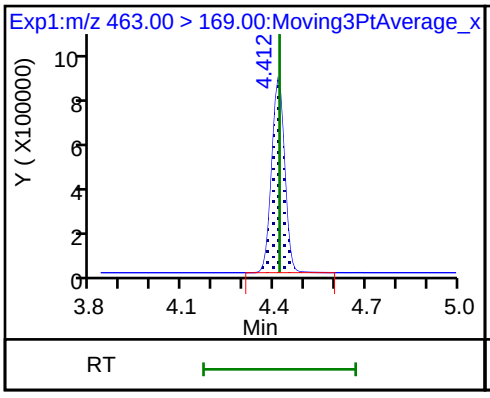
D 30 13C5 PFNA



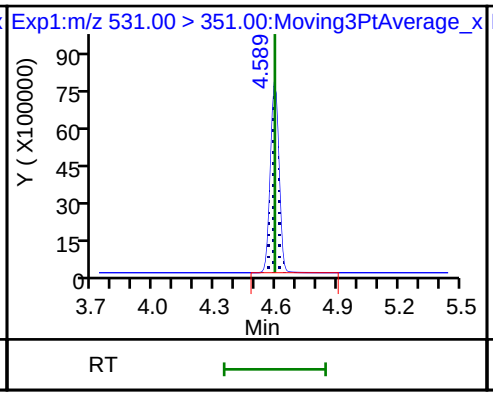
31 Perfluorononanoic acid



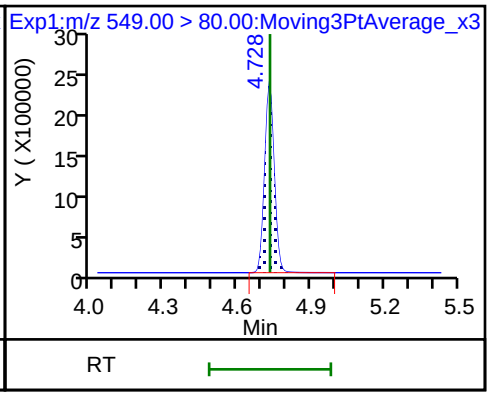
31 Perfluorononanoic acid



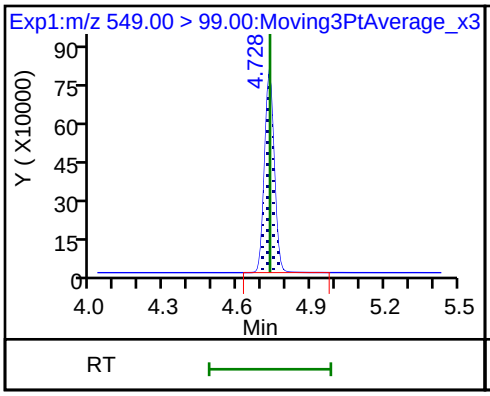
32 9-Chlorohexadecafluoro-3-oxanona



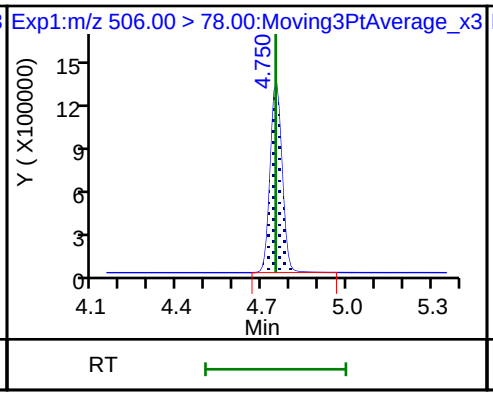
35 Perfluorononanesulfonic acid



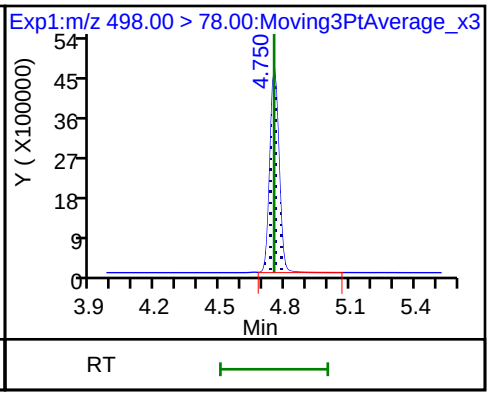
35 Perfluorononanesulfonic acid



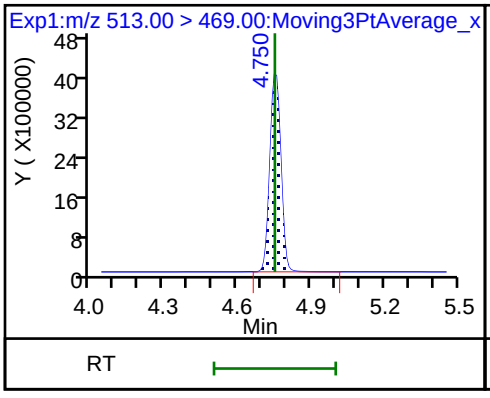
D 33 13C8 FOSA



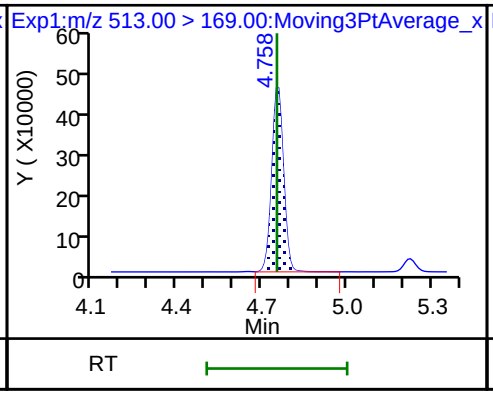
34 Perfluorooctanesulfonamide



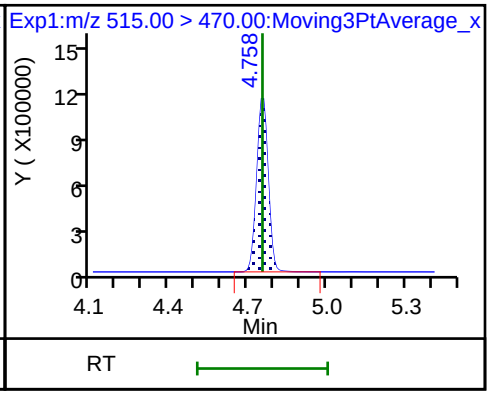
37 Perfluorodecanoic acid



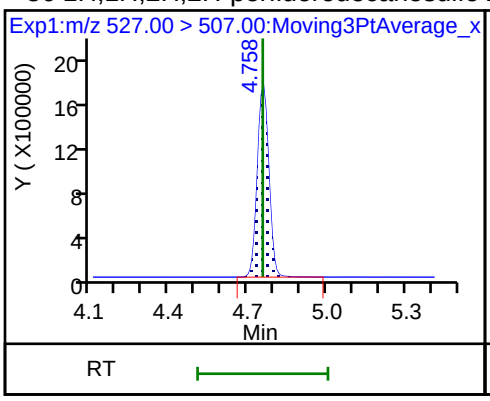
37 Perfluorodecanoic acid



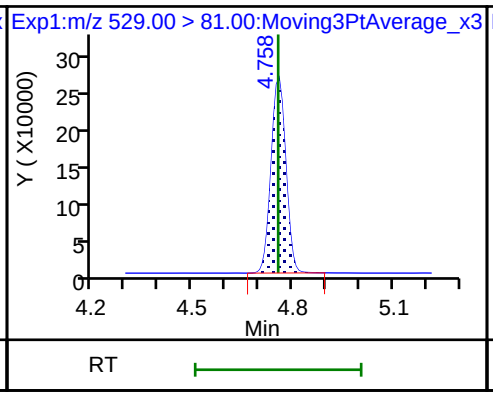
D 39 13C2 PFDA



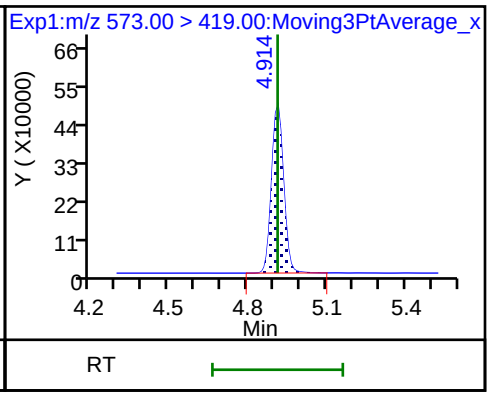
36 1H,1H,2H,2H-perfluorodecanesulfo



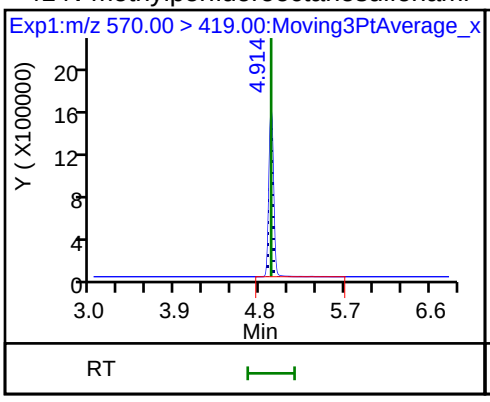
D 38 M2-8:2 FTS



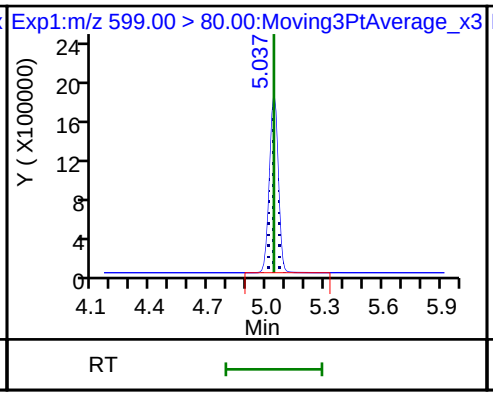
D 40 d3-NMeFOSAA



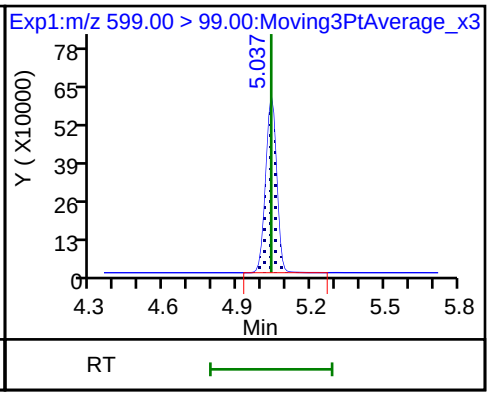
41 N-methylperfluorooctanesulfonami



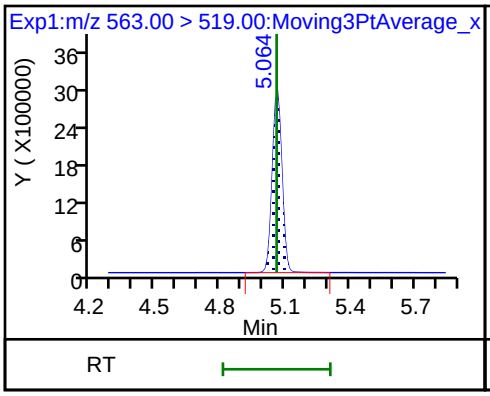
42 Perfluorodecanesulfonic acid



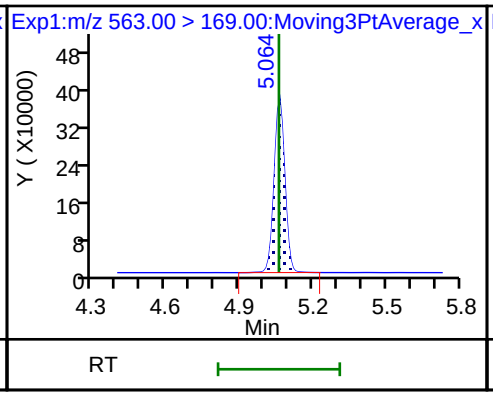
42 Perfluorodecanesulfonic acid



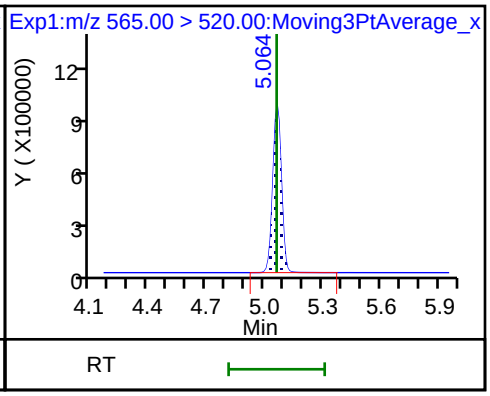
45 Perfluoroundecanoic acid



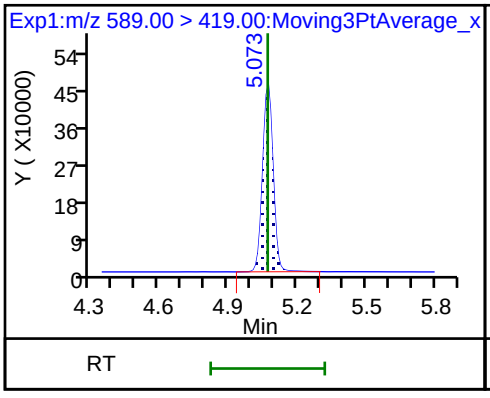
45 Perfluoroundecanoic acid



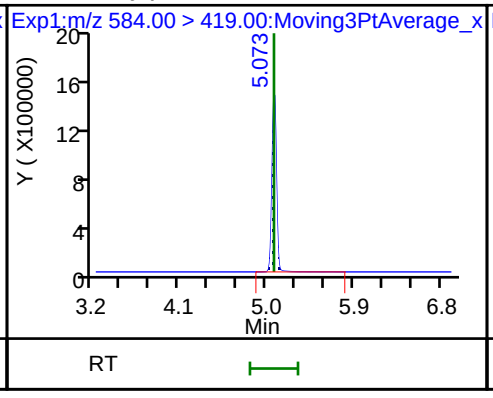
D 43 13C2 PFUnA



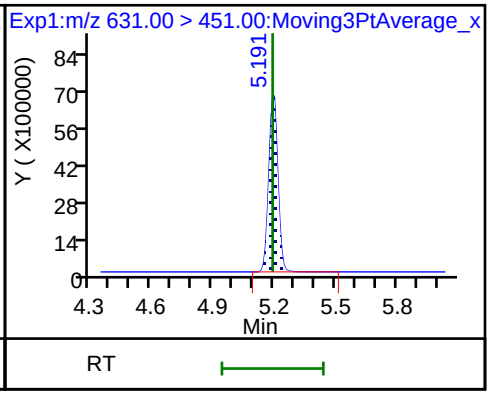
D 44 d5-NEtFOSAA



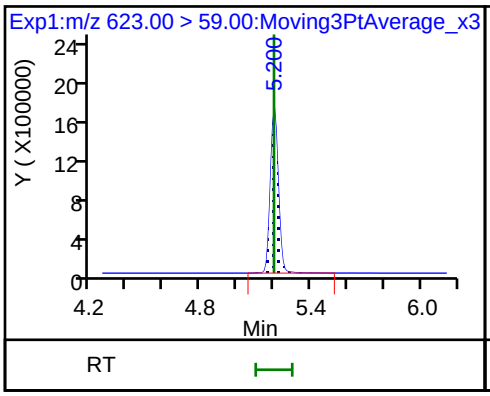
46 N-ethylperfluorooctanesulfonamid



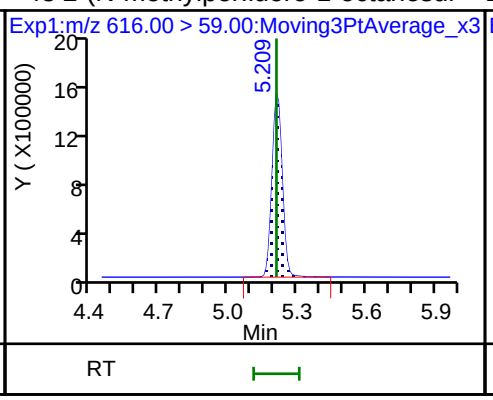
51 11-Chloroeicosafluoro-3-oxaundec



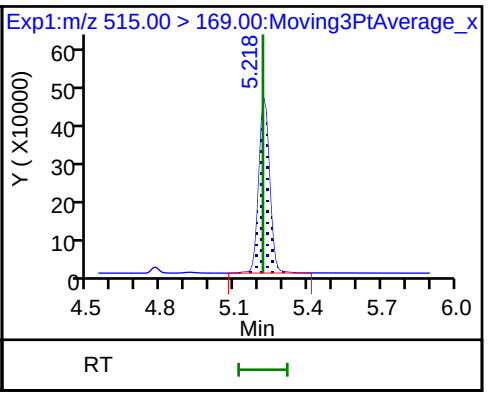
D 47 d7-N-MeFOSE-M



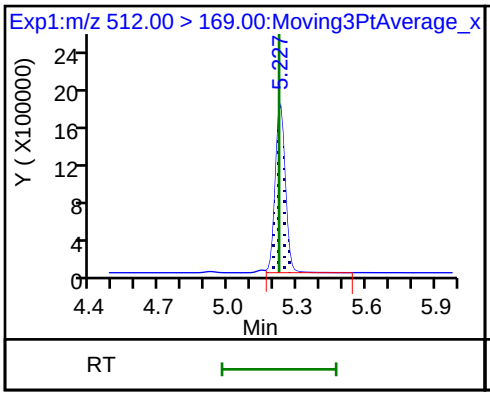
48 2-(N-methylperfluoro-1-octanesul



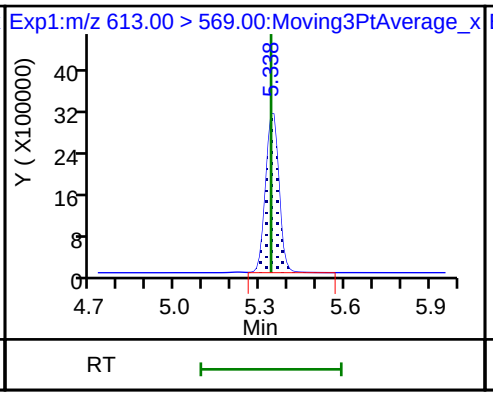
D 49 d-N-MeFOSA-M



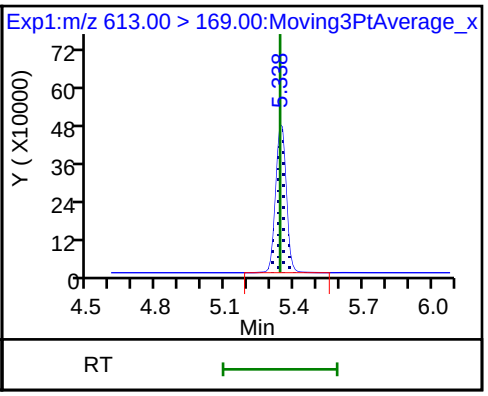
50 NMeFOSA



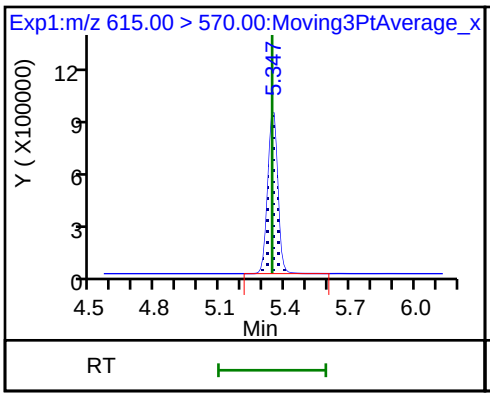
57 Perfluorododecanoic acid



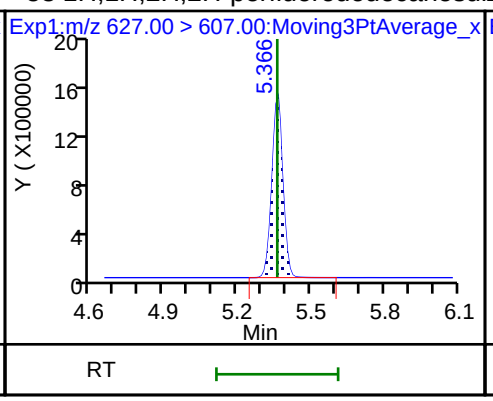
57 Perfluorododecanoic acid



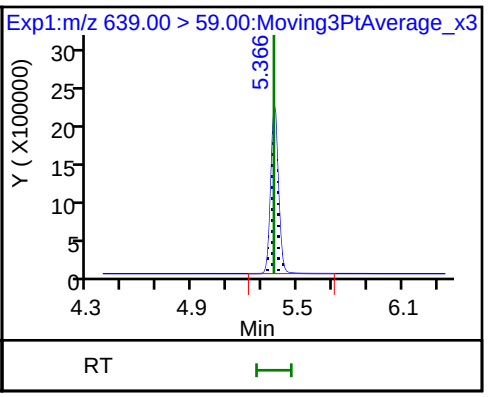
D 56 13C2 PFDoA



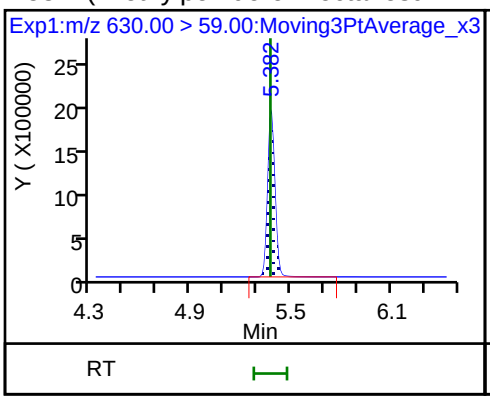
58 1H,1H,2H,2H-perfluorododecanesul



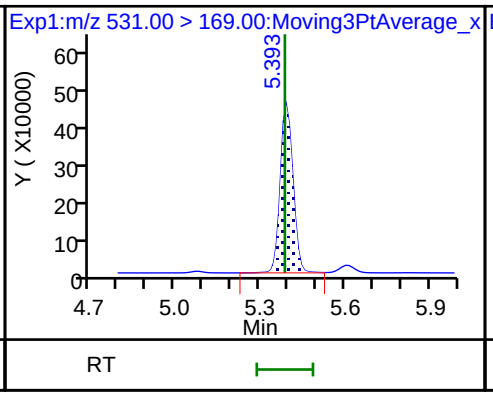
D 52 d9-N-EtFOSE-M



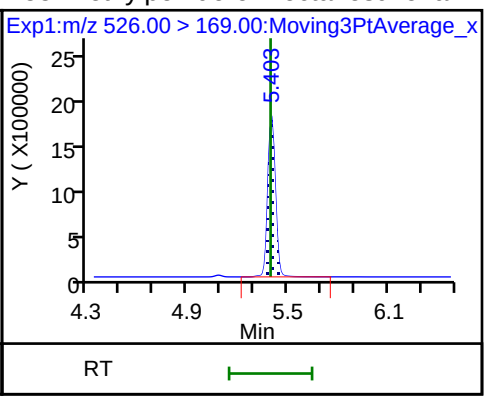
53 2-(N-ethylperfluoro-1-octanesulf



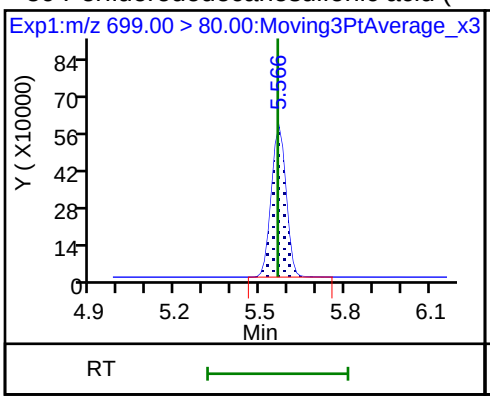
D 54 d-N-EtFOSA-M



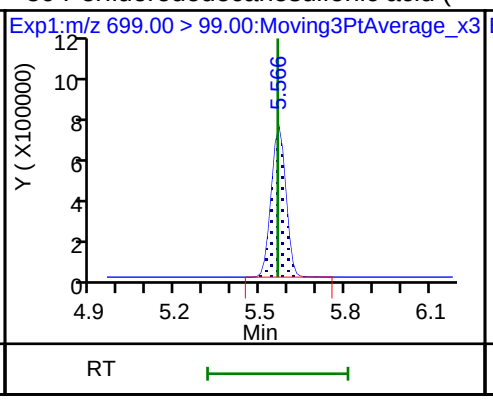
55 N-ethylperfluoro-1-octanesulfona



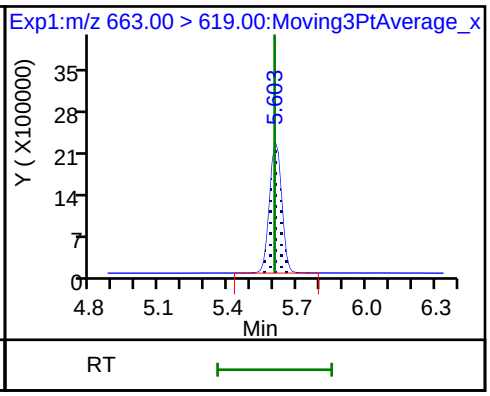
59 Perfluorododecanesulfonic acid (



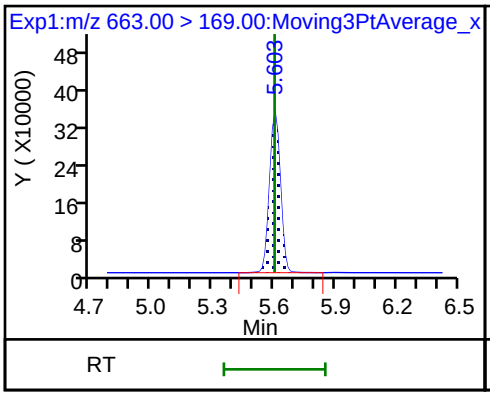
59 Perfluorododecanesulfonic acid (



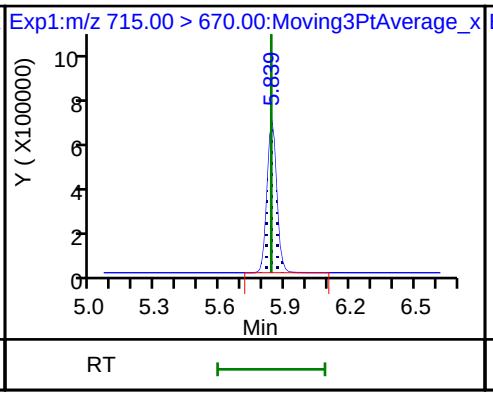
60 Perfluorotridecanoic acid



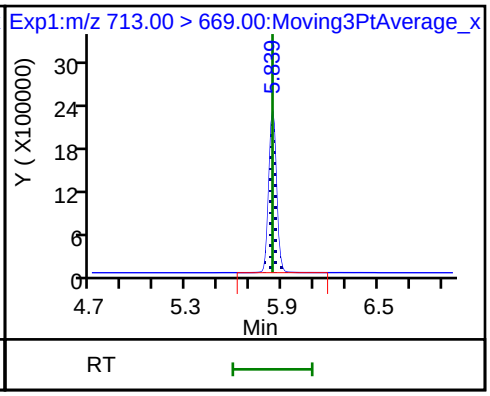
60 Perfluorotridecanoic acid



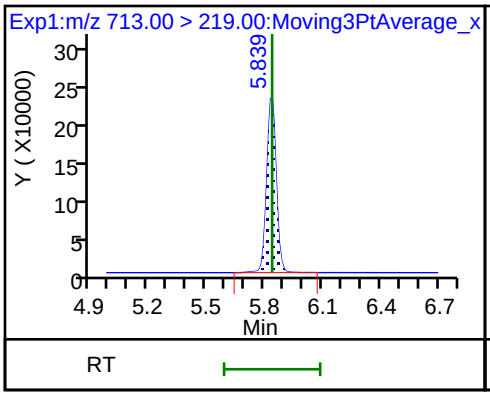
D 61 13C2 PFTeDA



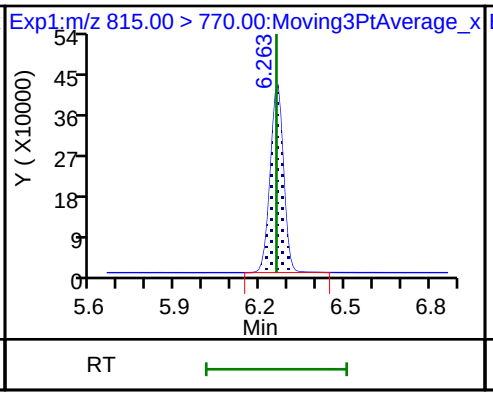
62 Perfluorotetradecanoic acid



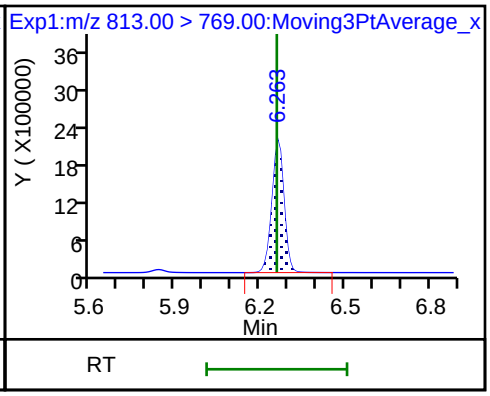
62 Perfluorotetradecanoic acid



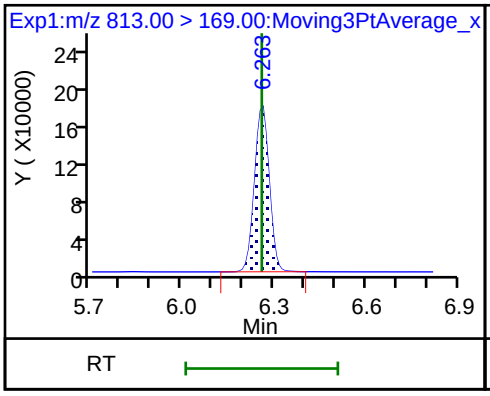
D 64 13C2 PFHxDA



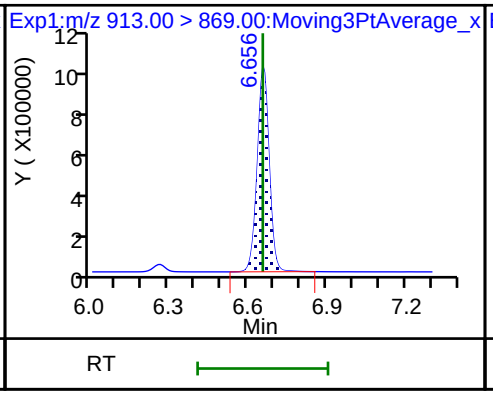
63 Perfluorohexadecanoic acid



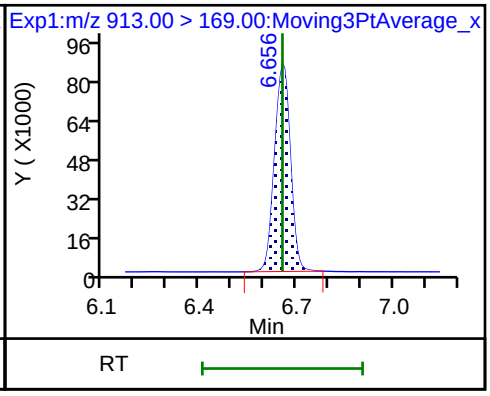
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

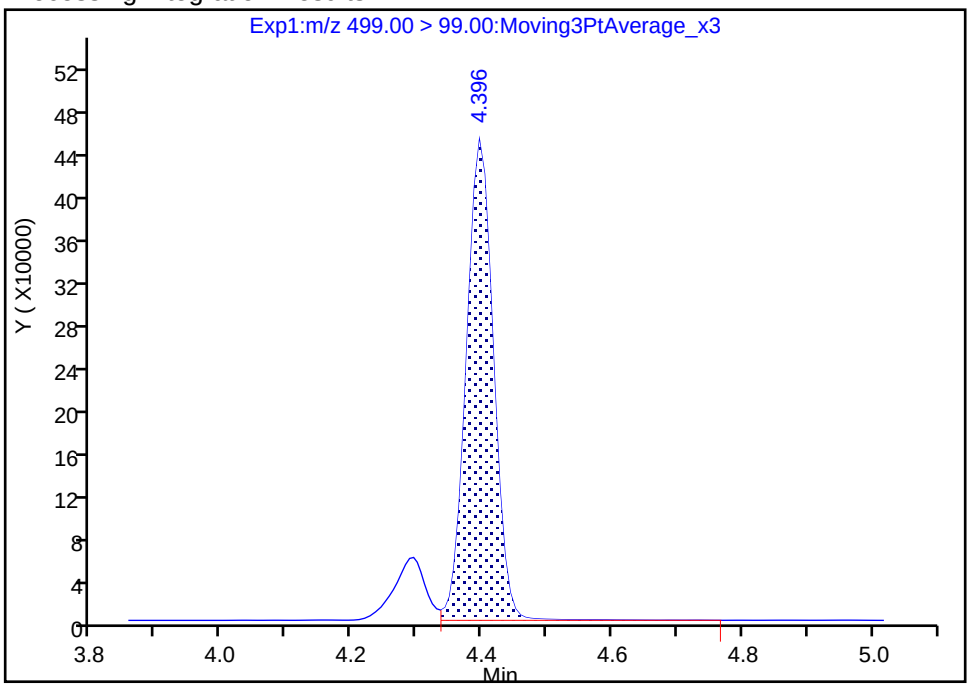
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d
Injection Date: 04-Jun-2020 12:51:36 Instrument ID: A15
Lims ID: IC L7 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

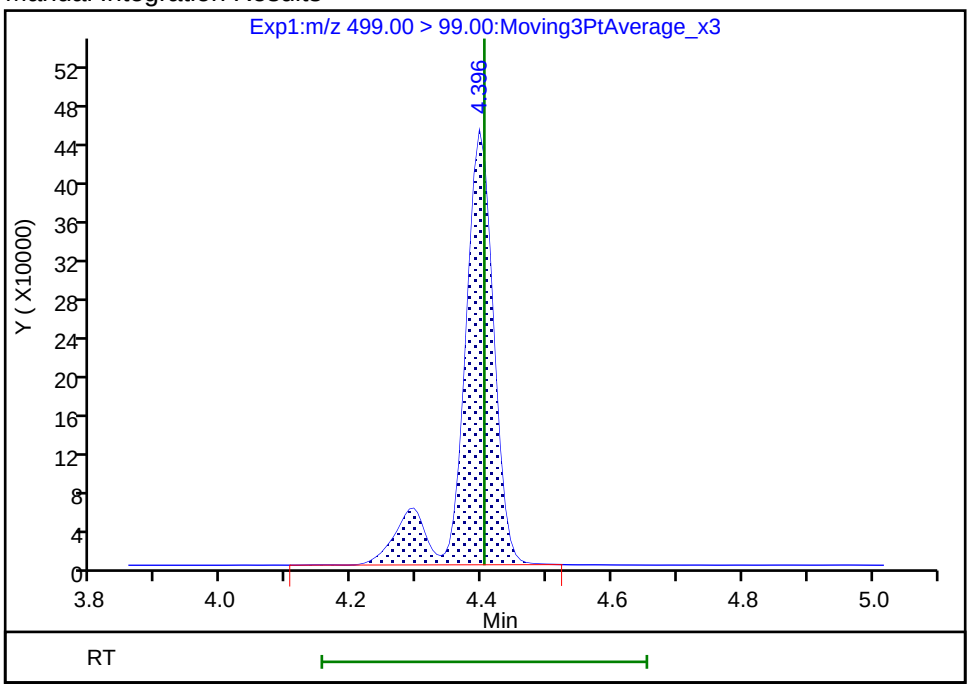
Processing Integration Results

RT: 4.40
Area: 1299029
Amount: 9.634828
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 1485107
Amount: 9.634828
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:42:06
Audit Action: Manually Integrated Audit Reason: Isomers

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 382530

SDG No.: 70132491

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

Calibration Start Date: 06/02/2020 15:24 Calibration End Date: 06/02/2020 16:30 Calibration ID: 50293

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-382530/2	2020.06.02_A9_PFC_ICAL_006.d
Level 2	IC 320-382530/3	2020.06.02_A9_PFC_ICAL_007.d
Level 3	IC 320-382530/4	2020.06.02_A9_PFC_ICAL_008.d
Level 4	IC 320-382530/5	2020.06.02_A9_PFC_ICAL_009.d
Level 5	IC 320-382530/6	2020.06.02_A9_PFC_ICAL_010.d
Level 6	IC 320-382530/7	2020.06.02_A9_PFC_ICAL_011.d
Level 7	IC 320-382530/9	2020.06.02_A9_PFC_ICAL_013.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.4526 0.4953	0.4648 0.4617	0.4883	0.4996	0.4933	AveID		0.4794				4.0		35.0			
Perfluoropentanoic acid (PFPeA)	1.2526 0.9810	1.1268 0.9551	1.0062	0.9792	1.0069	AveID		1.0440				10.3		35.0			
Perfluorobutanesulfonic acid (PFBS)	1.1253 1.0740	1.0295 0.9986	1.0916	1.1425	1.1447	AveID		1.0866				5.2		35.0			
4:2 FTS	2.7903 3.0123	2.3987 2.8254	3.1114	2.9644	2.9754	AveID		2.8683				8.2		35.0			
Perfluorohexanoic acid (PFHxA)	1.1470 1.0086	1.0113 0.9906	0.9815	1.0713	1.0490	AveID		1.0371				5.6		35.0			
Perfluoropentanesulfonic acid (PFPeS)	0.9580 0.9575	1.0559 0.8420	1.0524	1.0965	1.0997	AveID		1.0089				9.3		50.0			
HFPO-DA (GenX)	0.5701 0.5814	0.5726 0.5842	0.5515	0.6146	0.5786	AveID		0.5790				3.3		35.0			
Perfluoroheptanoic acid (PFHpA)	1.2846 1.2857	1.3510 1.1990	1.3163	1.3035	1.4044	AveID		1.3063				4.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3440 1.1730	1.2006 1.1181	1.1134	1.1450	1.1591	AveID		1.1790				6.7		35.0			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	1.7411 1.8659	2.0374 1.6404	1.9819	2.0793	1.9944	AveID		1.9058				8.6		50.0			
6:2 FTS	2.2544 2.2822	2.0262 2.2526	2.2181	2.2551	2.2989	AveID		2.2268				4.1		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	0.9413 1.0787	1.0858 0.9595	1.0372	1.0886	1.2118	AveID		1.0576				8.6		50.0			
Perfluorooctanoic acid (PFOA)	1.4386 1.1486	1.3758 1.0418	1.2974	1.2870	1.2132	AveID		1.2575				10.7		35.0			
Perfluorooctanesulfonic acid (PFOS)	1.0068 1.1182	1.1355 1.0548	1.0698	1.0683	1.1808	AveID		1.0906				5.3		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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 382530

SDG No.: 70132491

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

Calibration Start Date: 06/02/2020 15:24 Calibration End Date: 06/02/2020 16:30 Calibration ID: 50293

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorononanoic acid (PFNA)	1.0786 1.0846	1.0603 1.0042	1.1108	1.1323	1.1512	AveID		1.0888				4.5		35.0			
F-53B Major	0.9388 1.2229	1.1431 1.1458	1.1708	1.1923	1.2296	AveID		1.1490				8.6		50.0			
Perfluorononanesulfonic acid (PFNS)	0.6648 0.7261	0.6386 0.6535	0.6746	0.6992	0.6903	AveID		0.6782				4.4		50.0			
Perfluorooctanesulfonamide (FOSA)	3.2186 3.2472	3.4490 3.0696	3.0621	3.2818	3.4620	AveID		3.2557				4.9		35.0			
Perfluorodecanoic acid (PFDA)	0.8732 1.0245	1.0532 0.8940	1.0392	1.0795	1.0419	AveID		1.0008				8.2		35.0			
8:2 FTS	2.3749 2.1842	2.1683 2.0366	2.1856	2.1737	2.2933	AveID		2.2024				4.8		35.0			
NMeFOSAA	0.9680 0.8964	0.9086 0.8759	0.8888	0.9911	0.9628	AveID		0.9274				4.9		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.7351 0.8559	0.7722 0.7621	0.7743	0.8413	0.8997	AveID		0.8058				7.4		50.0			
Perfluoroundecanoic acid (PFUnA)	0.6885 0.7742	0.8285 0.7437	0.7784	0.8125	0.7797	AveID		0.7722				6.0		35.0			
NEtFOSAA	0.9743 0.8891	0.8319 0.9205	0.8891	0.8724	0.8953	AveID		0.8961				4.9		35.0			
F-53B Minor	1.5205 1.4721	1.6004 1.3612	1.6905	1.6164	1.6809	AveID		1.5631				7.6		50.0			
NMeFOSE	1.2674 1.4501	1.3543 1.4623	1.3436	1.5012	1.4460	AveID		1.4036				5.9		35.0			
NMeFOSA	0.9208 0.8143	0.8984 0.8391	0.7938	0.9808	0.9303	AveID		0.8825				7.7		35.0			
Perfluorododecanoic acid (PFDoA)	0.9603 1.0231	1.1263 0.8922	1.1114	1.1076	1.1175	AveID		1.0483				8.8		35.0			
10:2 FTS	1.6879 2.0025	2.0865 1.9238	1.9586	2.1185	1.9705	AveID		1.9641				7.1		50.0			
NEtFOSE	1.4631 1.5235	1.2228 1.4823	1.4959	1.5000	1.6039	AveID		1.4702				8.0		35.0			
NEtFOSA	1.2642 1.2156	1.2775 1.1977	1.2998	1.3404	1.3661	AveID		1.2802				4.8		35.0			
Perfluorododecanesulfonic acid (PFDoS)	0.1050 0.0889	0.0814 0.0843	0.0881	0.0874	0.0943	AveID		0.0899				8.6		50.0			
Perfluorotridecanoic acid (PFTriA)	0.6473 0.7603	0.6306 0.6443	0.7575	0.7942	0.7635	AveID		0.7140				9.8		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.1687 0.1788	0.1671 0.1670	0.1531	0.1696	0.1852	AveID		0.1699				6.0		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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 382530

SDG No.: 70132491

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

Calibration Start Date: 06/02/2020 15:24 Calibration End Date: 06/02/2020 16:30 Calibration ID: 50293

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.5751 0.8482	1.3121 0.8387	1.0013	0.9507	0.8898	L2ID	0.0180	0.8905							0.9970		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.4793 0.5537	0.5411 0.5676	0.5913	0.6252	0.6187	AveID		0.5681				8.9		50.0			
13C4 PFBA	1.1931 1.1964	1.1985 1.2897	1.1560	1.1961	1.2079	Ave		1.2054				3.4		50.0			
13C5 PFPeA	0.4235 0.4491	0.4175 0.4715	0.4145	0.4330	0.4371	Ave		0.4352				4.6		50.0			
13C3 PFBS	0.5112 0.6265	0.5015 0.6837	0.5199	0.5221	0.5539	Ave		0.5598				12.3		50.0			
M2-4:2 FTS	0.1193 0.1158	0.1270 0.1154	0.1062	0.1219	0.1181	Ave		0.1177				5.5		50.0			
13C2 PFHxA	0.8623 0.8561	0.8683 0.8692	0.8573	0.8641	0.8684	Ave		0.8637				0.6		50.0			
13C3 HFPO-DA	0.5306 0.5656	0.5379 0.5978	0.5286	0.5427	0.5615	Ave		0.5521				4.5		50.0			
13C4 PFHpA	0.7777 0.7722	0.7931 0.7778	0.7542	0.8184	0.7547	Ave		0.7783				2.9		50.0			
18O2 PFHxS	0.7403 0.7381	0.7391 0.7542	0.7182	0.7385	0.7351	Ave		0.7377				1.4		50.0			
M2-6:2 FTS	0.1027 0.0905	0.1063 0.0912	0.1000	0.0997	0.1008	Ave		0.0988				5.9		50.0			
13C4 PFOA	0.9389 0.9372	0.9694 0.9562	0.9520	0.9552	0.9718	Ave		0.9544				1.4		50.0			
13C4 PFOS	0.9333 0.9500	0.9124 0.9990	0.9172	0.9546	0.9245	Ave		0.9416				3.2		50.0			
13C5 PFNA	0.9221 0.9570	0.9481 0.9640	0.9093	0.9307	0.9355	Ave		0.9381				2.1		50.0			
13C8 FOSA	0.3659 0.3680	0.3924 0.3607	0.3761	0.3881	0.3626	Ave		0.3734				3.4		50.0			
13C2 PFDA	1.0951 1.0698	1.1324 1.0542	1.1037	1.1260	1.1027	Ave		1.0977				2.6		50.0			
M2-8:2 FTS	0.1193 0.1138	0.1196 0.1155	0.1154	0.1245	0.1150	Ave		0.1176				3.2		50.0			
d3-NMeFOSAA	0.4311 0.4333	0.4281 0.4745	0.4278	0.4285	0.4370	Ave		0.4372				3.8		50.0			
13C2 PFUnA	0.9691 0.9591	0.9430 0.9557	0.9335	0.9900	0.9673	Ave		0.9597				1.9		50.0			
d5-NEtFOSAA	0.3386 0.3259	0.3538 0.3071	0.3197	0.3476	0.3309	Ave		0.3319				4.9		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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 382530

SDG No.: 70132491

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

Calibration Start Date: 06/02/2020 15:24 Calibration End Date: 06/02/2020 16:30 Calibration ID: 50293

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
d7-N-MeFOSE-M	0.1088 0.1090	0.1063 0.1119	0.1075	0.1107	0.1111	Ave		0.1093				1.9		50.0			
d-N-MeFOSA-M	0.2055 0.2446	0.2138 0.2514	0.2041	0.2117	0.2165	Ave		0.2211				8.6		50.0			
13C2 PFDoA	0.9387 0.8938	0.9253 0.9305	0.8692	0.9235	0.8847	Ave		0.9094				2.9		50.0			
d9-N-EtFOSE-M	0.1095 0.1104	0.1110 0.1178	0.1065	0.1082	0.1079	Ave		0.1102				3.3		50.0			
d-N-EtFOSA-M	0.1583 0.1823	0.1516 0.1963	0.1535	0.1579	0.1655	Ave		0.1665				10.0		50.0			
13C2 PFTeDA	0.9122 0.8651	0.8385 0.9310	0.8736	0.9384	0.8261	Ave		0.8835				5.0		50.0			
13C2 PFHxDA	0.8399 0.9239	0.8433 0.9164	0.7701	0.8723	0.8284	Ave		0.8563				6.2		50.0			
13C8 PFOA	0.9422 0.9161	0.9263 0.9175	0.9463	0.9454	0.9506	Ave		0.9349				1.6		50.0			
13C8 PFOS	0.2151 0.2257	0.2184 0.2300	0.2122	0.2110	0.2155	Ave		0.2183				3.2		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: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 382530

SDG No.: 70132491

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

Calibration Start Date: 06/02/2020 15:24 Calibration End Date: 06/02/2020 16:30 Calibration ID: 50293

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-382530/2	2020.06.02_A9_PFC_ICAL_006.d
Level 2	IC 320-382530/3	2020.06.02_A9_PFC_ICAL_007.d
Level 3	IC 320-382530/4	2020.06.02_A9_PFC_ICAL_008.d
Level 4	IC 320-382530/5	2020.06.02_A9_PFC_ICAL_009.d
Level 5	IC 320-382530/6	2020.06.02_A9_PFC_ICAL_010.d
Level 6	IC 320-382530/7	2020.06.02_A9_PFC_ICAL_011.d
Level 7	IC 320-382530/9	2020.06.02_A9_PFC_ICAL_013.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	21570 4799188	43085 8889541	236032	939087	2300548	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	21191 3568498	36384 6723391	174386	666282	1699502	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	20314 4817084	35293 9011009	209782	828737	2164012	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	12415 2639400	21997 4546283	128993	530651	1267018	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	39508 6992911	67912 12856082	351851	1454881	3517435	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	18350 4557205	38411 8062304	214610	843964	2205918	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	12083 2662980	23819 5214005	121913	524165	1254498	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	39903 8040953	82859 13925185	415119	1676601	4092420	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	36168 6380770	62448 11458601	304284	1209375	2993974	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)		AveID	61141 13524285	135413 23048986	715999	2938571	6706732	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	8767 1586330	15798 2909034	87894	335133	848431	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	33406 7901676	72933 13624145	378675	1554833	4118276	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanoic acid (PFOA)		AveID	53956 8718433	103142 14873312	516432	1932205	4552162	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	34830 7984642	74349 14600785	380750	1487385	3911550	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	39727 8406194	77744 14452960	422351	1656293	4158385	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 382530

SDG No.: 70132491

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

Calibration Start Date: 06/02/2020 15:24 Calibration End Date: 06/02/2020 16:30 Calibration ID: 50293

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
F-53B Major		AveID	32618 8769307	75167 15928904	418477	1667168	4090827	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorononanesulfonic acid (PFNS)		AveID	23792 5363500	43254 9358055	248372	1006993	2365772	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorooctanesulfonamide (FOSA)		AveID	47045 9676672	104675 16530721	481550	2001536	4846735	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanoic acid (PFDA)		AveID	38196 8876038	92233 14071704	479598	1910410	4435763	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	10846 1928662	19212 3363840	101000	407512	975603	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
NMeFOSAA		AveID	16668 3145752	30077 6204744	159009	667419	1624665	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	26418 6348612	52526 10958518	286267	1216711	3096236	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluoroundecanoic acid (PFUnA)		AveID	26654 6013567	60424 10611802	303842	1264218	2912081	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NEtFOSAA		AveID	13177 2346536	22764 4220711	118870	476550	1143757	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	53393 10669668	106368 19125030	610719	2284452	5652357	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
NMeFOSE		AveID	5508 1280692	11138 2443750	60369	261302	620271	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NMeFOSA		AveID	7557 1612923	14852 3148948	67763	326266	777579	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)		AveID	36009 7405311	80598 12395346	403947	1607479	3817075	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	7757 1779363	18603 3197439	91075	399649	843540	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
NEtFOSE		AveID	6397 1362226	10501 2606115	66639	255036	667928	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NEtFOSA		AveID	7994 1795264	14982 3510456	83429	332692	873214	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanesulfonic acid (PFDoS)		AveID	3788 662142	5561 1217252	32707	126946	326011	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	24270 5503711	45124 8951554	275304	1152682	2607937	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	6145 1252893	10836 2320667	55916	250167	590595	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	52842 6346360	85571 11474706	322403	1303354	2846040	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	16079 4143335	35290 7766763	190402	857070	1978869	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 382530

SDG No.: 70132491

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

Calibration Start Date: 06/02/2020 15:24 Calibration End Date: 06/02/2020 16:30 Calibration ID: 50293

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFBA	13PF OA	Ave	4765864 4844871	4634324 4813848	4833826	4699627	4663721	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	1691790 1818753	1614541 1759839	1733086	1701163	1687837	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	1899142 2359391	1803340 2373281	2021862	1907865	1988907	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	444934 438111	458517 402262	414577	447526	425838	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PF OA	Ave	3444470 3466680	3357554 3244599	3584703	3395138	3352977	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	2119564 2290336	2079961 2231326	2210433	2132262	2168113	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	3106354 3127177	3066604 2903425	3153780	3215584	2914017	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	2797578 2827430	2703567 2663312	2841080	2745058	2685135	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	389698 348277	390663 323533	397093	372308	369835	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	3750475 3795149	3748340 3569302	3980648	3753256	3752123	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	3563836 3677897	3372649 3564861	3666320	3585681	3412696	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	3683205 3875246	3666183 3598223	3802334	3656960	3612126	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	1461638 1490024	1517483 1346326	1572619	1524735	1399977	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	4374300 4332070	4378859 3934974	4615017	4424244	4257579	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	456694 441511	443012 412924	462117	468684	425414	2.40 2.40	2.40 2.40	2.40	2.40	2.40
d3-NMeFOSAA	13PF OA	Ave	1721825 1754610	1655186 1771047	1789026	1683461	1687498	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	3871123 3883747	3646412 3567256	3903434	3889729	3734757	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1352493 1319642	1368139 1146353	1336920	1365696	1277571	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d7-N-MeFOSE-M	13PF OA	Ave	2172874 2207887	2056110 2088901	2246515	2175728	2144837	12.5 12.5	12.5 12.5	12.5	12.5	12.5
d-N-MeFOSA-M	13PF OA	Ave	820737 990419	826558 938220	853622	831648	835843	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	3749670 3619207	3577959 3473179	3634540	3628363	3415752	2.50 2.50	2.50 2.50	2.50	2.50	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1 Analy Batch No.: 382530

SDG No.: 70132491

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

Calibration Start Date: 06/02/2020 15:24 Calibration End Date: 06/02/2020 16:30 Calibration ID: 50293

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
d9-N-EtFOSE-M	13PF OA	Ave	2186112 2235373	2146993 2197723	2227362	2125355	2082215	12.5 12.5	12.5 12.5	12.5	12.5	12.5
d-N-EtFOSA-M	13PF OA	Ave	632342 738405	586358 732749	641863	620496	639203	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	3643583 3503025	3242384 3474918	3653011	3686931	3189603	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	3354847 3741215	3260823 3420581	3220004	3427193	3198367	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOA	13PF OA	Ave	3684517 3631745	3506463 3352680	3873988	3636767	3593159	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C8 PFOS	13PF OA	Ave	821233 873870	807526 820601	848180	792447	795594	2.39 2.39	2.39 2.39	2.39	2.39	2.39

Curve Type Legend:

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

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 02-Jun-2020 15:24:36 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD1 (21)
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 02-Jun-2020 20:32:23 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1042

First Level Reviewer: adamst Date: 02-Jun-2020 19:39:10
Ratio Calibration: Average of Initial Calibration

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	1.888	1.890	-0.002	0.566	4765864	2.47		99.0	7391	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.893	1.893	0.0	1.003	21570	0.0236		94.4	22.2	
D 4 13C5 PFPeA										
267.90 > 223.00	2.190	2.193	-0.003	0.656	1691790	2.43		97.3	4994	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.198	2.196	0.002	1.004	21191	0.0300		120	5.0	
D 6 13C3 PFBS										
301.90 > 80.00	2.224	2.224	0.0	0.666	1899142	2.12		91.3	6932	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.224	2.224	0.0	1.000	20314	0.0229	Target=2.39	104	18.5	
298.90 > 99.00	2.224	2.224	0.0	1.000	7391		2.75(1.20-3.59)	104	20.2	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.515	2.511	0.004	0.753	444934	2.37		101	2407	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.515	2.511	0.004	1.000	12415	0.0227		97.3	324	
11 Perfluorohexanoic acid										M
313.00 > 269.00	2.547	2.549	-0.002	1.000	39508	0.0277	Target=15.64	111	17.4	
313.00 > 119.00	2.557	2.549	0.008	1.004	1783		22.16(7.82-23.46)	111	7.2	M
D 10 13C2 PFHxA										
315.00 > 270.00	2.547	2.549	-0.002	0.763	3444470	2.50		99.8	6295	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.568	2.566	0.002	1.155	18350	0.0223	Target=1.75	95.0	139	
349.00 > 99.00	2.568	2.566	0.002	1.155	10532		1.74(0.88-2.63)	95.0	102	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.661	2.664	-0.004	0.797	2119564	2.40		96.1	6333	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.661	2.666	-0.006	1.000	12083	0.0246		98.5	179	
D 15 13C4 PFHpA										
367.00 > 322.00	2.935	2.935	0.0	0.879	3106354	2.50		99.9	5558	
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.940	2.937	0.003	1.002	39903	0.0246	Target=4.39	98.3	15.9	
363.00 > 169.00	2.940	2.937	0.003	1.002	8064		4.95(2.20-6.59)	98.3	28.9	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.940	2.943	-0.003	1.000	36168	0.0259	Target=3.04	114	141	M
399.00 > 99.00	2.946	2.943	0.003	1.002	12336		2.93(1.52-4.56)	114	54.0	M
D 17 18O2 PFHxS										
403.00 > 84.00	2.940	2.941	-0.001	0.881	2797578	2.37		100	3210	
19 DONA										
377.00 > 251.00	2.987	2.986	0.001	0.805	61141	0.0215	Target=2.17	91.4	425	
377.00 > 85.00	2.987	2.986	0.001	0.805	27158		2.25(1.09-3.26)	91.4	179	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.317	3.318	-0.001	0.994	389698	2.47		104	2763	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.324	3.321	0.003	1.002	8767	0.0240		101	39.1	
$ 21 13C8 PFOA										
421.00 > 376.00	3.331	3.333	-0.002	0.998	3684517	2.47		101	7669	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.331	3.334	-0.003	0.897	33406	0.0212	Target=3.82	89.0	202	
449.00 > 99.00	3.331	3.334	-0.003	0.897	8377		3.99(1.91-5.72)	89.0	66.0	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.338	3.339	-0.001	1.000	53956	0.0286	Target=2.82	114	6.7	M
413.00 > 169.00	3.338	3.339	-0.001	1.000	19741		2.73(1.41-4.23)	114	73.1	
D 26 13C4 PFOA										
417.00 > 372.00	3.338	3.339	-0.001	1.000	3750475	2.46		98.4	7222	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.339	-0.001		3994462	2.50			6814	
$ 27 13C8 PFOS										
507.00 > 99.00	3.712	3.709	0.003	1.112	821233	2.35		98.5	2922	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.712	3.715	-0.002	1.000	34830	0.0214	Target=4.25	92.3	109	M
499.00 > 99.00	3.712	3.715	-0.002	1.000	9234		3.77(2.13-6.38)	92.3	31.2	M
D 31 13C4 PFOS										
503.00 > 80.00	3.712	3.714	-0.002	1.112	3563836	2.37		99.1	5599	
30 Perfluorononanoic acid										
463.00 > 419.00	3.727	3.728	-0.001	1.000	39727	0.0248	Target=5.46	99.1	9.7	
463.00 > 169.00	3.727	3.728	-0.001	1.000	7295		5.45(2.73-8.19)	99.1	43.7	
D 29 13C5 PFNA										
468.00 > 423.00	3.727	3.728	-0.001	1.117	3683205	2.46		98.3	4635	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.918	3.920	-0.002	1.056	32618	0.0190		81.7	163	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.065	4.061	0.004	1.095	23792	0.0235	Target=4.97	98.0	132	
549.00 > 99.00	4.065	4.061	0.004	1.095	4015		5.93(2.48-7.45)	98.0	37.6	
D 36 13C8 FOSA										
506.00 > 78.00	4.083	4.087	-0.004	1.223	1461638	2.45		98.0	3554	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.083	4.087	-0.004	1.000	47045	0.0247		98.9	188	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.092	4.088	0.004	1.000	38196	0.0218	Target=14.66	87.3	16.2	
513.00 > 169.00	4.092	4.088	0.004	1.000	3351		11.40(7.33-21.99)	87.3	39.5	
D 33 13C2 PFDA										
515.00 > 470.00	4.092	4.088	0.004	1.226	4374300	2.49		99.8	7387	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.092	4.091	0.001	1.000	10846	0.0258		108	86.2	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.092	4.091	0.001	1.226	456694	2.43		101	1442	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.253	4.252	0.001	1.274	1721825	2.46		98.6	2578	
40 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.253	4.257	-0.004	1.000	16668	0.0261		104	4.9	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.384	4.383	0.001	1.181	26418	0.0220	Target=4.49	91.2	57.7	
599.00 > 99.00	4.375	4.383	-0.008	1.179	6302		4.19(2.25-6.74)	91.2	32.2	
D 46 13C2 PFUnA										
565.00 > 520.00	4.409	4.407	0.002	1.321	3871123	2.52		101	7991	
43 Perfluoroundecanoic acid										M
563.00 > 519.00	4.401	4.407	-0.006	0.998	26654	0.0223	Target=10.82	89.2	9.2	M
563.00 > 169.00	4.401	4.407	-0.006	0.998	3552		7.50(5.41-16.23)	89.2	36.3	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.409	4.413	-0.004	1.321	1352493	2.55		102	1624	
44 N-ethylperfluorooctanesulfonamid										M
584.00 > 419.00	4.427	4.423	0.004	1.004	13177	0.0272		109	74.1	M
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.547	4.543	0.004	1.225	53393	0.0229		97.3	258	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.547	4.549	-0.002	1.362	2172874	12.4		99.5	5066	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.564	4.560	0.004	1.004	5508	0.0226		90.3	31.2	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.564	4.568	-0.004	1.367	820737	2.32		92.9	213	
50 NMeFOSA										
512.00 > 169.00	4.573	4.573	0.0	1.002	7557	0.0261		104	85.8	
D 56 13C2 PFDoA										
615.00 > 570.00	4.694	4.692	0.002	1.406	3749670	2.58		103	7724	
52 Perfluorododecanoic acid										M
613.00 > 569.00	4.694	4.695	-0.001	1.000	36009	0.0229	Target=8.20	91.6	11.4	M
613.00 > 169.00	4.694	4.695	-0.001	1.000	4996		7.21(4.10-12.30)	91.6	31.4	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.704	4.711	-0.007	1.150	7757	0.0207		85.9	85.1	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.723	4.720	0.003	1.415	2186112	12.4		99.3	6476	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.741	4.734	0.007	1.004	6397	0.0249		99.5	34.5	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.748	4.745	0.003		632342	2.38		95.1	1416	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.748	4.752	-0.004	1.000	7994	0.0247		98.7	83.4	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.919	4.923	-0.004	1.325	3788	0.0283	Target=0.67	117	41.0	
699.00 > 99.00	4.919	4.923	-0.004	1.325	4752		0.80(0.33-1.00)	117	42.7	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.952	4.955	-0.003	1.055	24270	0.0227	Target=5.48	90.7	14.3	
663.00 > 169.00	4.952	4.955	-0.003	1.055	4307		5.64(2.74-8.23)	90.7	41.6	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.195	5.193	0.002	1.556	3643583	2.58		103	7333	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.195	5.195	0.0	1.000	6145	0.0248	Target=1.49	99.3	82.4	
713.00 > 219.00	5.195	5.195	0.0	1.000	4027		1.53(0.75-2.24)	99.3	66.8	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.625	5.621	0.004	1.685	3354847	2.45		98.1	4863	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.625	5.621	0.004	1.000	52842	0.0240	Target=5.24	96.0	11.4	
813.00 > 169.00	5.625	5.621	0.004	1.000	10105		5.23(2.62-7.87)	96.0	89.2	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.023	6.021	0.002	1.071	16079	0.0211	Target=4.86	84.4	6.2	
913.00 > 169.00	6.023	6.021	0.002	1.071	3352		4.80(2.43-7.29)	84.4	22.7	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00021 Amount Added: 1.00 Units: mL

Report Date: 02-Jun-2020 20:32:24 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d

Injection Date: 02-Jun-2020 15:24:36 Instrument ID: A9

Lims ID: IC L1 Full

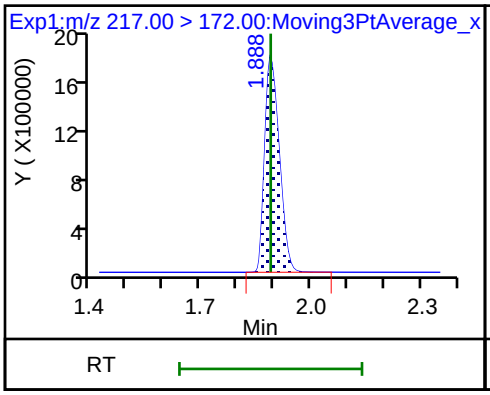
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 1 Worklist Smp#: 2

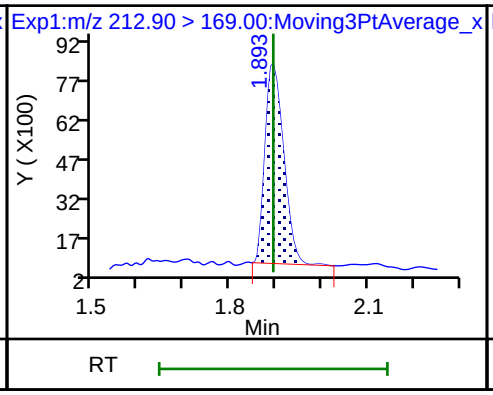
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

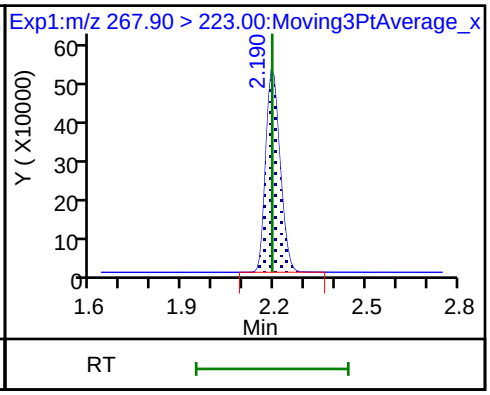
D 1 13C4 PFBA



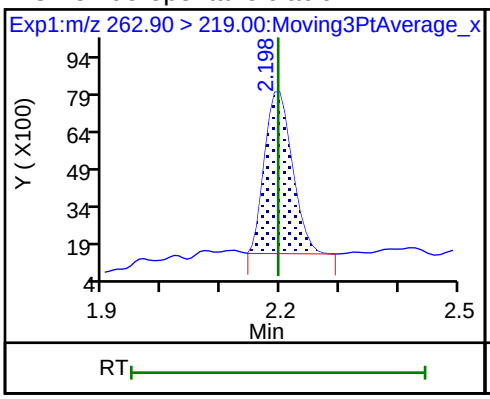
2 Perfluorobutanoic acid



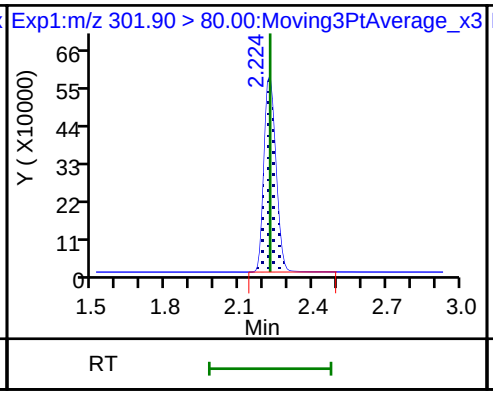
D 4 13C5 PFPeA



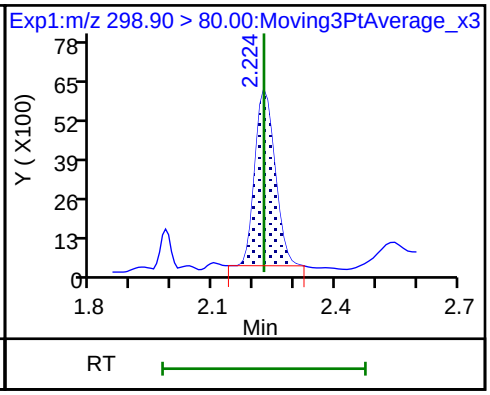
3 Perfluoropentanoic acid



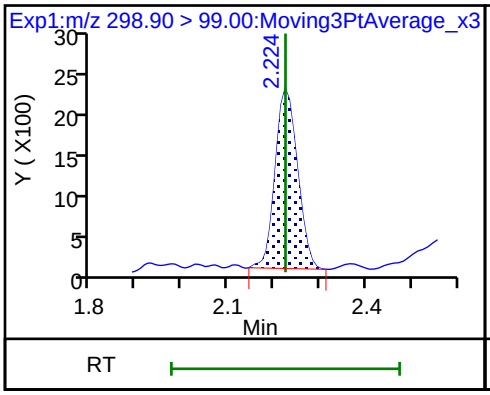
D 6 13C3 PFBS



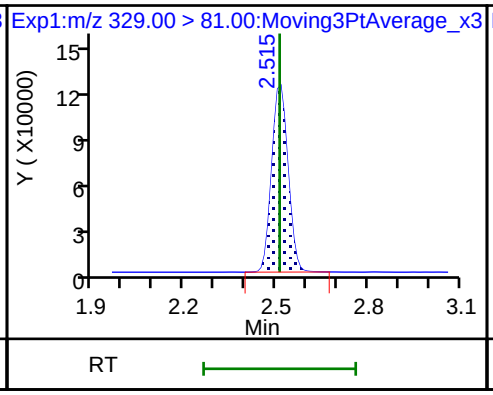
5 Perfluorobutanesulfonic acid



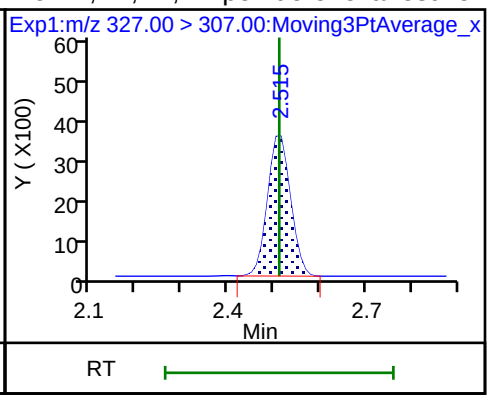
5 Perfluorobutanesulfonic acid



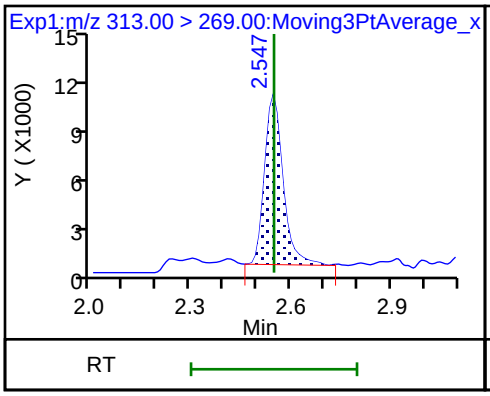
D 8 M2-4:2 FTS



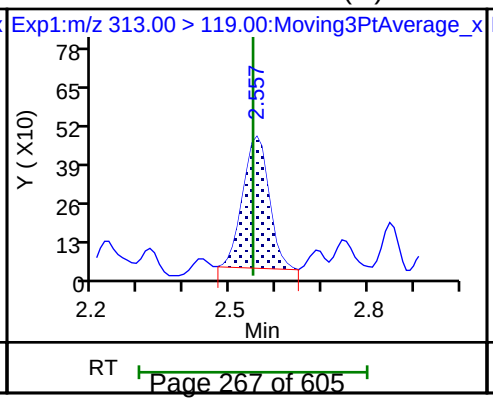
9 1H,1H,2H,2H-perfluorohexanesulfo



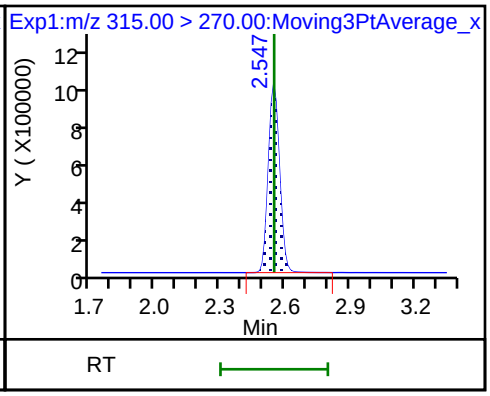
11 Perfluorohexanoic acid



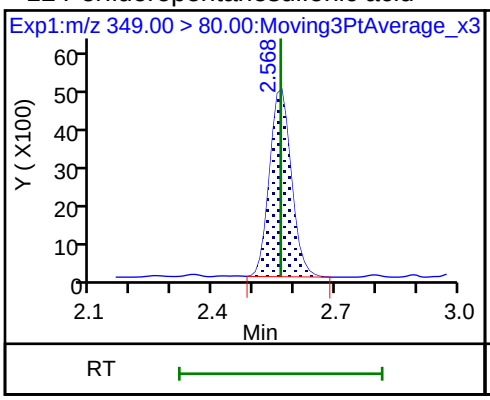
11 Perfluorohexanoic acid (M)



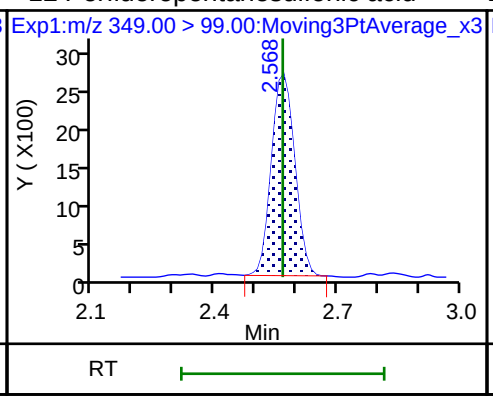
D 10 13C2 PFHxA



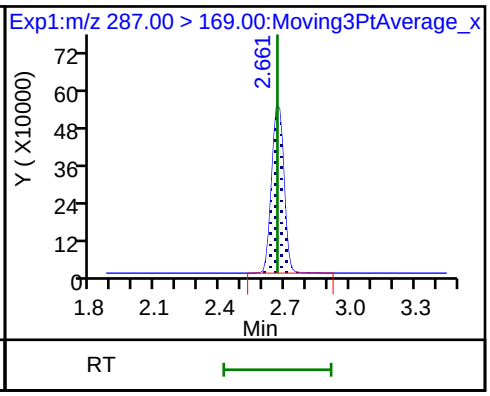
12 Perfluoropentanesulfonic acid



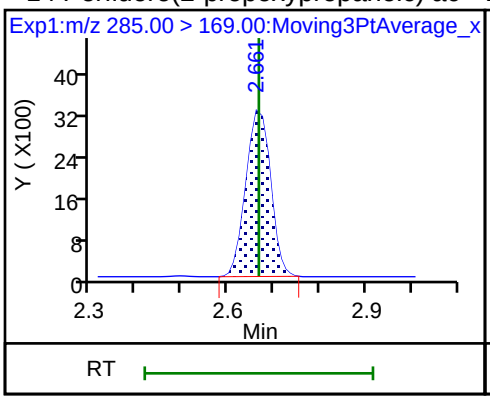
12 Perfluoropentanesulfonic acid



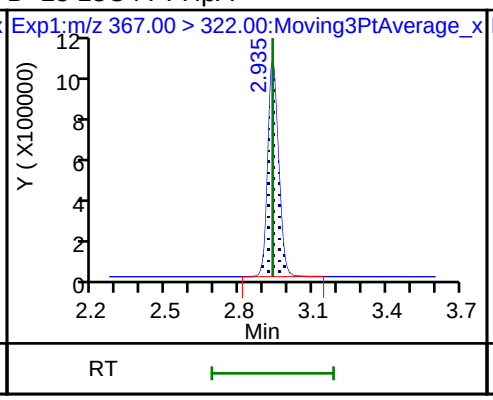
D 13 13C3 HFPO-DA



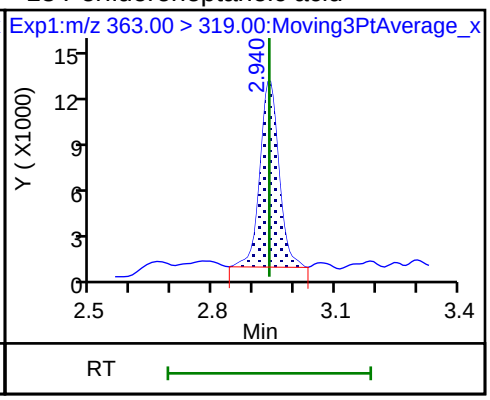
14 Perfluoro(2-propoxypropanoic) ac



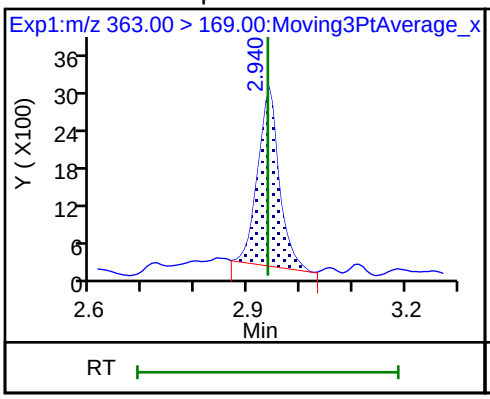
D 15 13C4 PFHpA



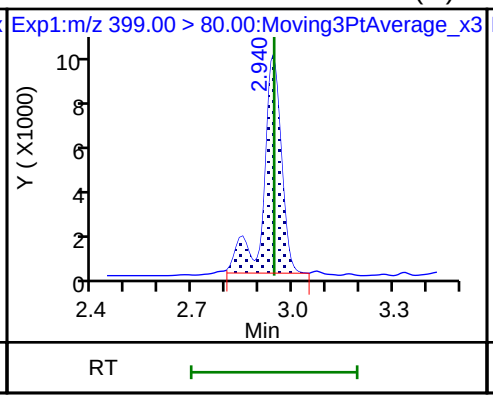
18 Perfluoroheptanoic acid



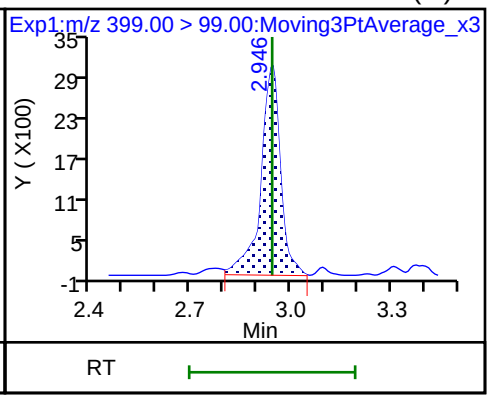
18 Perfluoroheptanoic acid



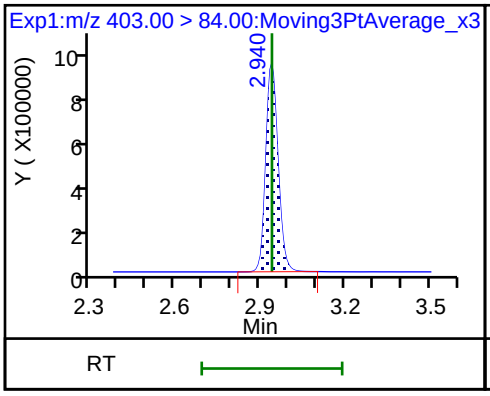
16 Perfluorohexanesulfonic acid (M)



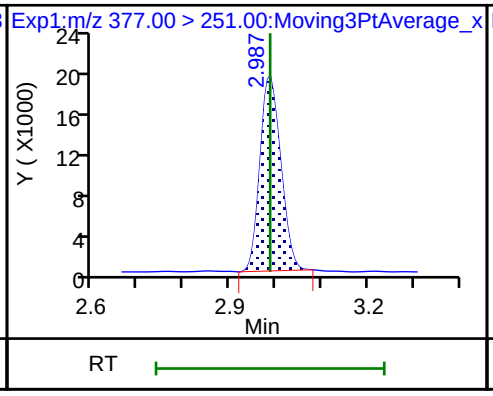
16 Perfluorohexanesulfonic acid (M)



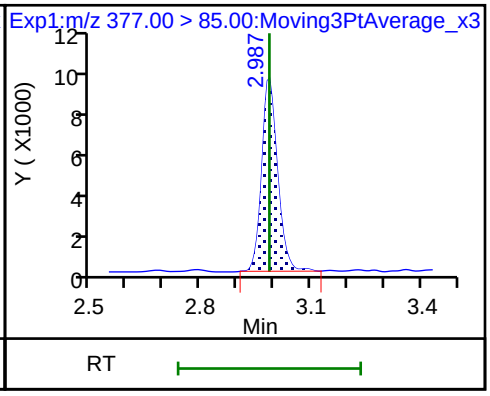
D 17 18O2 PFHxS



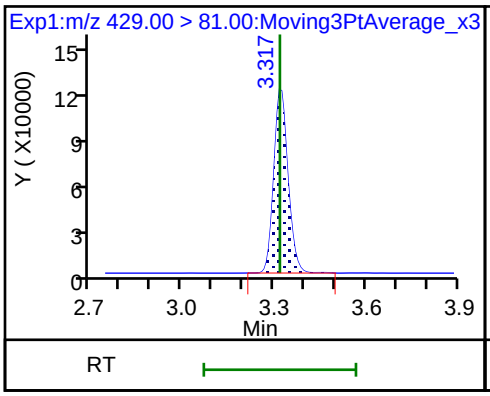
19 DONA



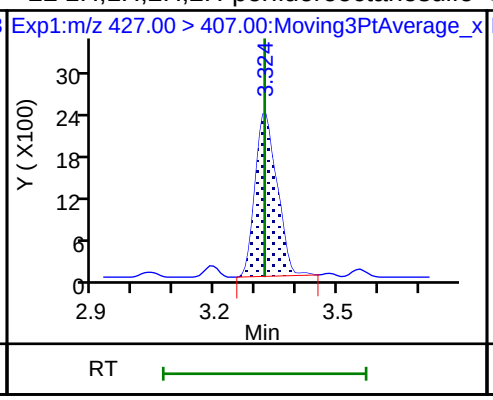
19 DONA



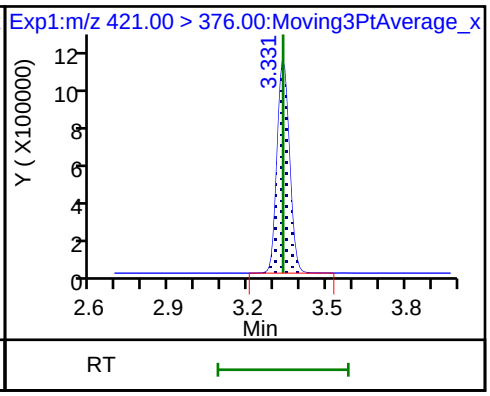
D 20 M2-6:2 FTS



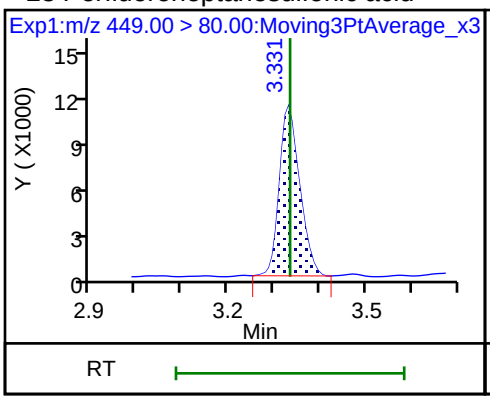
22 1H,1H,2H,2H-perfluorooctanesulfo



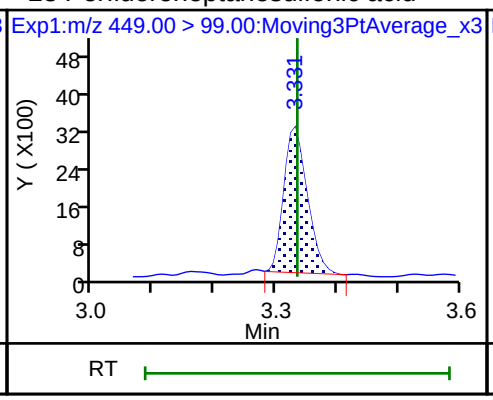
$ 21 13C8 PFOA



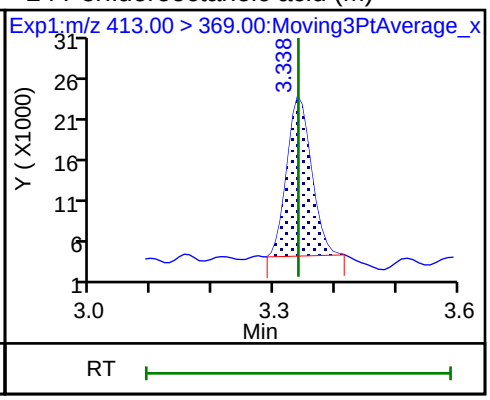
23 Perfluoroheptanesulfonic acid



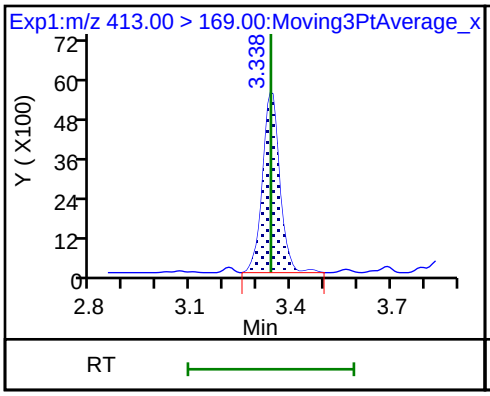
23 Perfluoroheptanesulfonic acid



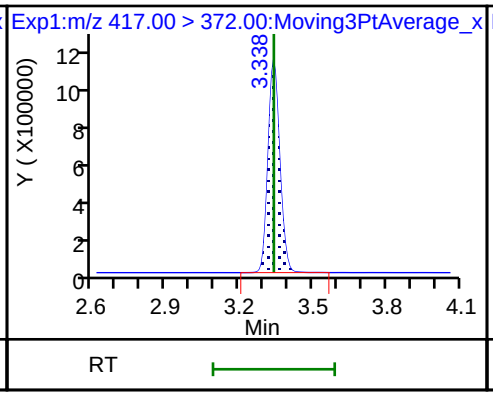
24 Perfluorooctanoic acid (M)



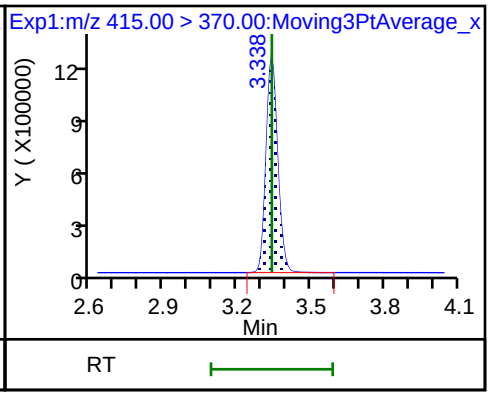
24 Perfluorooctanoic acid



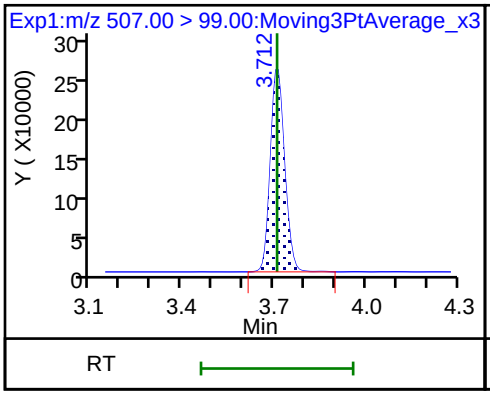
D 26 13C4 PFOA



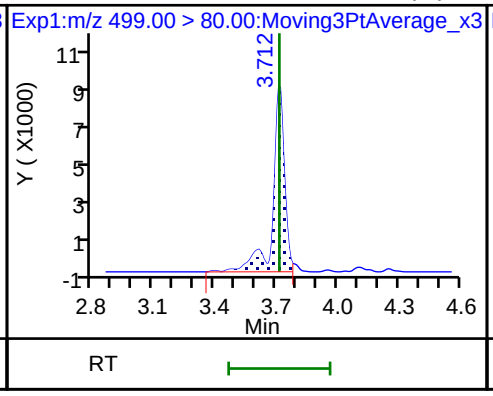
* 25 13C2 PFOA



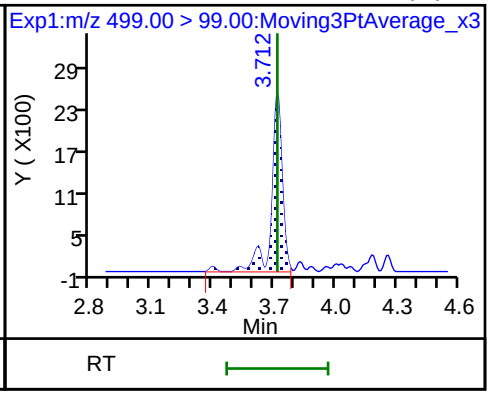
$ 27 13C8 PFOS



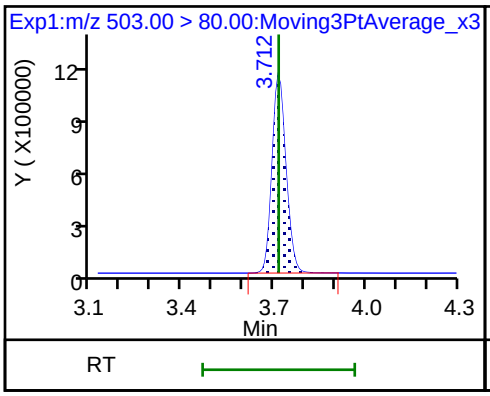
28 Perfluorooctanesulfonic acid (M)



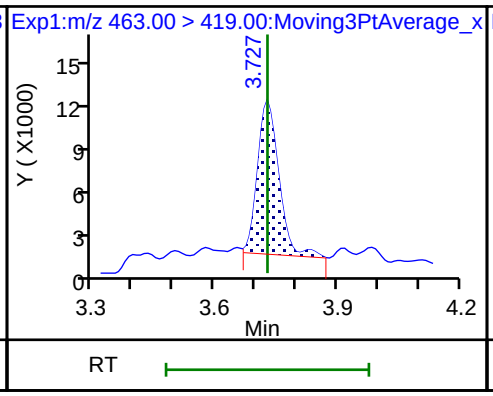
28 Perfluorooctanesulfonic acid (M)



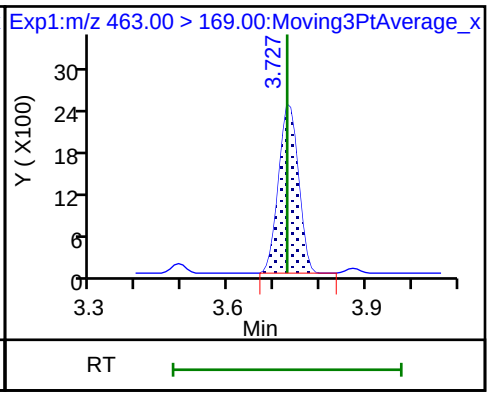
D 31 13C4 PFOS



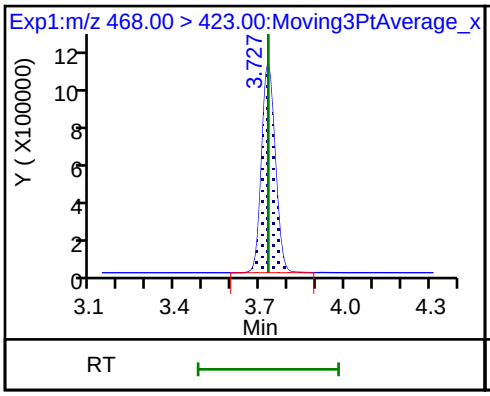
30 Perfluorononanoic acid



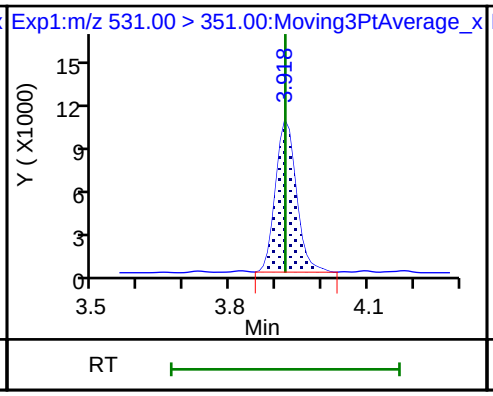
30 Perfluorononanoic acid



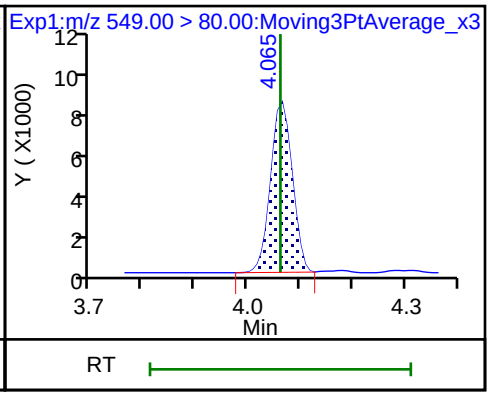
D 29 13C5 PFNA



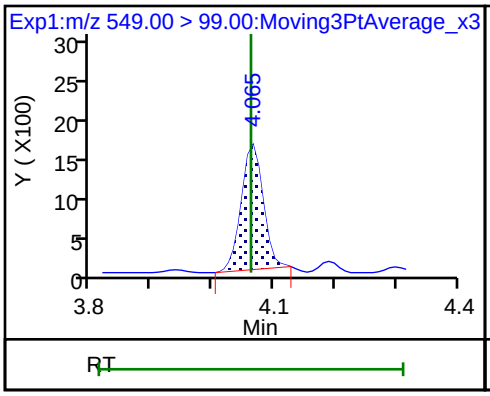
32 9-Chlorohexadecafluoro-3-oxanona



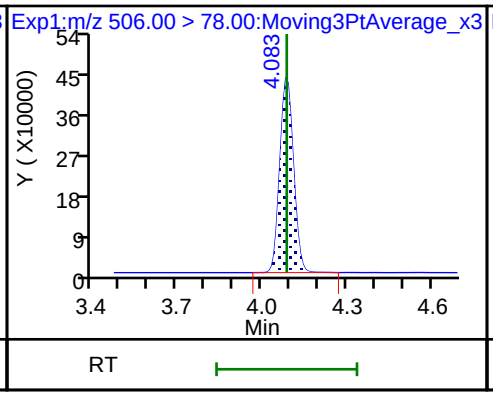
35 Perfluorononanesulfonic acid



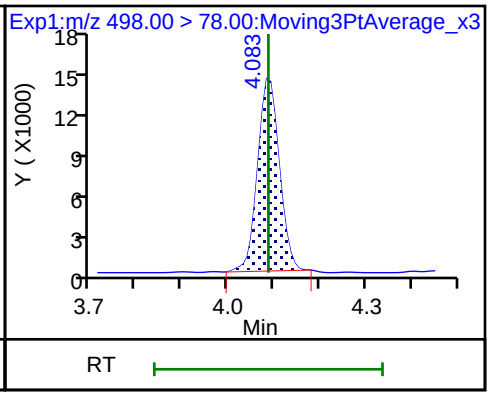
35 Perfluorononanesulfonic acid



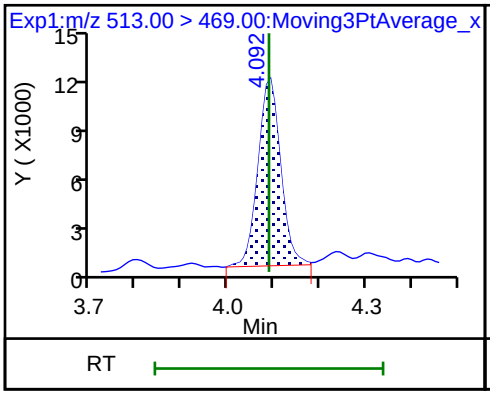
D 36 13C8 FOSA



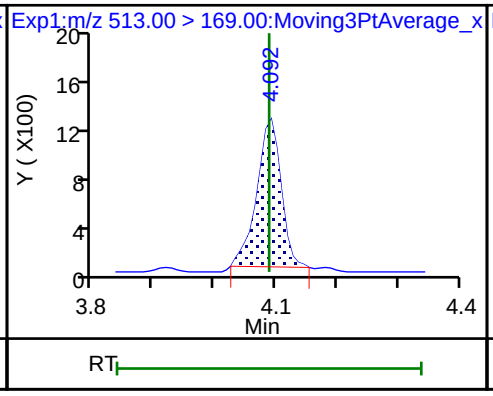
34 Perfluorooctanesulfonamide



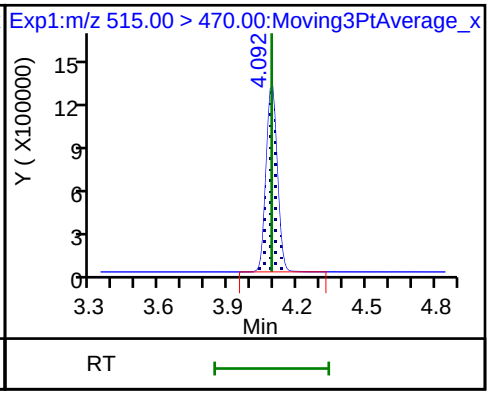
38 Perfluorodecanoic acid



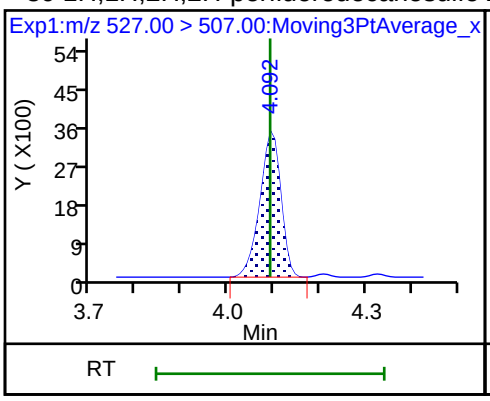
38 Perfluorodecanoic acid



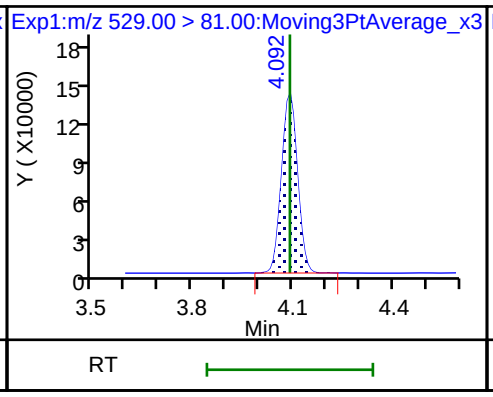
D 33 13C2 PFDA



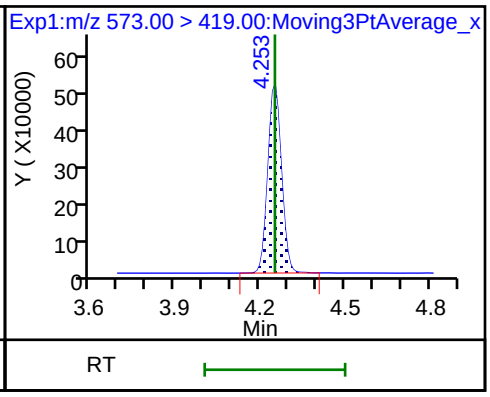
39 1H,1H,2H,2H-perfluorodecanesulfo



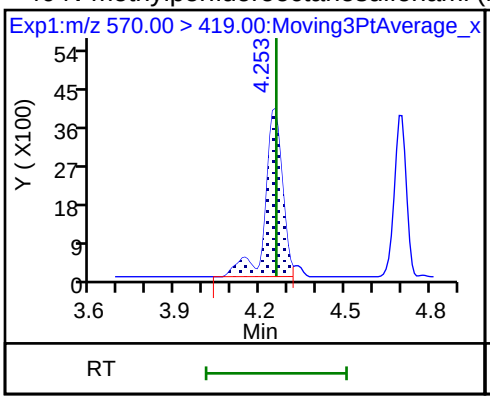
D 37 M2-8:2 FTS



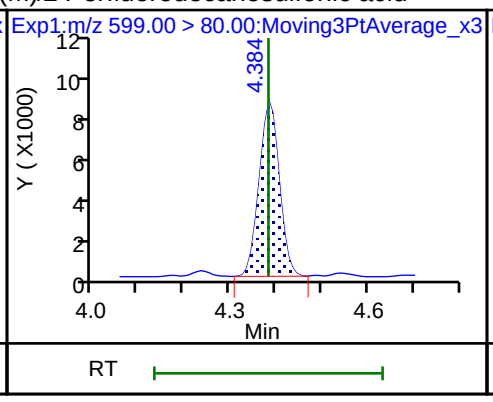
D 41 d3-NMeFOSAA



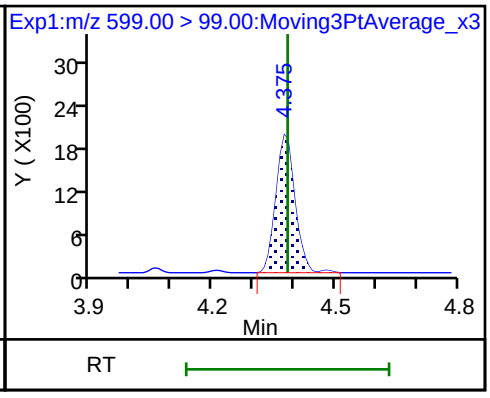
40 N-methylperfluorooctanesulfonami (M)



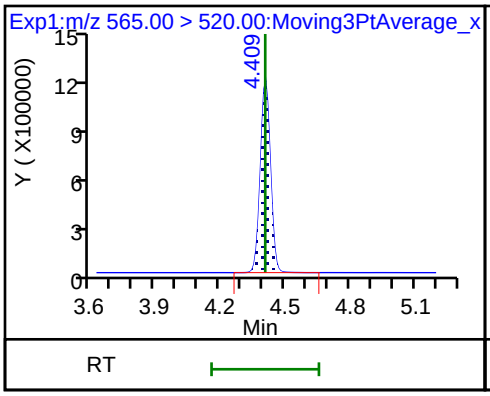
42 Perfluorodecanesulfonic acid



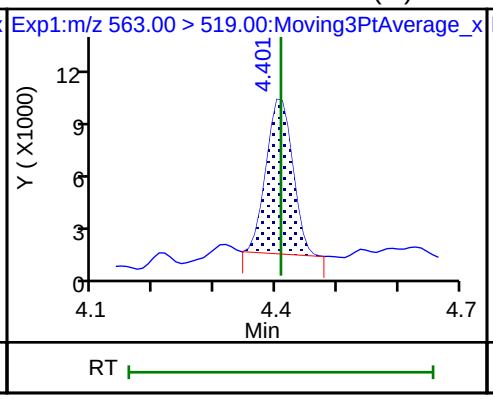
42 Perfluorodecanesulfonic acid



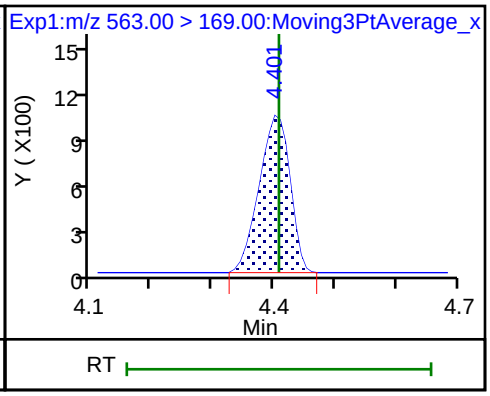
D 46 13C2 PFUnA



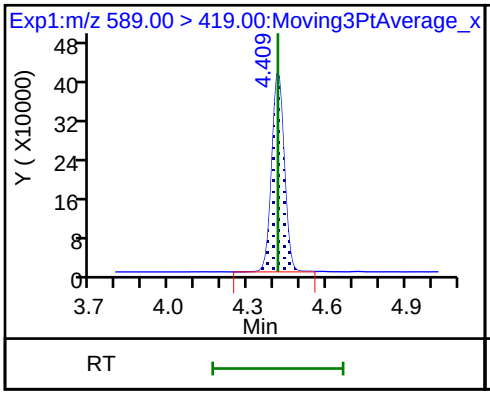
43 Perfluoroundecanoic acid (M)



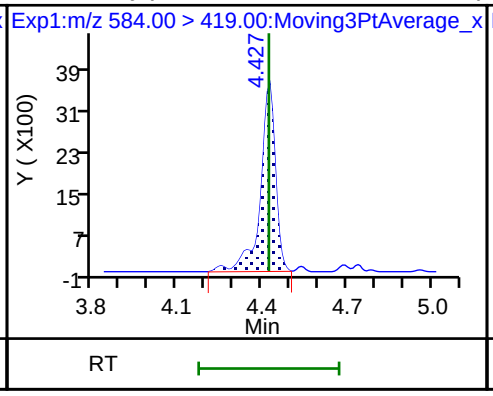
43 Perfluoroundecanoic acid



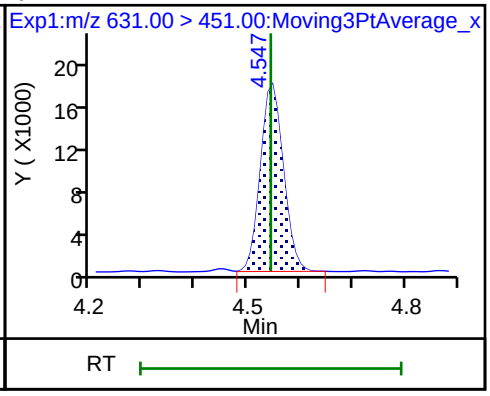
D 45 d5-NEtFOSAA



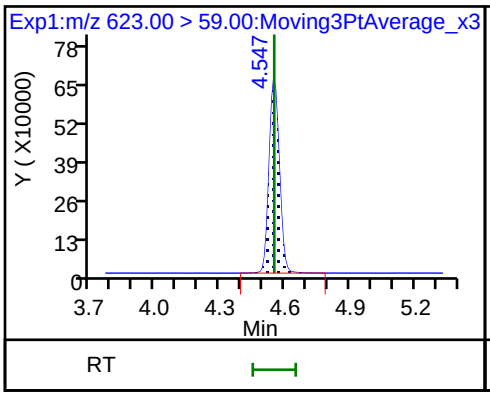
44 N-ethylperfluorooctanesulfonamid (M)



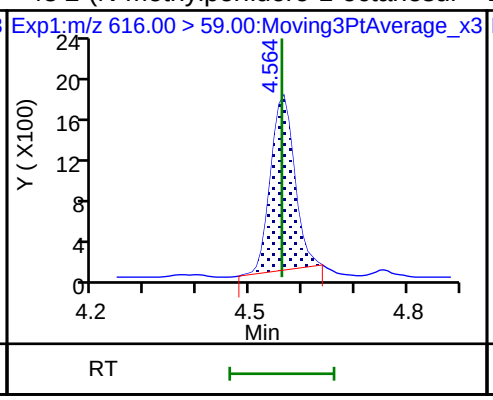
51 11-Chloroeicosafluoro-3-oxaundec



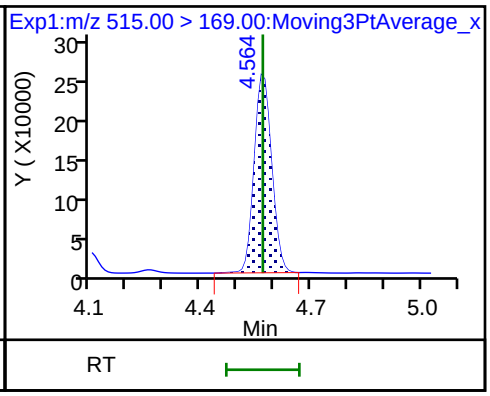
D 47 d7-N-MeFOSE-M



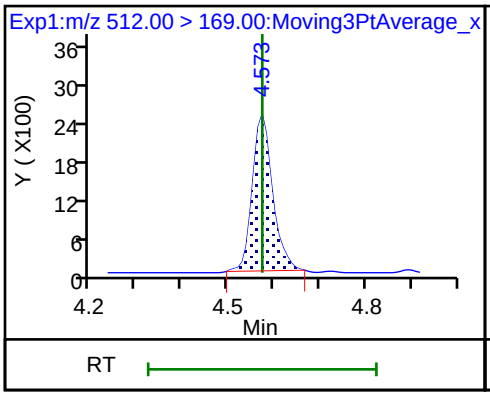
48 2-(N-methylperfluoro-1-octanesul



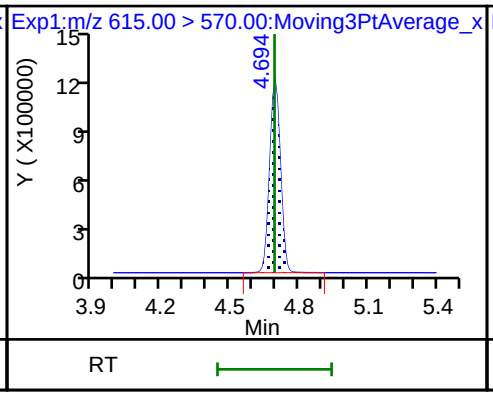
D 49 d-N-MeFOSA-M



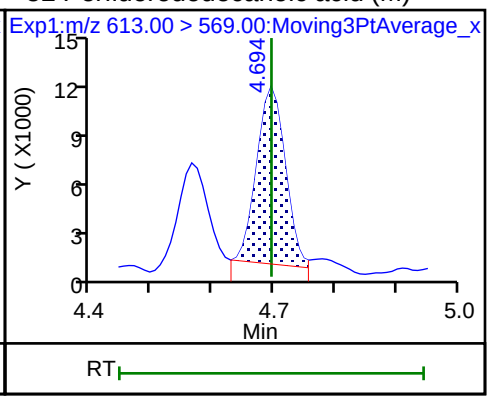
50 NMeFOSA



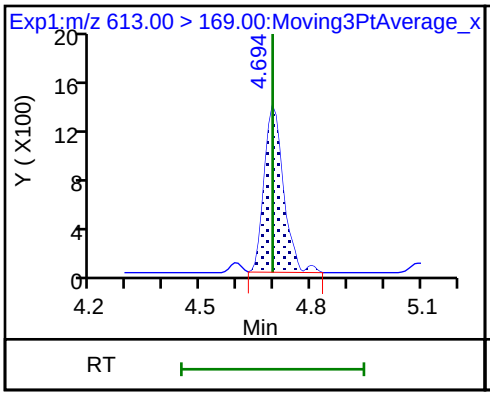
D 56 13C2 PFDoA



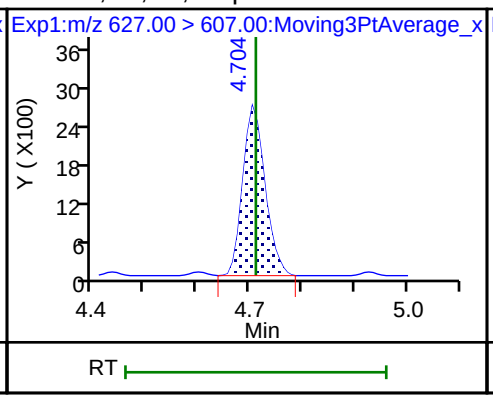
52 Perfluorododecanoic acid (M)



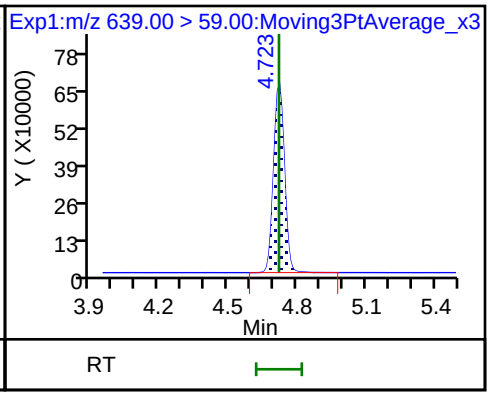
52 Perfluorododecanoic acid



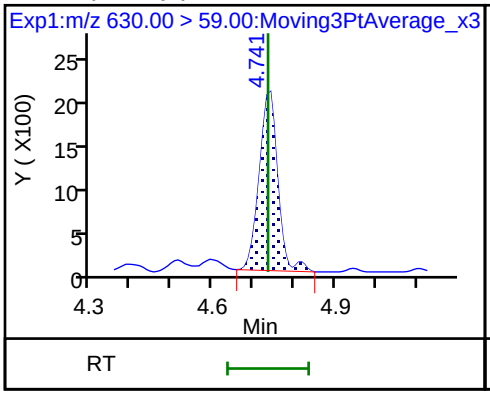
55 1H,1H,2H,2H-perfluorododecanesul



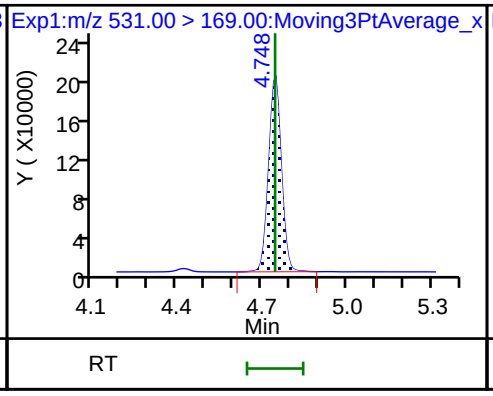
D 53 d9-N-EtFOSE-M



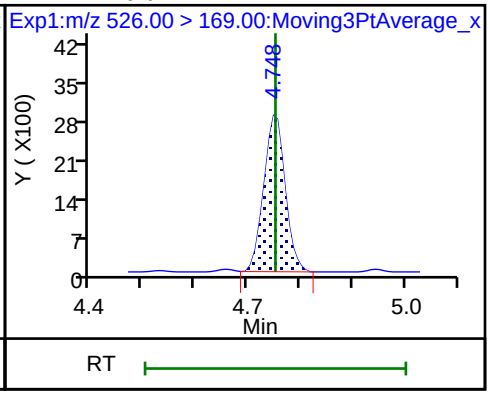
54 2-(N-ethylperfluoro-1-octanesulf



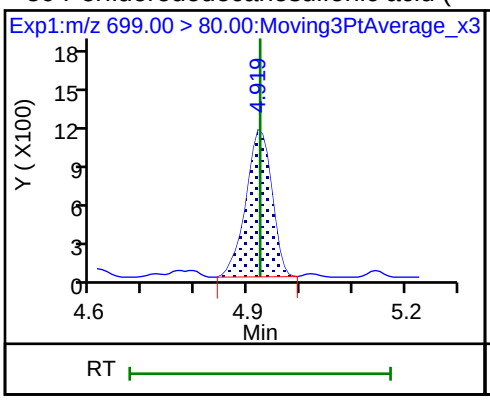
D 58 d-N-EtFOSA-M



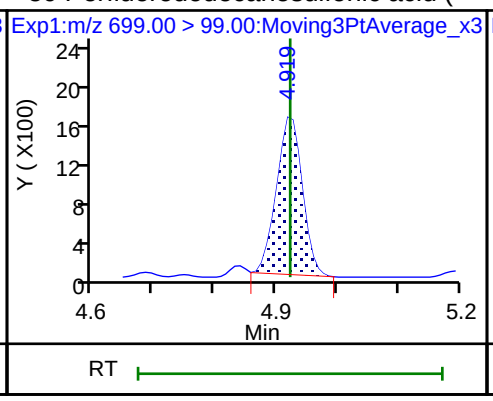
57 N-ethylperfluoro-1-octanesulfona



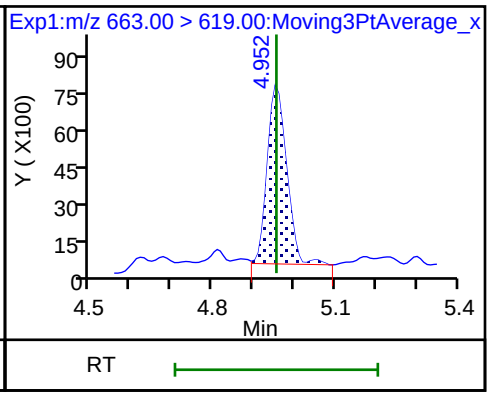
59 Perfluorododecanesulfonic acid (



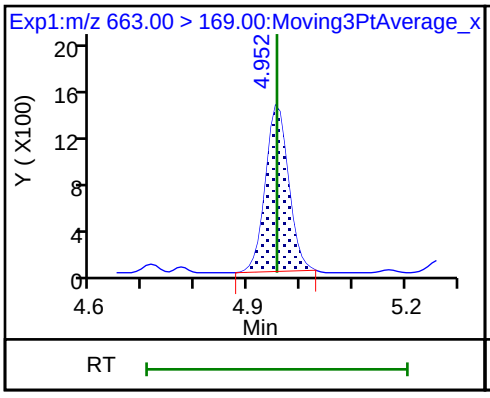
59 Perfluorododecanesulfonic acid (



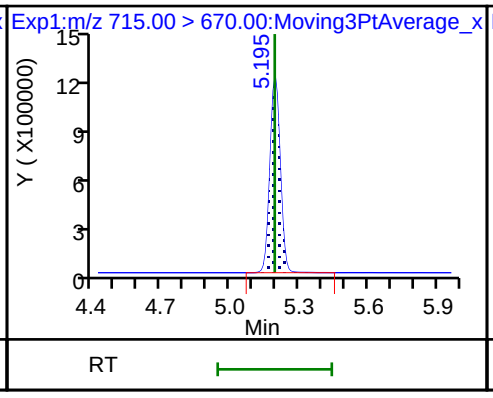
60 Perfluorotridecanoic acid



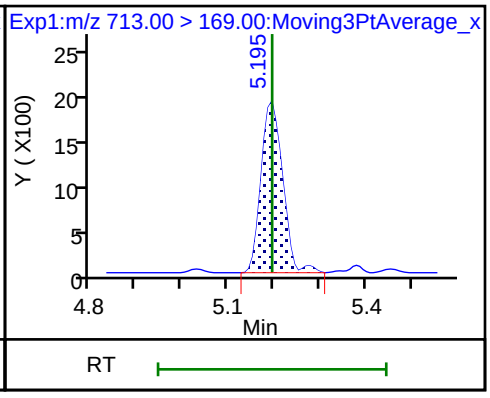
60 Perfluorotridecanoic acid



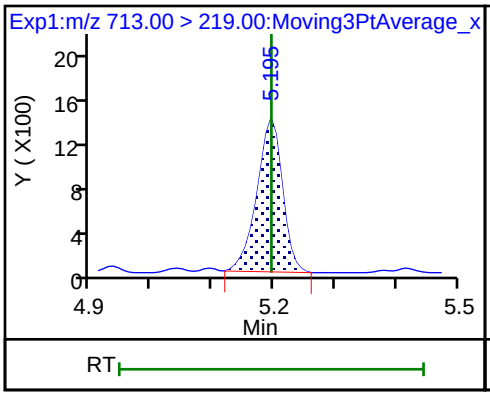
D 62 13C2 PFTeDA



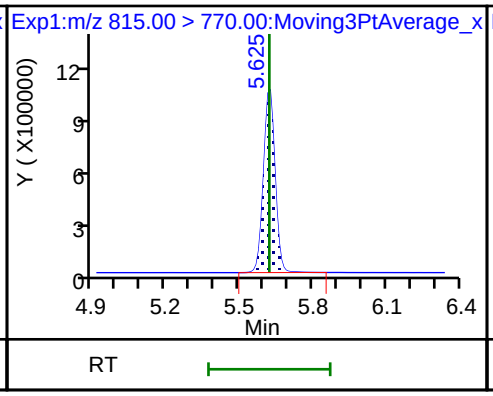
61 Perfluorotetradecanoic acid



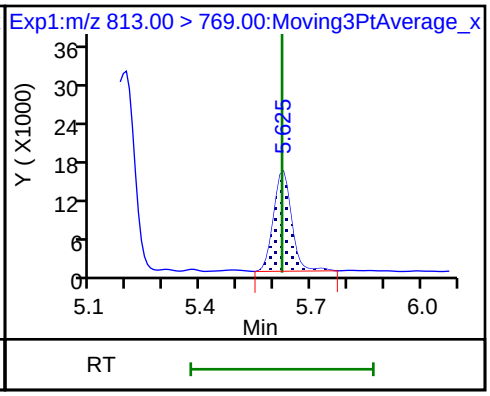
61 Perfluorotetradecanoic acid



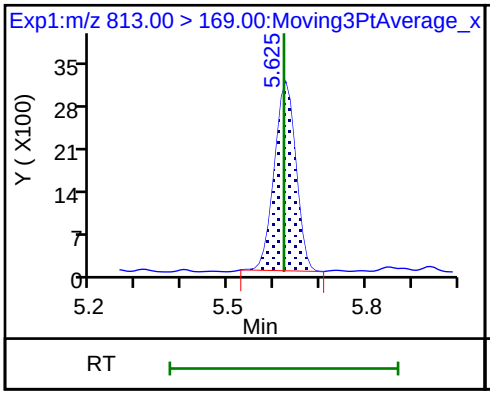
D 63 13C2 PFHxDA



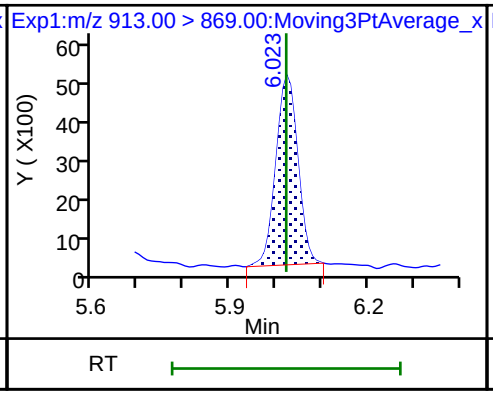
64 Perfluorohexadecanoic acid



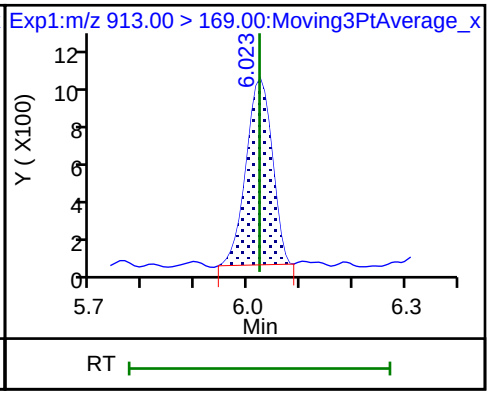
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

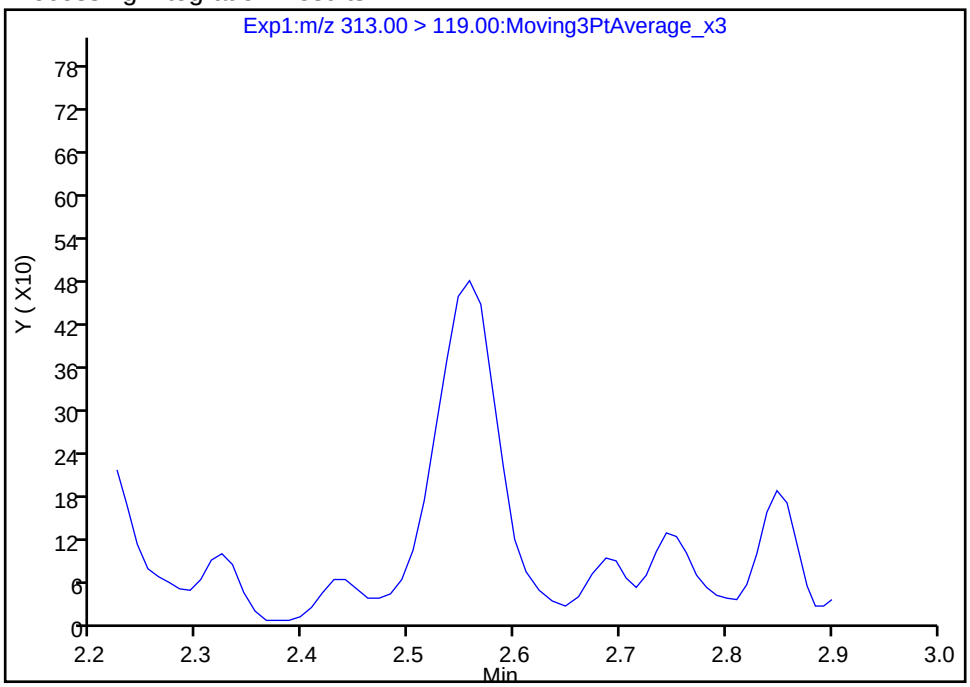
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d				
Injection Date:	02-Jun-2020 15:24:36	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

11 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

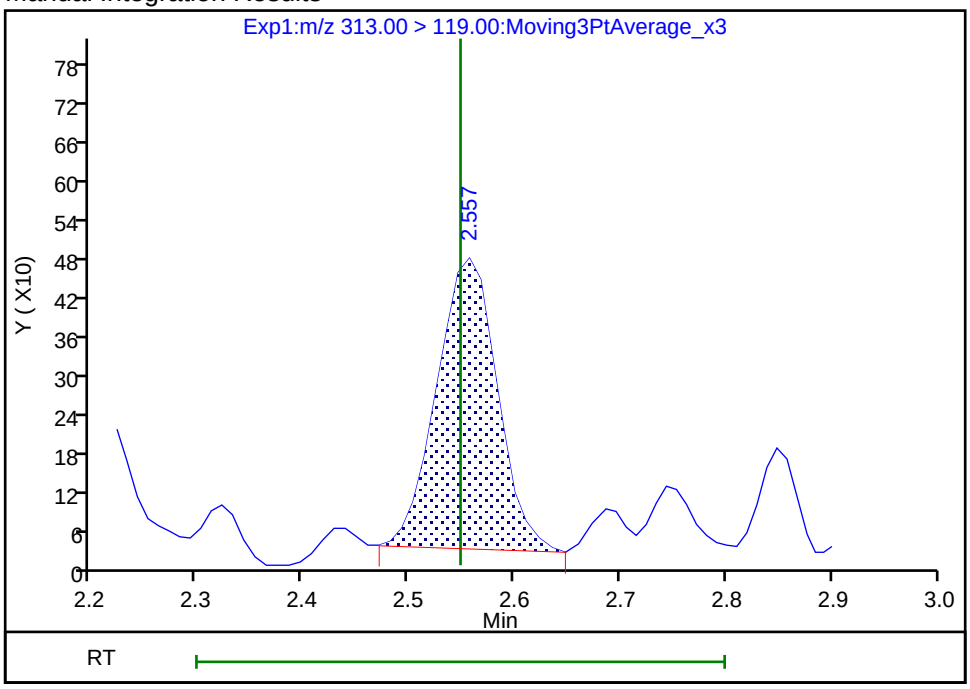
Not Detected
Expected RT: 2.55

Processing Integration Results



Manual Integration Results

RT: 2.56
Area: 1783
Amount: 0.027650
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:41:10
Audit Action: Manually Integrated Audit Reason: Assign Peak

Eurofins TestAmerica, Sacramento

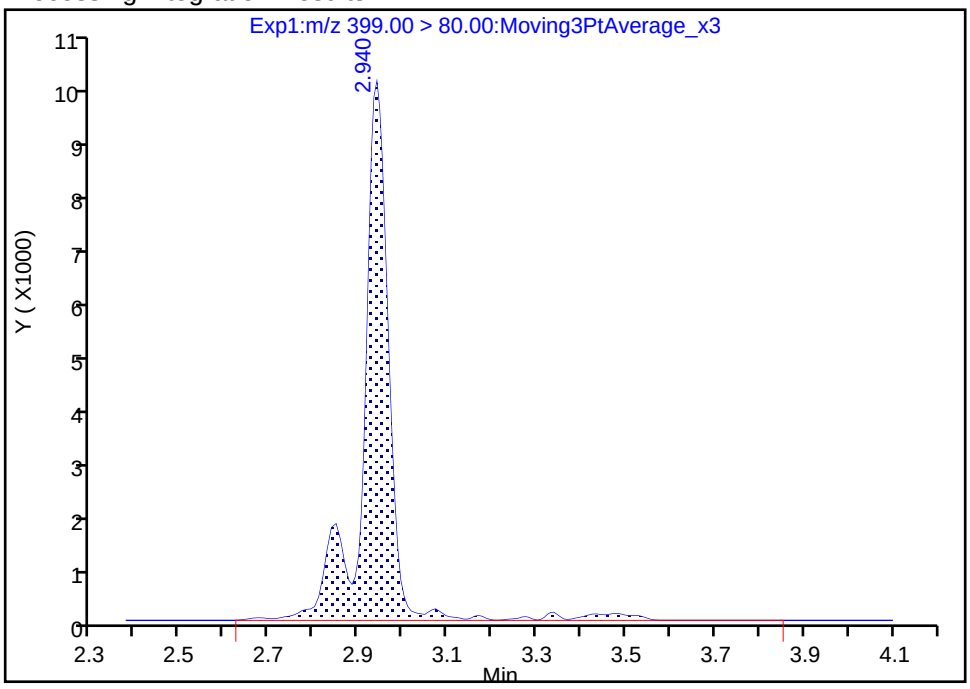
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d				
Injection Date:	02-Jun-2020 15:24:36	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

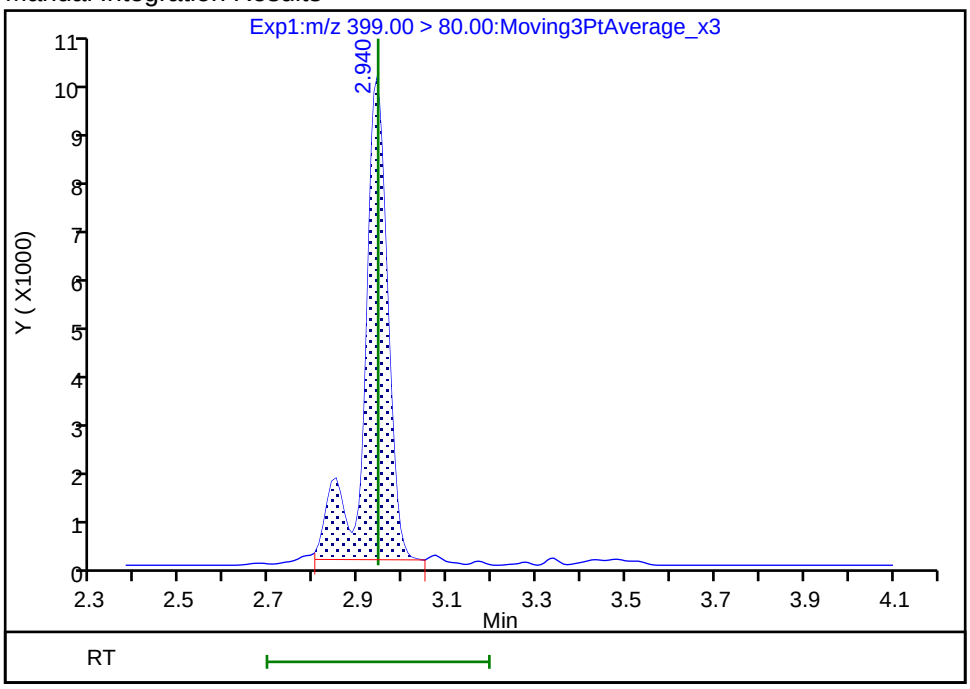
Processing Integration Results

RT: 2.94
Area: 40720
Amount: 0.028610
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 36168
Amount: 0.025933
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:41:40
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

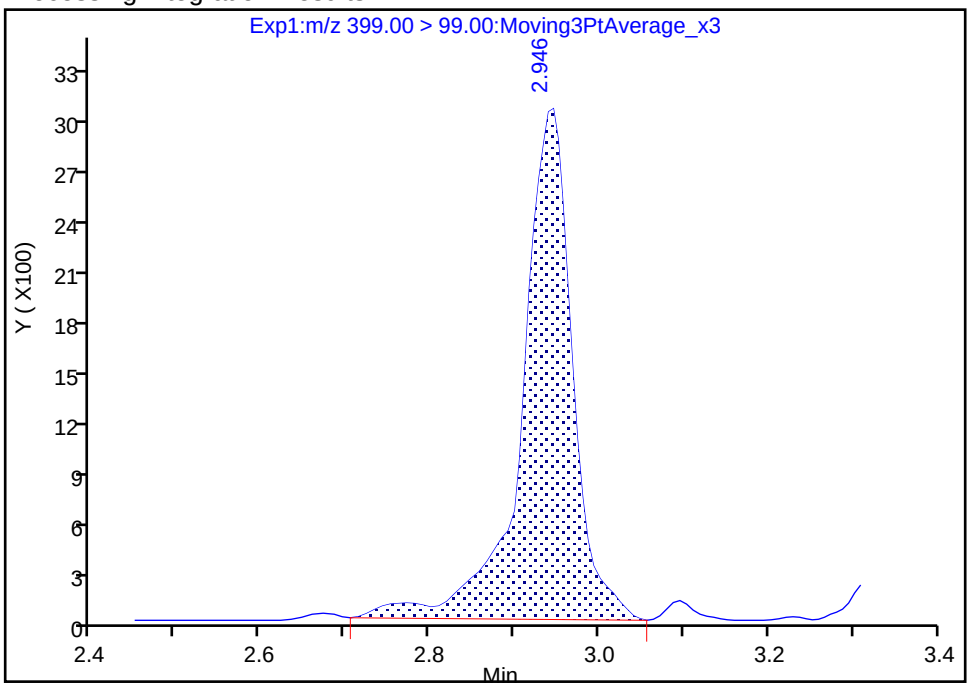
Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d
Injection Date: 02-Jun-2020 15:24:36 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTRLCMS02 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

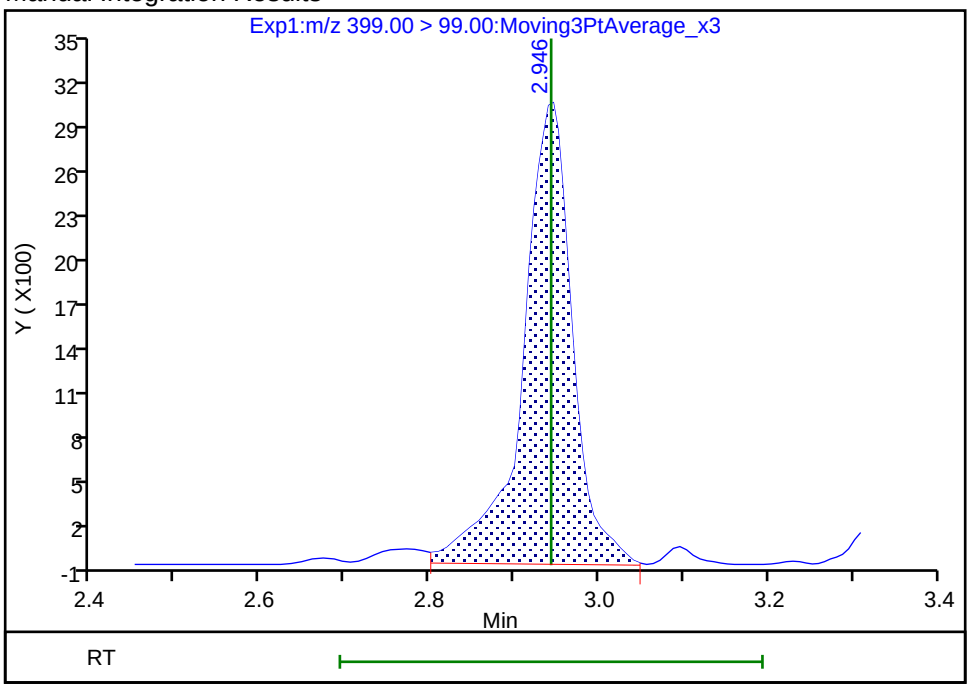
Processing Integration Results

RT: 2.95
Area: 12632
Amount: 0.028610
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 12336
Amount: 0.025933
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:41:52
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

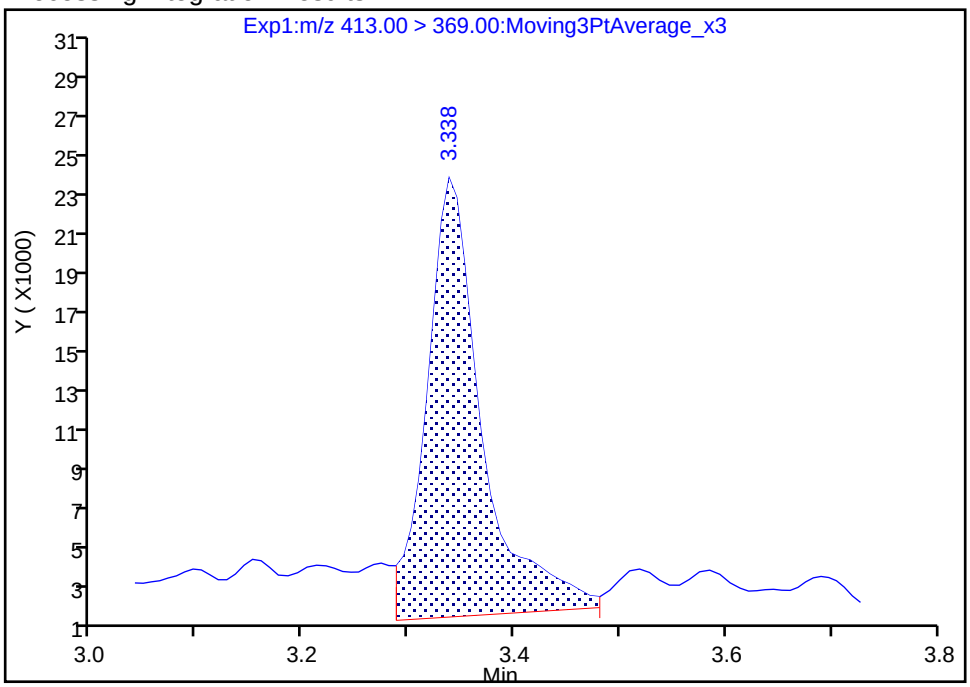
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d				
Injection Date:	02-Jun-2020 15:24:36	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

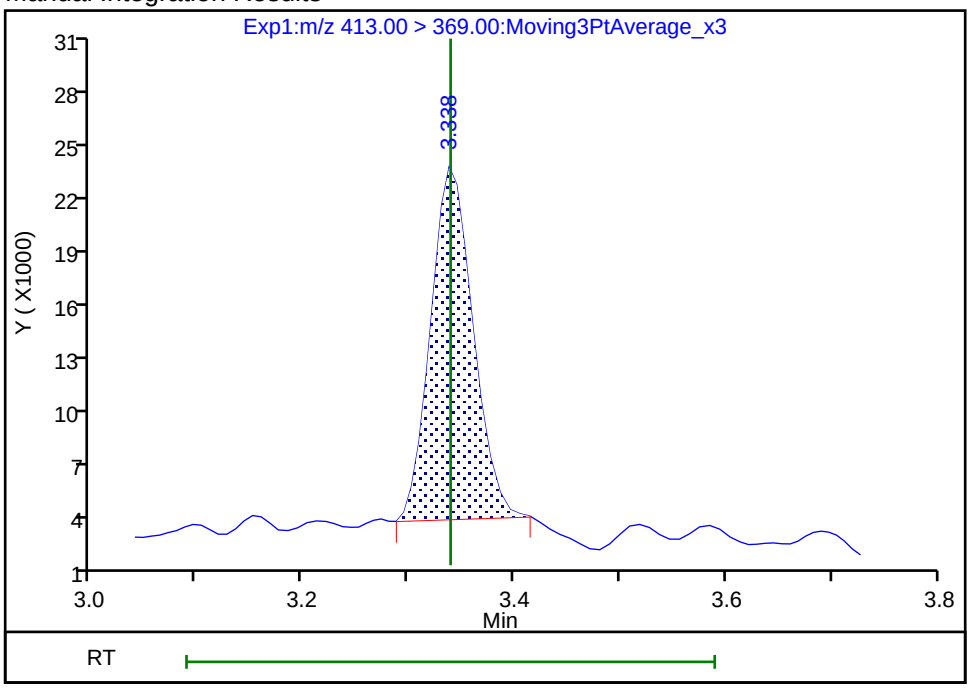
Processing Integration Results

RT: 3.34
Area: 79795
Amount: 0.038131
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 53956
Amount: 0.028601
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:42:11
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

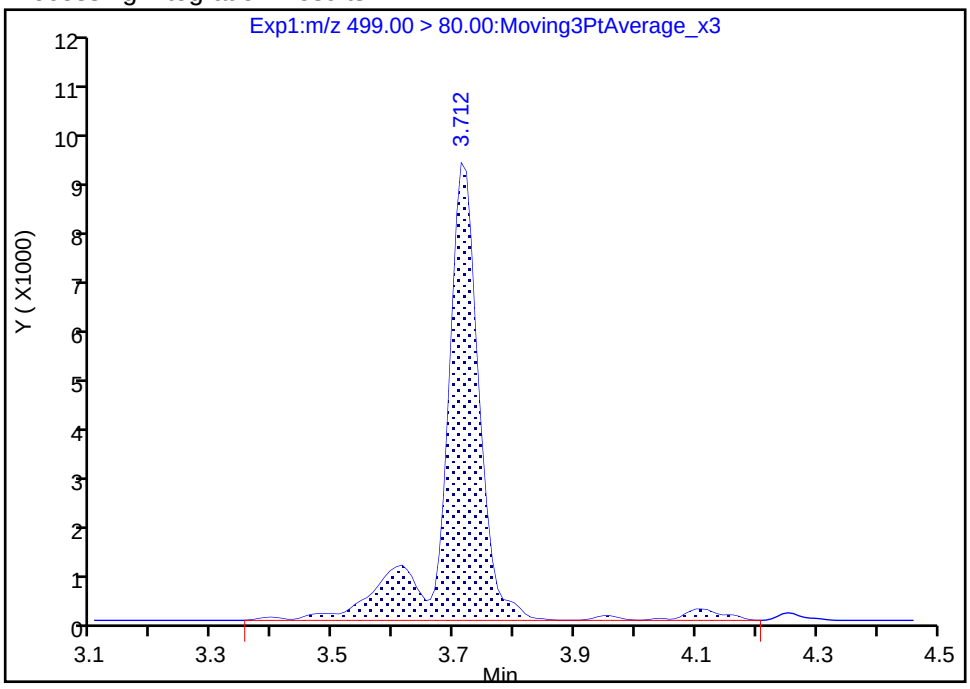
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d				
Injection Date:	02-Jun-2020 15:24:36	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

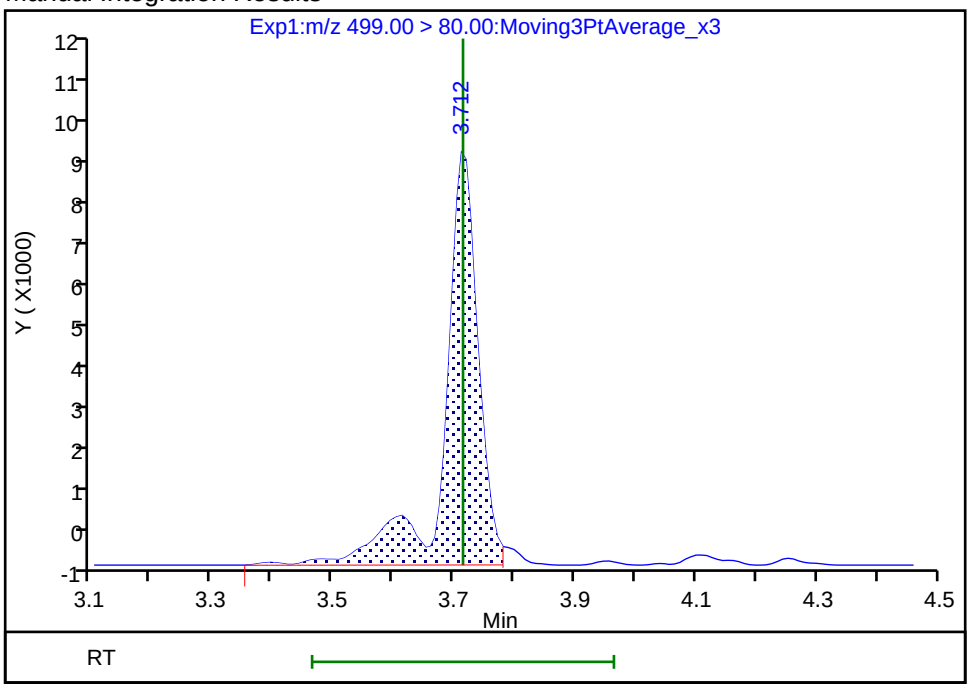
Processing Integration Results

RT: 3.71
Area: 36842
Amount: 0.022420
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 34830
Amount: 0.021417
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:42:28

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

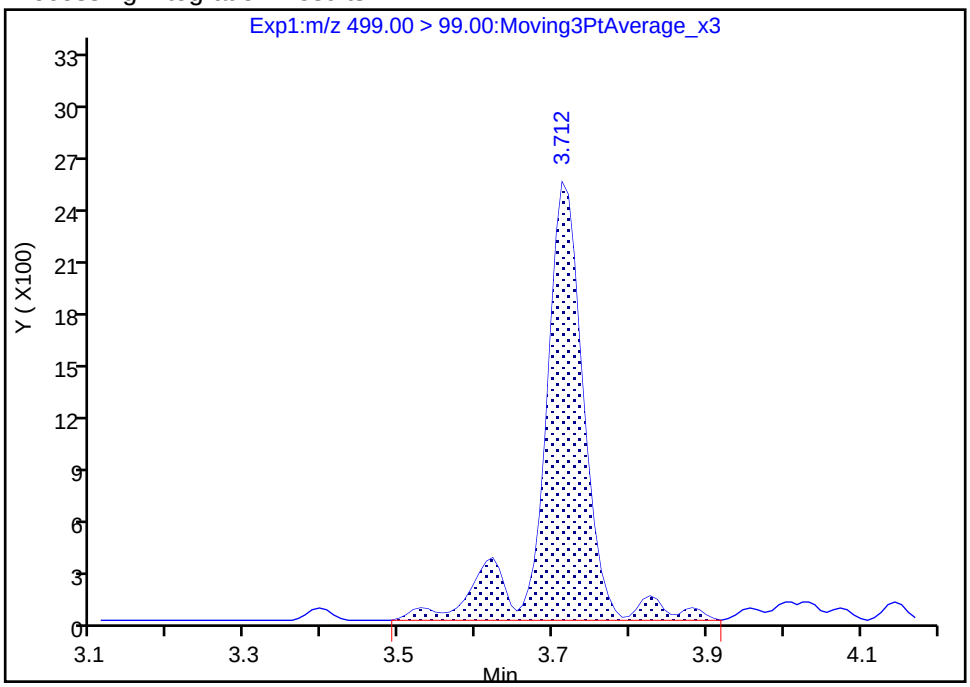
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d				
Injection Date:	02-Jun-2020 15:24:36	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

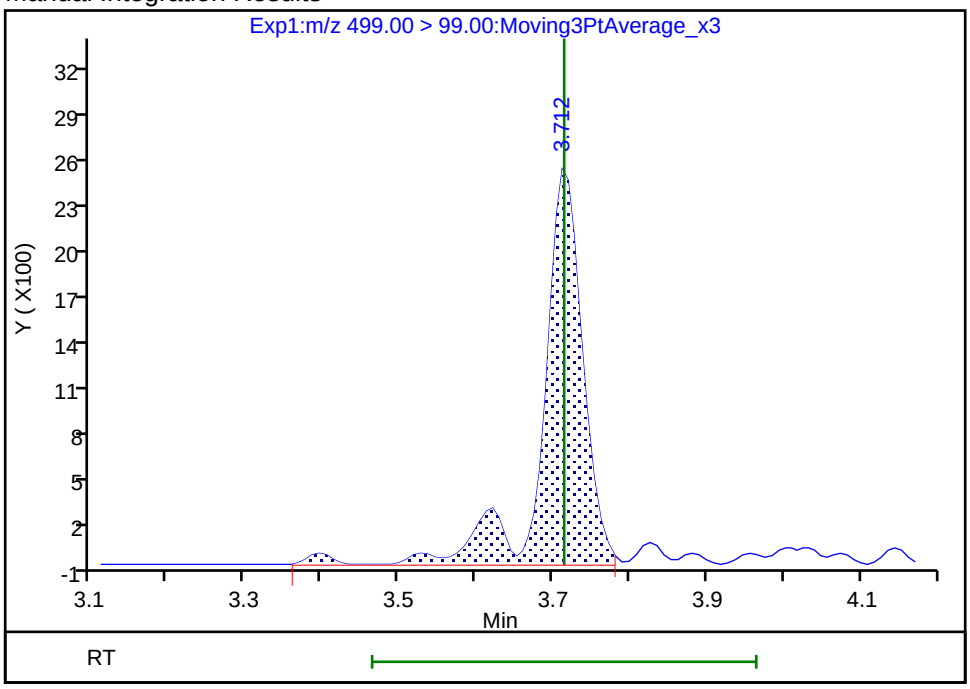
Processing Integration Results

RT: 3.71
Area: 9419
Amount: 0.022420
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 9234
Amount: 0.021417
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:42:41

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

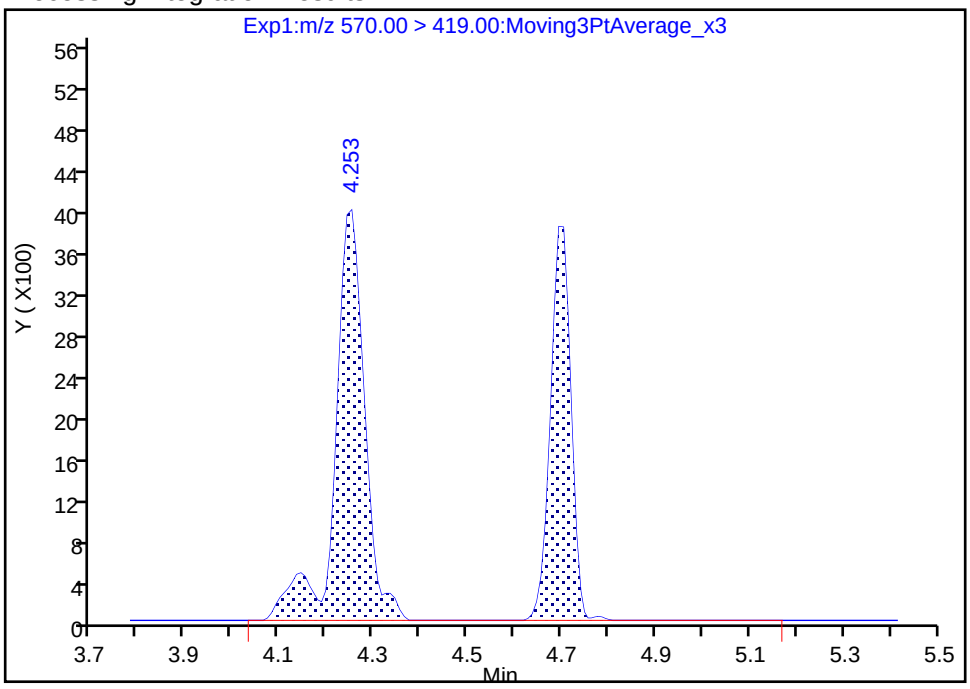
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d				
Injection Date:	02-Jun-2020 15:24:36	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

40 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

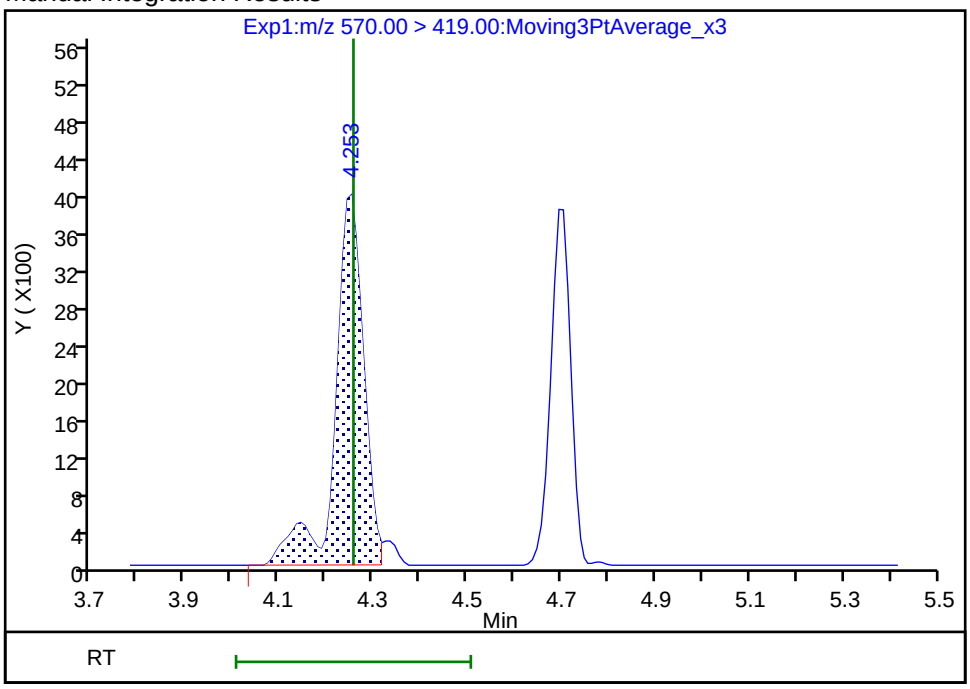
Processing Integration Results

RT: 4.25
Area: 28579
Amount: 0.040264
Amount Units: ng/ml



Manual Integration Results

RT: 4.25
Area: 16668
Amount: 0.026096
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:43:02
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

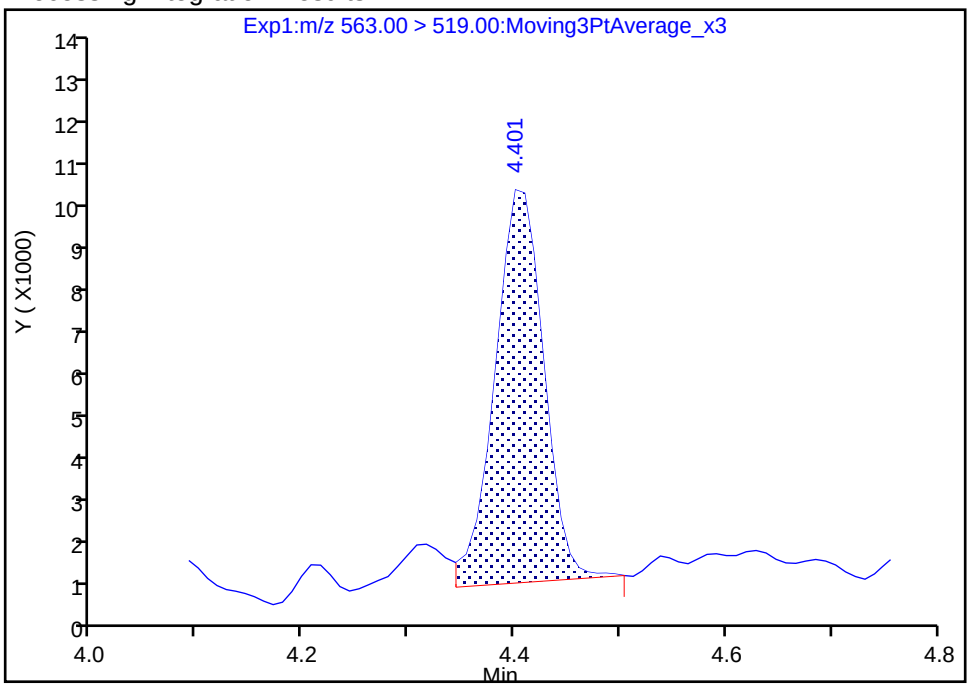
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d				
Injection Date:	02-Jun-2020 15:24:36	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

43 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

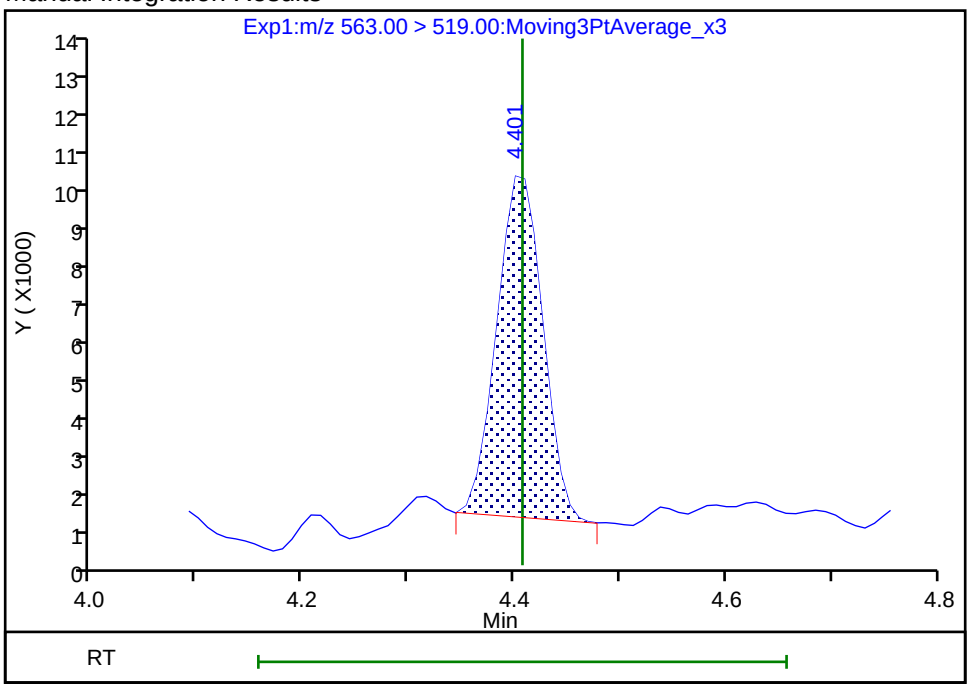
Processing Integration Results

RT: 4.40
Area: 29448
Amount: 0.024302
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 26654
Amount: 0.022290
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:43:15

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

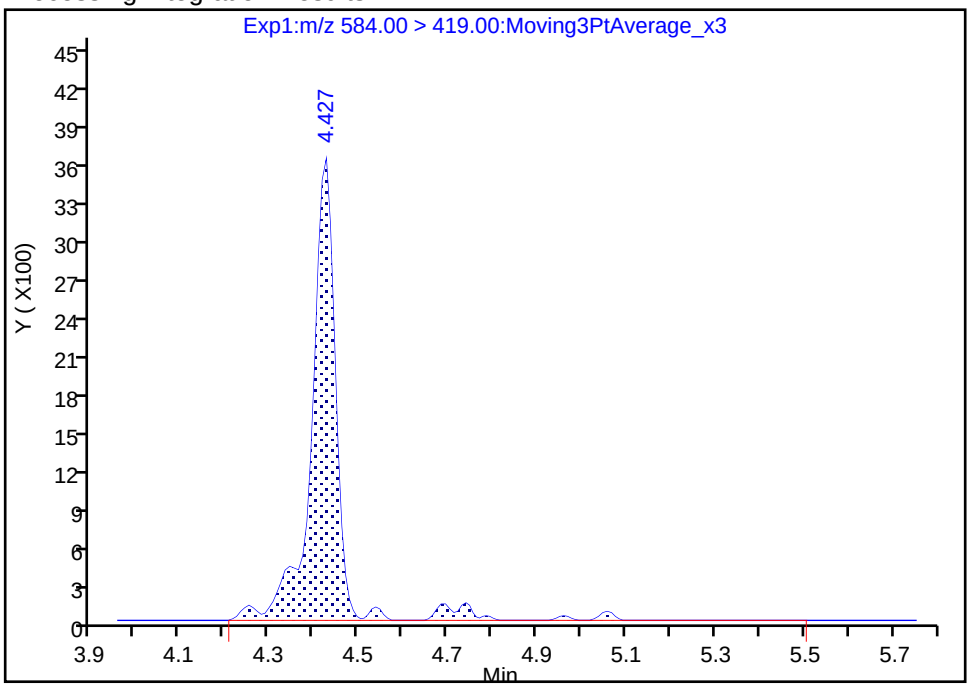
Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d
Injection Date: 02-Jun-2020 15:24:36 Instrument ID: A9
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTRLCMS02 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

44 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

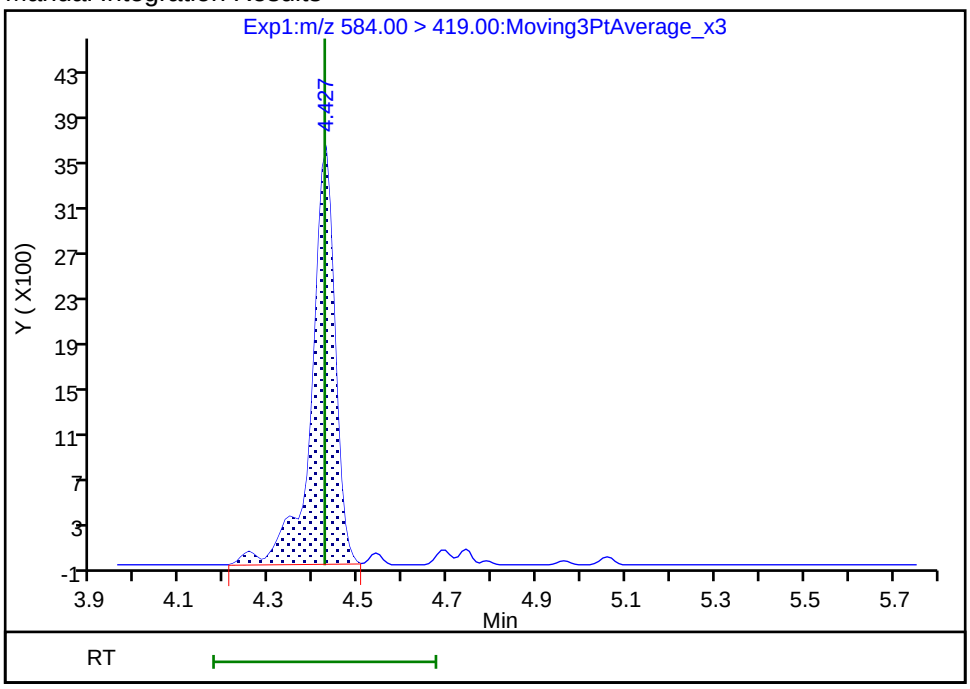
Processing Integration Results

RT: 4.43
Area: 14233
Amount: 0.028999
Amount Units: ng/ml



Manual Integration Results

RT: 4.43
Area: 13177
Amount: 0.027182
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:43:27
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

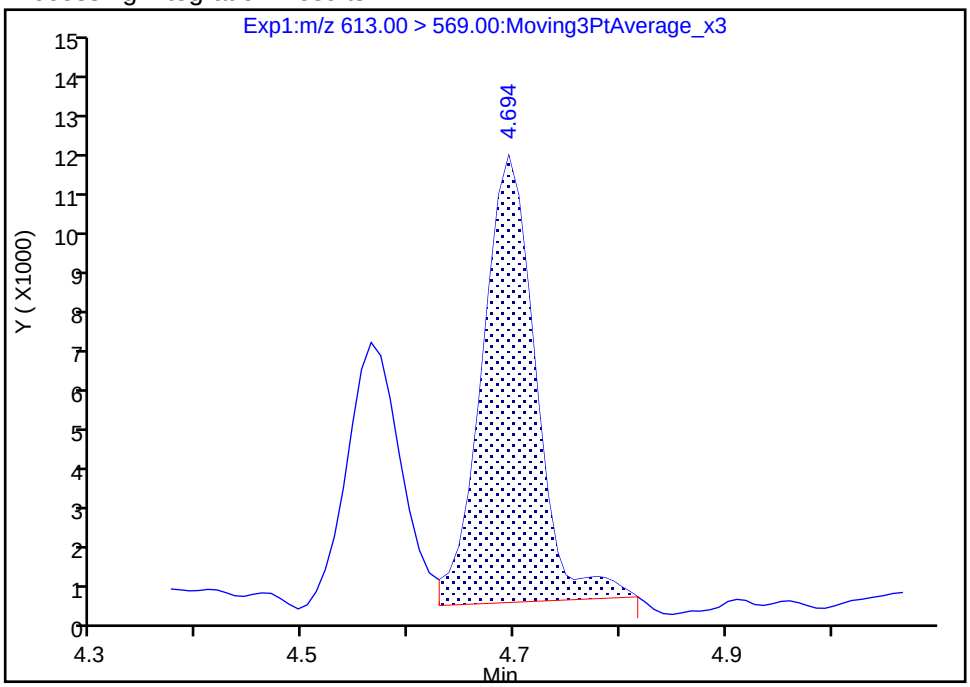
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_006.d				
Injection Date:	02-Jun-2020 15:24:36	Instrument ID:	A9		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

52 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

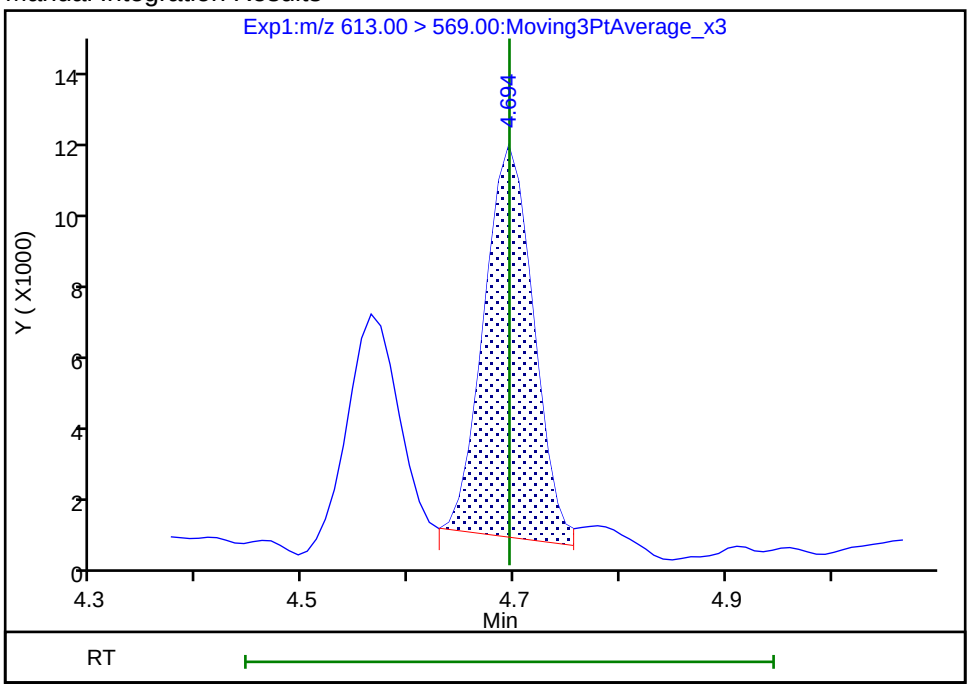
Processing Integration Results

RT: 4.69
Area: 40165
Amount: 0.024964
Amount Units: ng/ml



Manual Integration Results

RT: 4.69
Area: 36009
Amount: 0.022901
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:43:45
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 02-Jun-2020 15:33:57 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD2 (20)
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 02-Jun-2020 20:32:32 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1042

First Level Reviewer: adamst Date: 02-Jun-2020 19:47:07
Ratio Calibration: Average of Initial Calibration

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	1.888	1.890	-0.002	0.565	4634324	2.49		99.4	7938	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.893	1.893	0.0	1.003	43085	0.0485		97.0	44.3	
D 4 13C5 PFPeA										
267.90 > 223.00	2.190	2.193	-0.003	0.656	1614541	2.40		95.9	6587	
3 Perfluoropentanoic acid										M
262.90 > 219.00	2.198	2.196	0.002	1.004	36384	0.0540		108	7.9	M
D 6 13C3 PFBS										
301.90 > 80.00	2.224	2.224	0.0	0.666	1803340	2.08		89.6	3661	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.224	2.224	0.0	1.000	35293	0.0419	Target=2.39	94.7	25.5	
298.90 > 99.00	2.224	2.224	0.0	1.000	16204		2.18(1.20-3.59)	94.7	35.1	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.515	2.511	0.004	0.753	458517	2.52		108	3047	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.504	2.511	-0.007	0.996	21997	0.0391		83.6	284	
D 10 13C2 PFHxA										
315.00 > 270.00	2.547	2.549	-0.002	0.763	3357554	2.51		101	3962	
11 Perfluorohexanoic acid										M
313.00 > 269.00	2.547	2.549	-0.002	1.000	67912	0.0488	Target=15.64	97.5	32.7	M
313.00 > 119.00	2.547	2.549	-0.002	1.000	4826		14.07(7.82-23.46)	97.5	19.9	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.568	2.566	0.002	1.155	38411	0.0491	Target=1.75	105	183	
349.00 > 99.00	2.568	2.566	0.002	1.155	23092		1.66(0.88-2.63)	105	205	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.661	2.664	-0.003	0.797	2079961	2.44		97.4	3641	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.661	2.666	-0.005	1.000	23819	0.0494		98.9	377	
D 15 13C4 PFHpA										
367.00 > 322.00	2.935	2.935	0.0	0.879	3066604	2.55		102	6144	
D 17 18O2 PFHxS										
403.00 > 84.00	2.940	2.941	-0.001	0.881	2703567	2.37		100	3820	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.940	2.940	0.0	1.000	62448	0.0463	Target=3.04	102	243	
399.00 > 99.00	2.935	2.940	-0.005	0.998	20988		2.98(1.52-4.56)	102	92.3	M
18 Perfluoroheptanoic acid										M
363.00 > 319.00	2.935	2.937	-0.002	1.000	82859	0.0517	Target=4.39	103	36.8	M
363.00 > 169.00	2.935	2.937	-0.002	1.000	17123		4.84(2.20-6.59)	103	53.1	
19 DONA										
377.00 > 251.00	2.987	2.986	0.001	0.804	135413	0.0504	Target=2.17	107	688	
377.00 > 85.00	2.981	2.986	-0.005	0.803	55981		2.42(1.09-3.26)	107	333	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.317	3.318	-0.001	0.994	390663	2.56		108	1909	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.324	3.321	0.003	1.002	15798	0.0431		91.0	70.6	
$ 21 13C8 PFOA										
421.00 > 376.00	3.332	3.333	-0.001	0.998	3506463	2.42		99.1	9524	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.339	3.334	0.005	0.899	72933	0.0489	Target=3.82	103	391	
449.00 > 99.00	3.332	3.334	-0.002	0.897	19142		3.81(1.91-5.72)	103	88.1	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.339	3.339	0.0	1.000	103142	0.0547	Target=2.82	109	10.5	M
413.00 > 169.00	3.339	3.339	0.0	1.000	38609		2.67(1.41-4.23)	109	125	
D 26 13C4 PFOA										
417.00 > 372.00	3.339	3.339	0.0	1.000	3748340	2.54		102	7313	
* 25 13C2 PFOA										
415.00 > 370.00	3.339	3.339	0.0		3866787	2.50			9457	
$ 27 13C8 PFOS										
507.00 > 99.00	3.707	3.709	-0.002	1.110	807526	2.39		100	3026	
D 31 13C4 PFOS										
503.00 > 80.00	3.714	3.714	0.0	1.112	3372649	2.32		96.9	4440	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.714	3.712	0.002	1.000	74349	0.0483	Target=4.25	104	236	M
499.00 > 99.00	3.707	3.712	-0.005	0.998	16919		4.39(2.13-6.38)	104	115	M
30 Perfluorononanoic acid										M
463.00 > 419.00	3.729	3.728	0.001	1.000	77744	0.0487	Target=5.46	97.4	21.2	M
463.00 > 169.00	3.729	3.728	0.001	1.000	14829		5.24(2.73-8.19)	97.4	79.6	
D 29 13C5 PFNA										
468.00 > 423.00	3.729	3.728	0.001	1.117	3666183	2.53		101	6074	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.921	3.920	0.001	1.056	75167	0.0464		99.5	222	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.060	4.061	-0.001	1.093	43254	0.0452	Target=4.97	94.2	261	
549.00 > 99.00	4.060	4.061	-0.001	1.093	10638		4.07(2.48-7.45)	94.2	131	
D 36 13C8 FOSA										
506.00 > 78.00	4.086	4.087	-0.001	1.224	1517483	2.63		105	2257	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.086	4.087	-0.001	1.000	104675	0.0530		106	571	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.086	4.088	-0.002	1.000	92233	0.0526	Target=14.66	105	50.2	
513.00 > 169.00	4.086	4.088	-0.002	1.000	4245		21.73(7.33-21.99)	105	61.1	
D 33 13C2 PFDA										
515.00 > 470.00	4.086	4.088	-0.002	1.224	4378859	2.58		103	6724	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.086	4.091	-0.005	1.000	19212	0.0472		98.5	98.4	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.086	4.091	-0.005	1.224	443012	2.44		102	2764	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.247	4.252	-0.005	1.272	1655186	2.45		97.9	2516	
40 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.256	4.257	-0.001	1.002	30077	0.0490		98.0	13.4	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.387	4.383	0.004	1.181	52526	0.0462	Target=4.49	95.8	95.2	
599.00 > 99.00	4.387	4.383	0.004	1.181	10811		4.86(2.25-6.74)	95.8	57.0	
43 Perfluoroundecanoic acid										R
563.00 > 519.00	4.404	4.407	-0.003	1.000	60424	0.0536	Target=10.82	107	21.8	R
563.00 > 169.00	4.404	4.407	-0.003	1.000	3490		17.31(5.41-16.23)	107	19.0	
D 46 13C2 PFUnA										
565.00 > 520.00	4.404	4.407	-0.003	1.319	3646412	2.46		98.3	8015	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.413	4.413	0.0	1.322	1368139	2.66		107	1912	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.421	4.423	-0.002	1.002	22764	0.0464		92.8	98.9	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.541	4.543	-0.002	1.223	106368	0.0482		102	674	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.550	4.549	0.001	1.363	2056110	12.2		97.3	4763	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.558	4.560	-0.002	1.002	11138	0.0482		96.5	65.7	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.568	4.568	0.0	1.368	826558	2.42		96.7	207	
50 NMeFOSA										
512.00 > 169.00	4.577	4.573	0.004	1.002	14852	0.0509		102	147	
D 56 13C2 PFDoA										
615.00 > 570.00	4.688	4.692	-0.004	1.404	3577959	2.54		102	6166	
52 Perfluorododecanoic acid										M
613.00 > 569.00	4.698	4.695	0.003	1.002	80598	0.0537	Target=8.20	107	28.9	M
613.00 > 169.00	4.688	4.695	-0.007	1.000	7928		10.17(4.10-12.30)	107	40.0	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.707	4.711	-0.004	1.152	18603	0.0512		106		
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.717	4.720	-0.003	1.413	2146993	12.6		101	4416	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.726	4.734	-0.008	1.002	10501	0.0416		83.2	54.3	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.744	4.745	-0.001		586358	2.28		91.1	1262	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.752	4.752	0.0	1.002	14982	0.0499		99.8	120	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.922	4.923	-0.001	1.325	5561	0.0438	Target=0.67	90.5	42.3	
699.00 > 99.00	4.922	4.923	-0.001	1.325	8709		0.64(0.33-1.00)	90.5	59.2	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.956	4.955	0.001	1.057	45124	0.0442	Target=5.48	88.3	34.1	
663.00 > 169.00	4.956	4.955	0.001	1.057	8556		5.27(2.74-8.23)	88.3	122	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.190	5.193	-0.003	1.554	3242384	2.37		94.9	4928	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.198	5.195	0.003	1.002	10836	0.0492	Target=1.49	98.3	145	
713.00 > 219.00	5.190	5.195	-0.005	1.000	7169		1.51(0.75-2.24)	98.3	71.9	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.619	5.621	-0.002	1.683	3260823	2.46		98.5	6006	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.619	5.621	-0.002	1.000	85571	0.0535	Target=5.24	107	18.9	
813.00 > 169.00	5.619	5.621	-0.002	1.000	14233		6.01(2.62-7.87)	107	154	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.025	6.021	0.004	1.072	35290	0.0476	Target=4.86	95.2	13.1	
913.00 > 169.00	6.025	6.021	0.004	1.072	7822		4.51(2.43-7.29)	95.2	46.4	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00020 Amount Added: 1.00 Units: mL

Report Date: 02-Jun-2020 20:32:33 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d

Injection Date: 02-Jun-2020 15:33:57 Instrument ID: A9

Lims ID: IC L2 Full

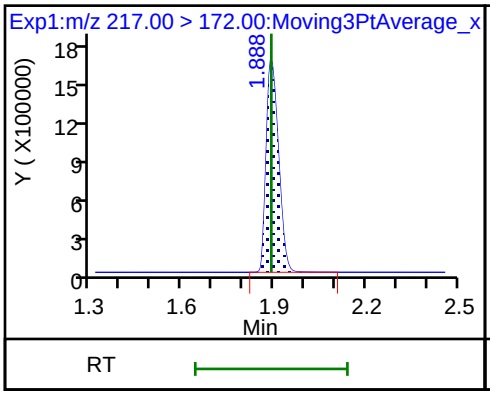
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 2 Worklist Smp#: 3

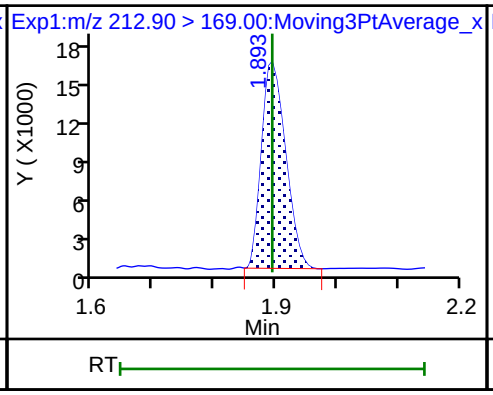
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

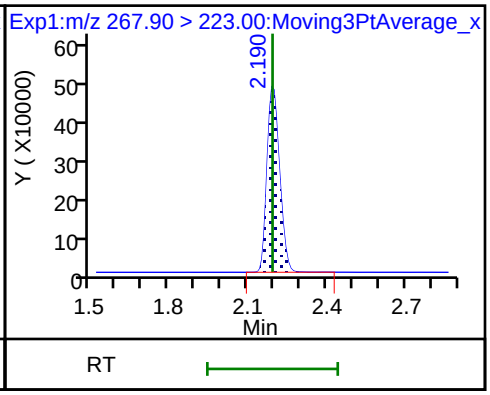
D 1 13C4 PFBA



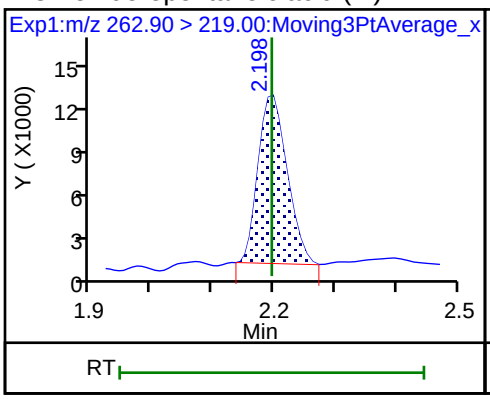
2 Perfluorobutanoic acid



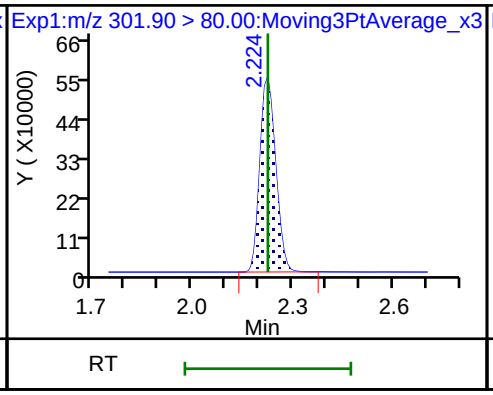
D 4 13C5 PFPeA



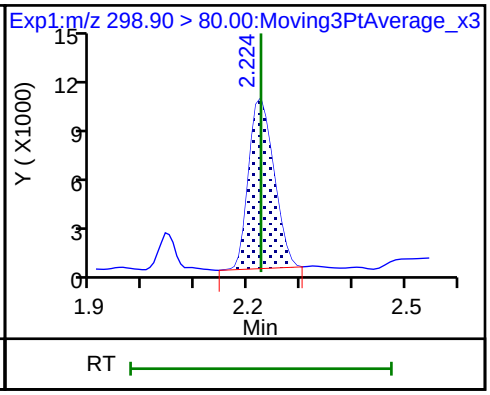
3 Perfluoropentanoic acid (M)



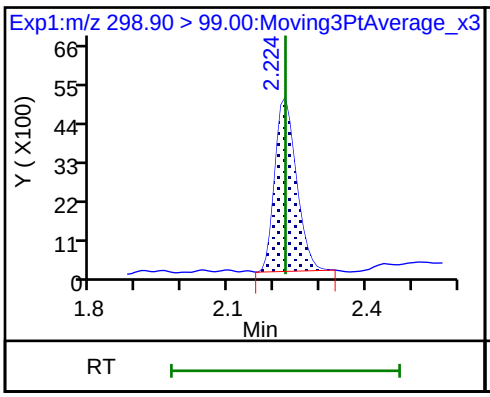
D 6 13C3 PFBS



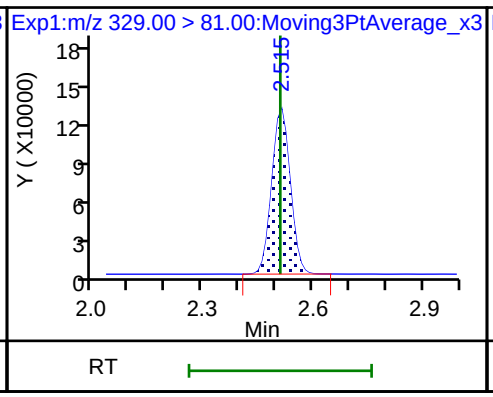
5 Perfluorobutanesulfonic acid



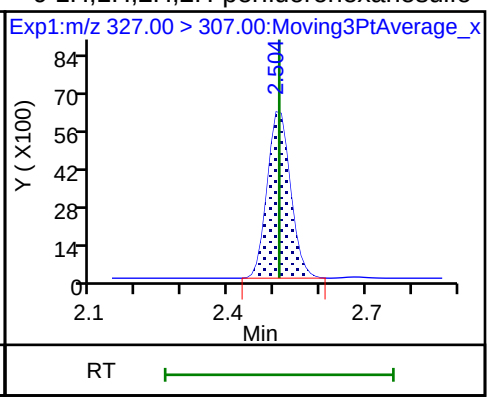
5 Perfluorobutanesulfonic acid



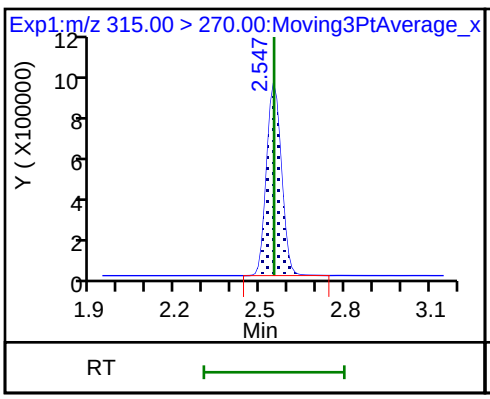
D 8 M2-4:2 FTS



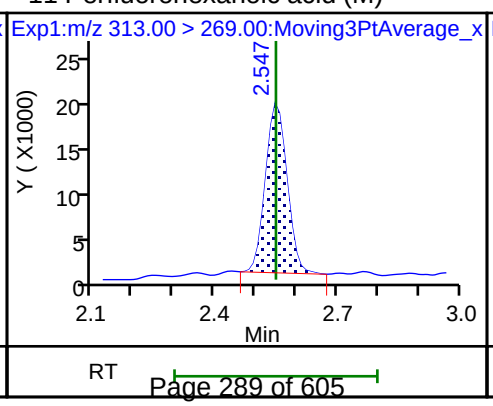
9 1H,1H,2H,2H-perfluorohexanesulfo



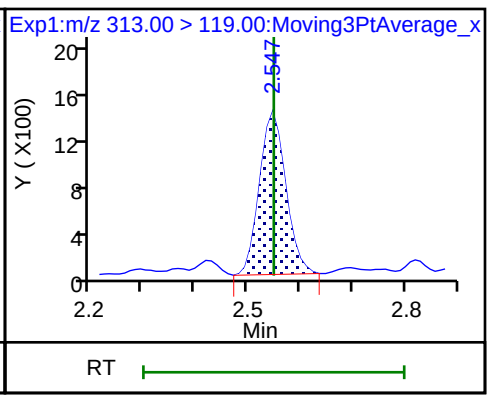
D 10 13C2 PFHxA



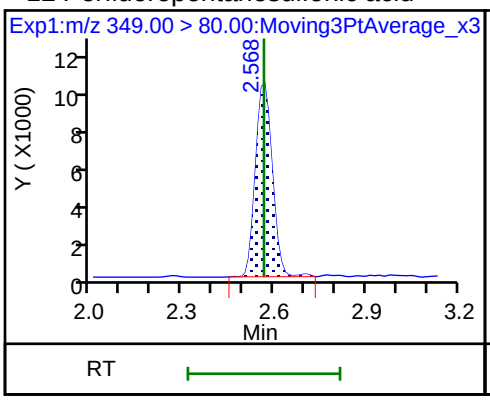
11 Perfluorohexanoic acid (M)



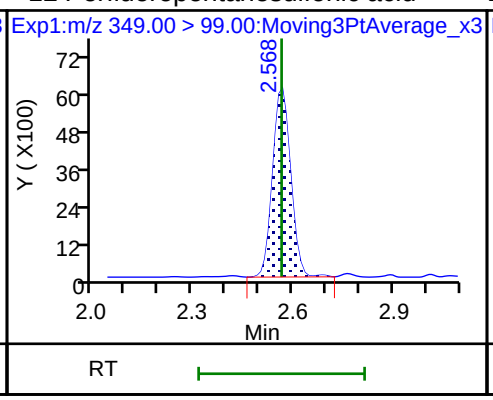
11 Perfluorohexanoic acid



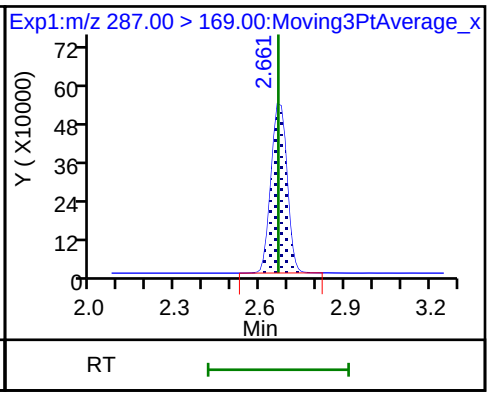
12 Perfluoropentanesulfonic acid



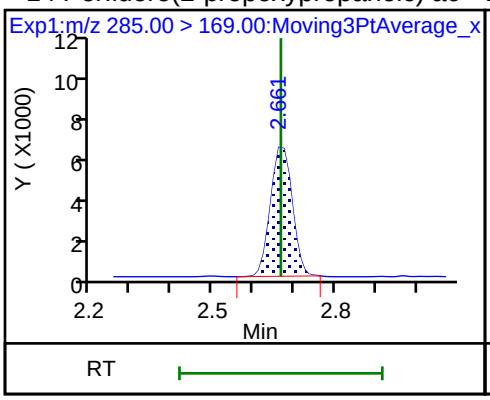
12 Perfluoropentanesulfonic acid



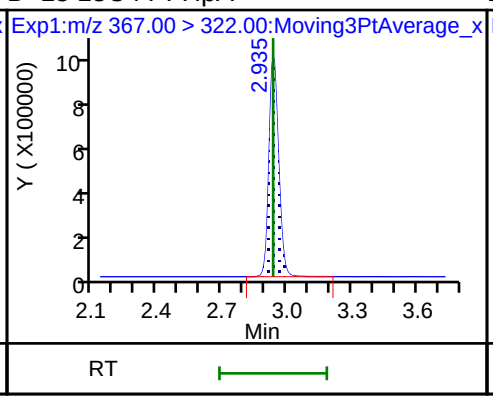
D 13 13C3 HFPO-DA



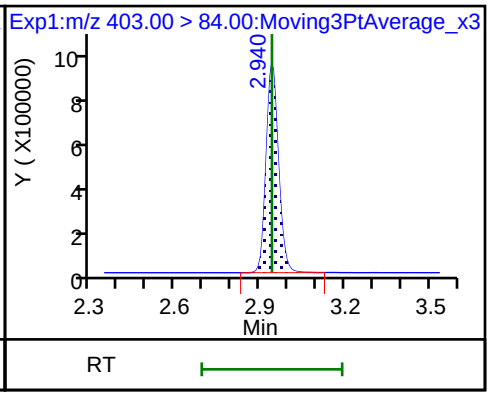
14 Perfluoro(2-propoxypropanoic) ac



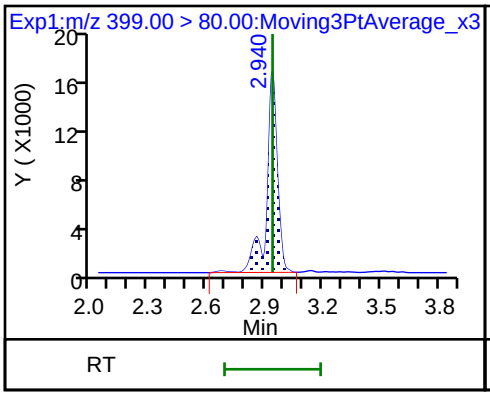
D 15 13C4 PFHpA



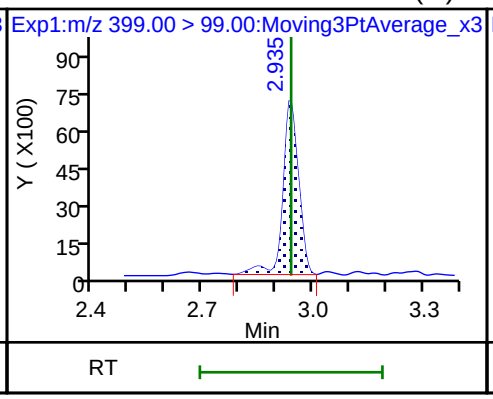
D 17 18O2 PFHxS



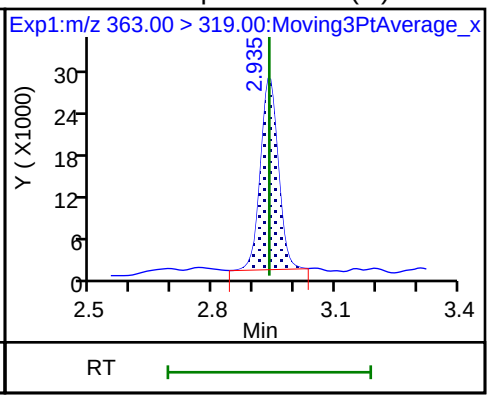
16 Perfluorohexanesulfonic acid



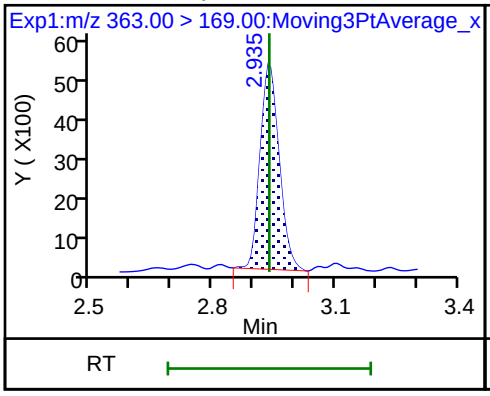
16 Perfluorohexanesulfonic acid (M)



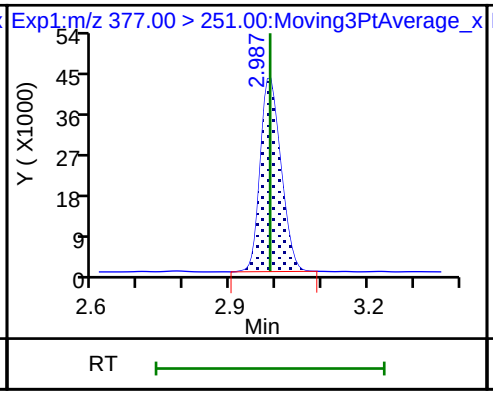
18 Perfluoroheptanoic acid (M)



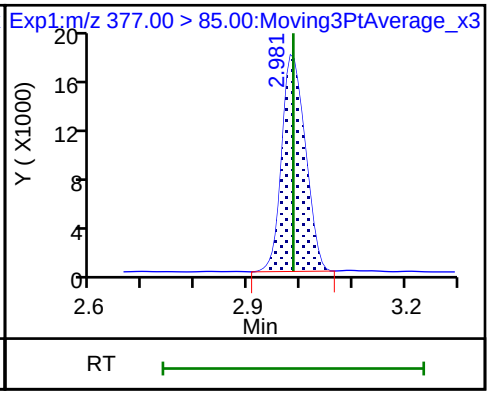
18 Perfluoroheptanoic acid



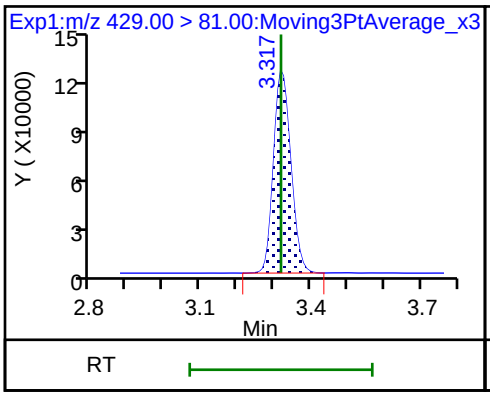
19 DONA



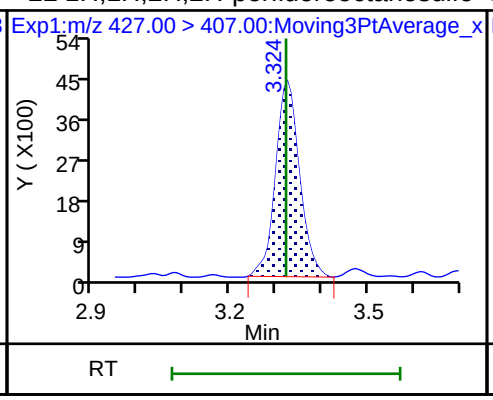
19 DONA



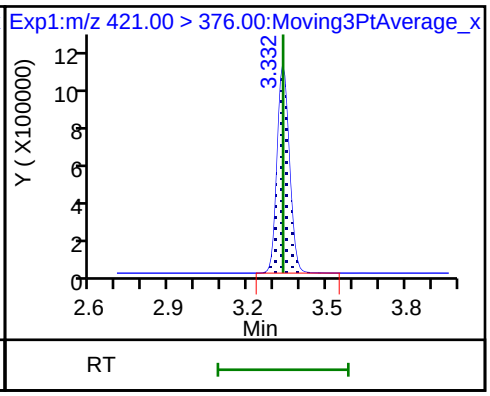
D 20 M2-6:2 FTS



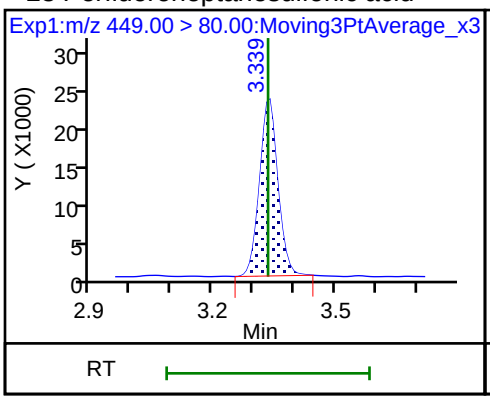
22 1H,1H,2H,2H-perfluorooctanesulfo



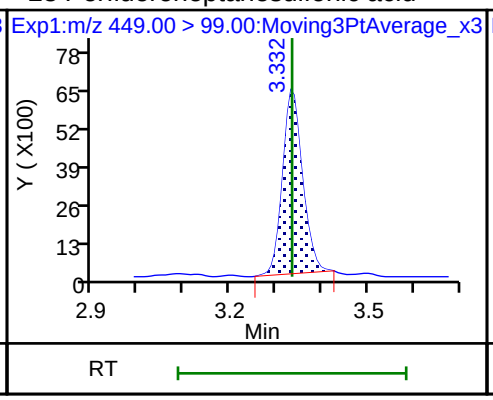
$ 21 13C8 PFOA



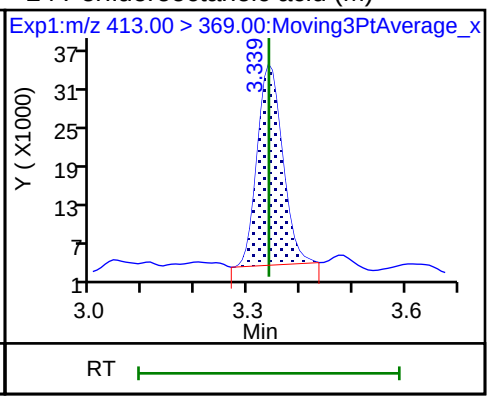
23 Perfluoroheptanesulfonic acid



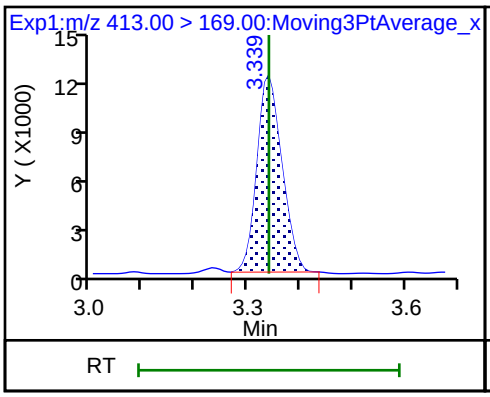
23 Perfluoroheptanesulfonic acid



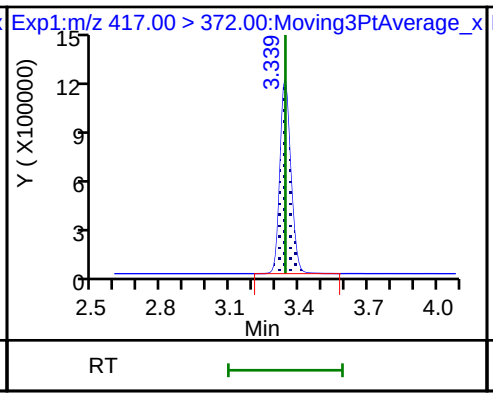
24 Perfluorooctanoic acid (M)



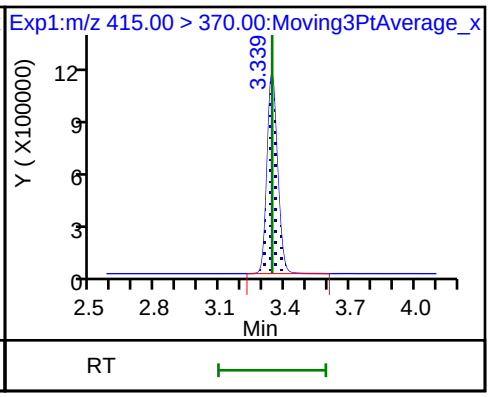
24 Perfluorooctanoic acid



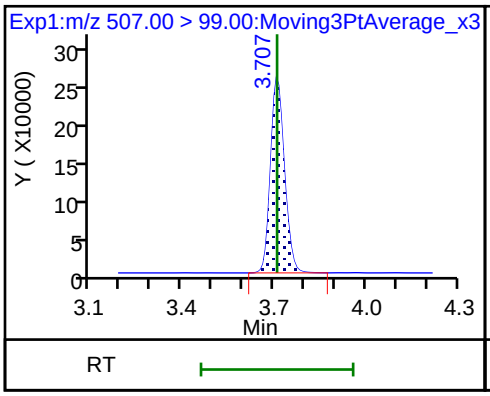
D 26 13C4 PFOA



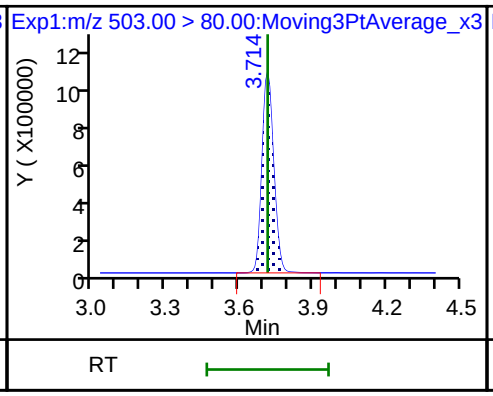
* 25 13C2 PFOA



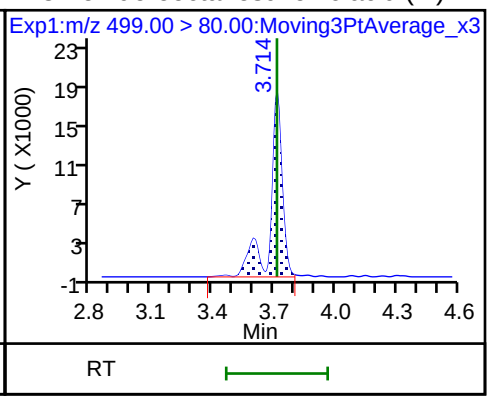
$ 27 13C8 PFOS



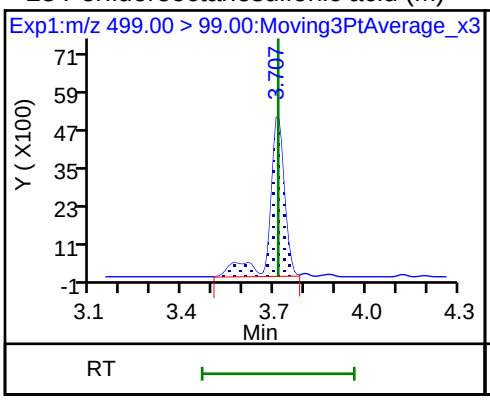
D 31 13C4 PFOS



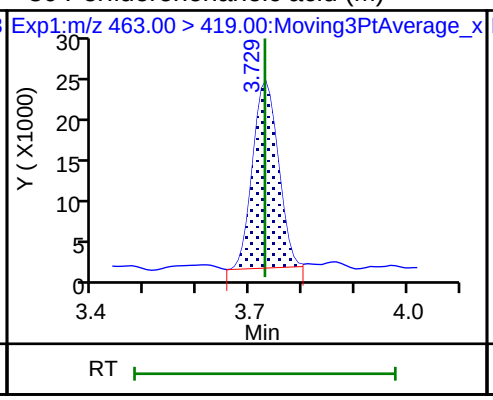
28 Perfluorooctanesulfonic acid (M)



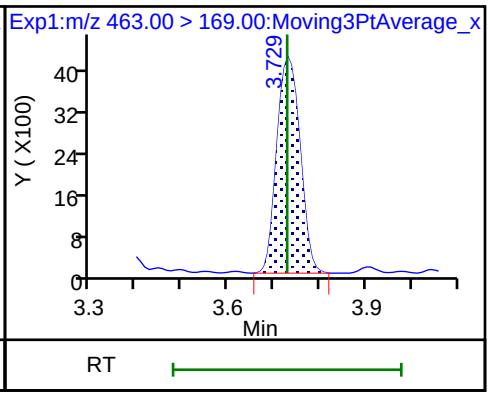
28 Perfluorooctanesulfonic acid (M)



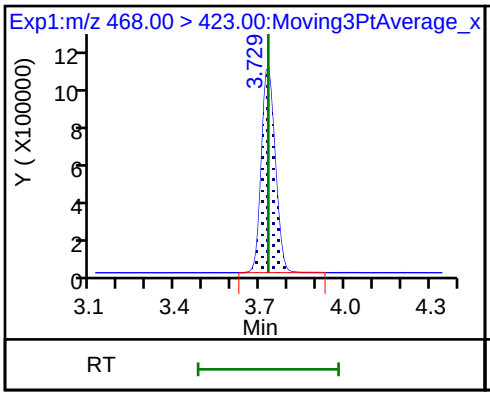
30 Perfluorononanoic acid (M)



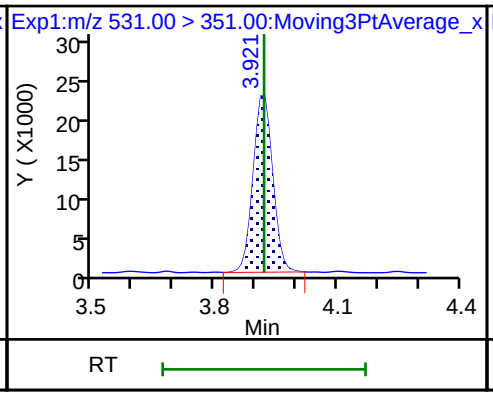
30 Perfluorononanoic acid



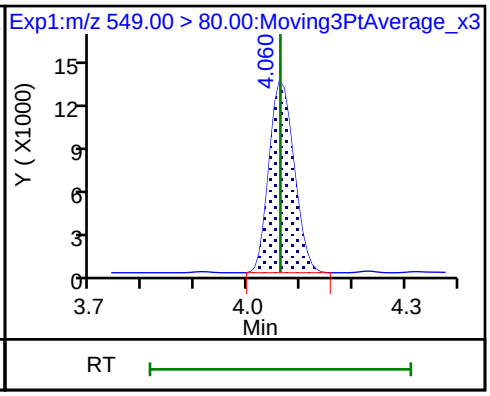
D 29 13C5 PFNA



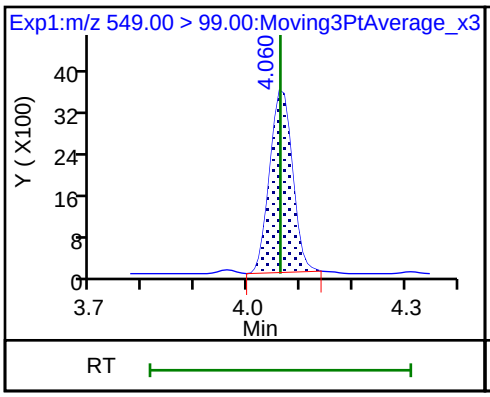
32 9-Chlorohexadecafluoro-3-oxanona



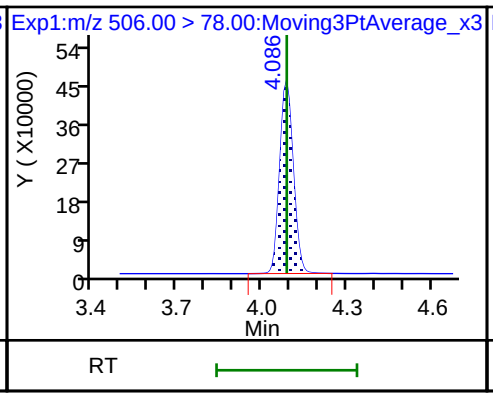
35 Perfluorononanesulfonic acid



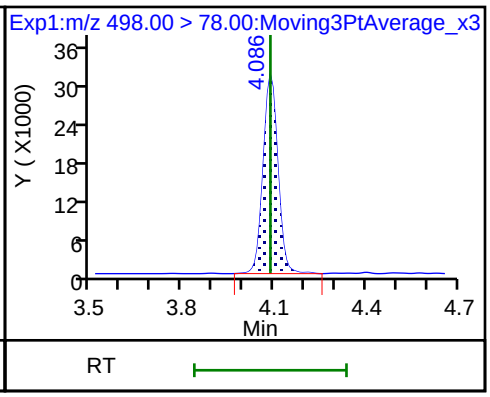
35 Perfluorononanesulfonic acid



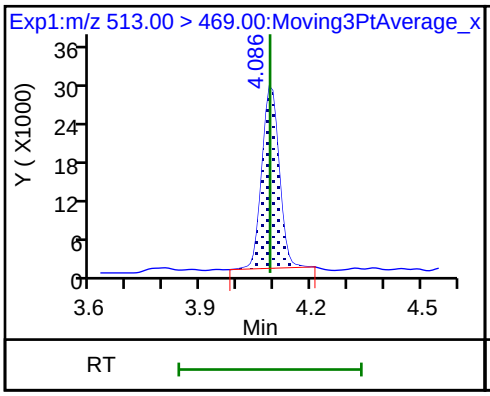
D 36 13C8 FOSA



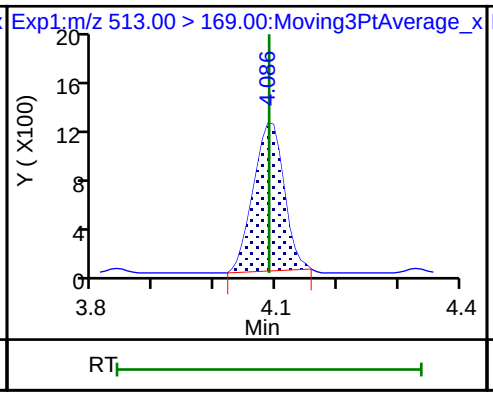
34 Perfluorooctanesulfonamide



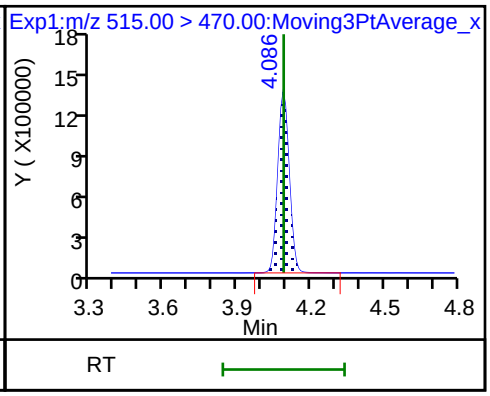
38 Perfluorodecanoic acid



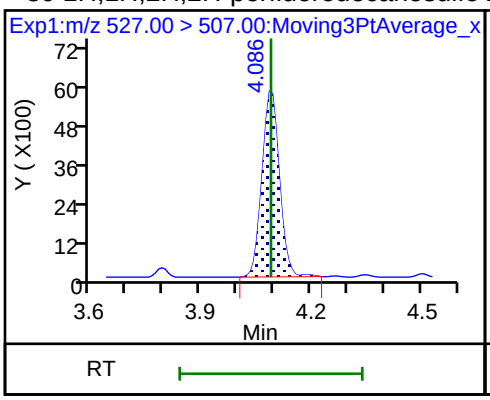
38 Perfluorodecanoic acid



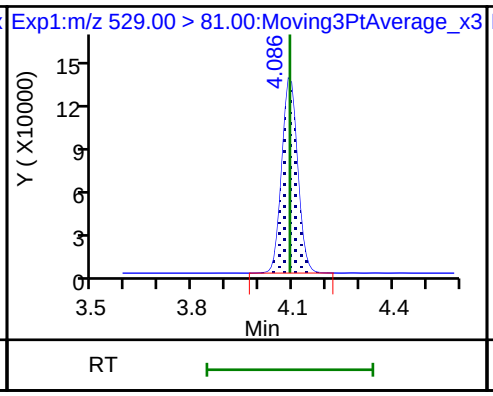
D 33 13C2 PFDA



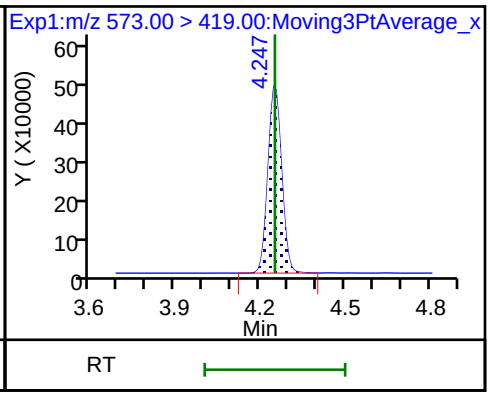
39 1H,1H,2H,2H-perfluorodecanesulfo



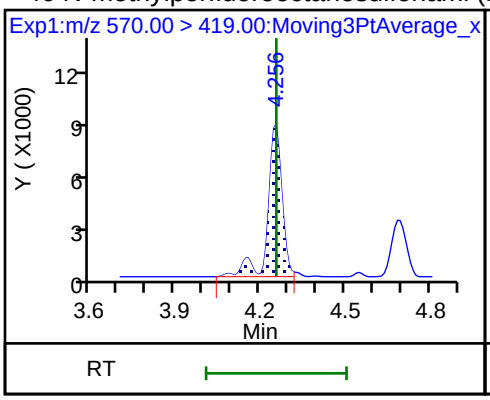
D 37 M2-8:2 FTS



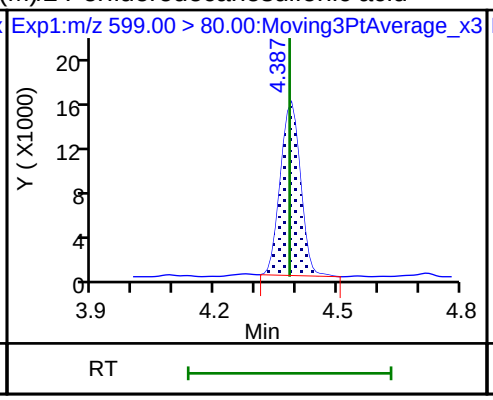
D 41 d3-NMeFOSAA



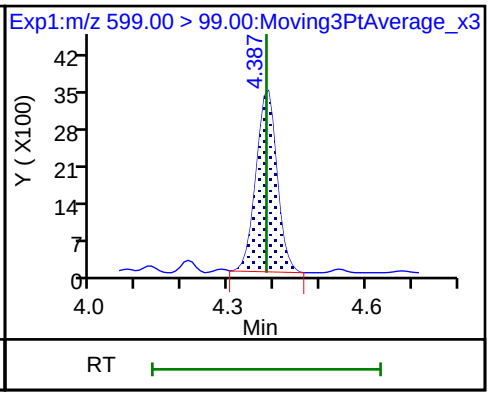
40 N-methylperfluorooctanesulfonami (M)



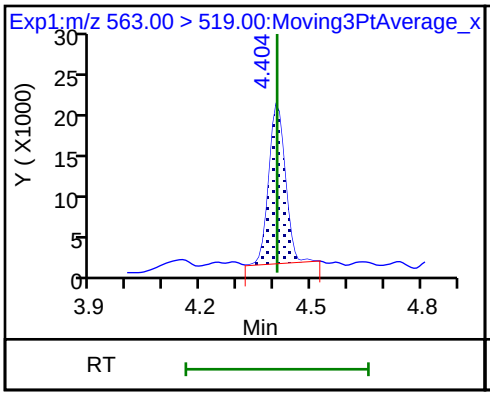
42 Perfluorodecanesulfonic acid



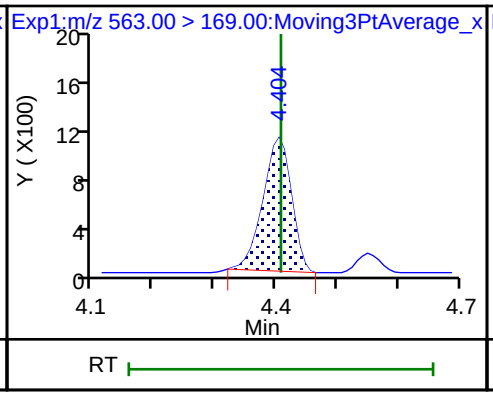
42 Perfluorodecanesulfonic acid



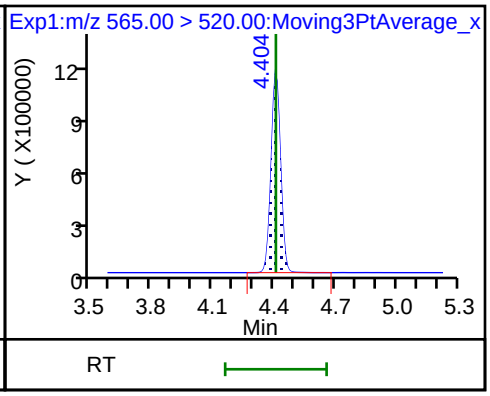
43 Perfluoroundecanoic acid



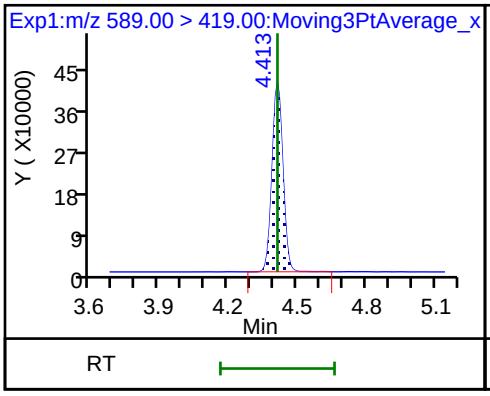
43 Perfluoroundecanoic acid



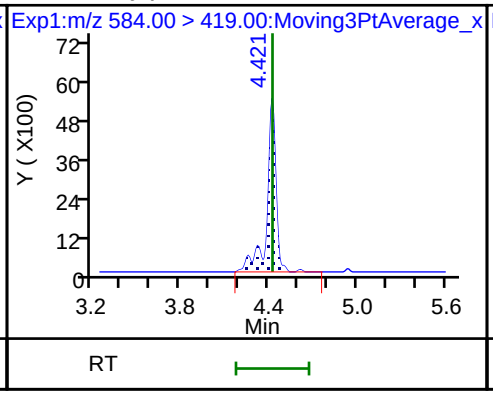
D 46 13C2 PFUnA



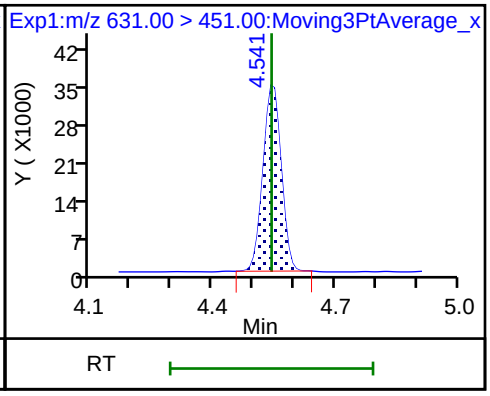
D 45 d5-NEtFOSAA



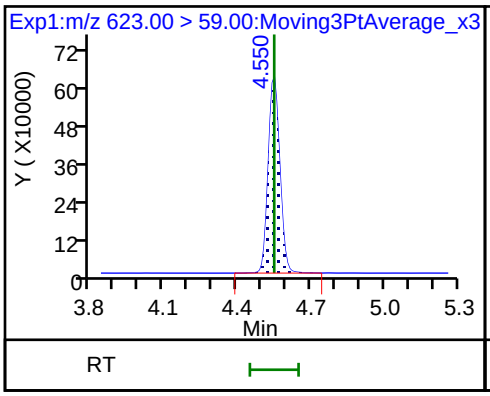
44 N-ethylperfluorooctanesulfonamid



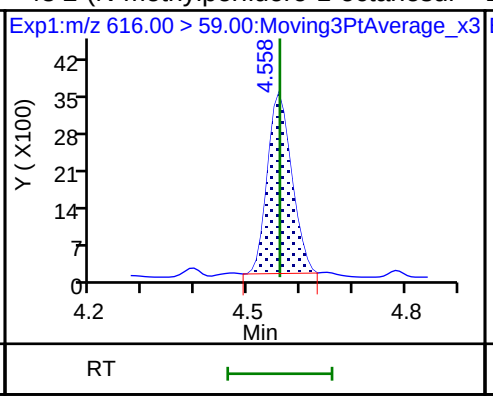
51 11-Chloroeicosafluoro-3-oxaundec



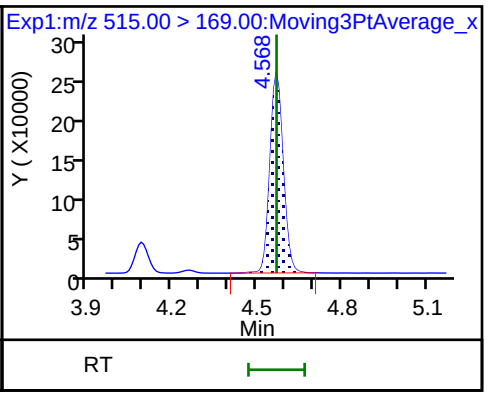
D 47 d7-N-MeFOSE-M



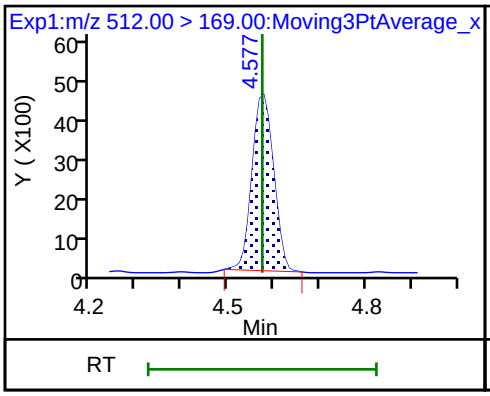
48 2-(N-methylperfluoro-1-octanesul



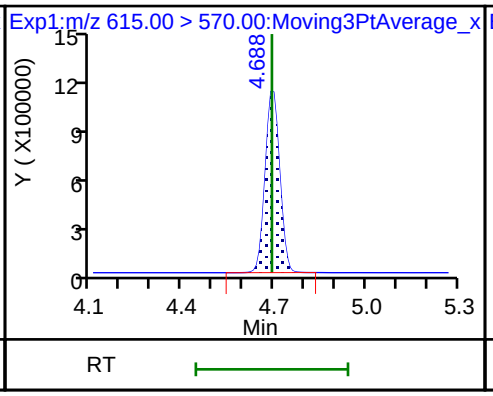
D 49 d-N-MeFOSA-M



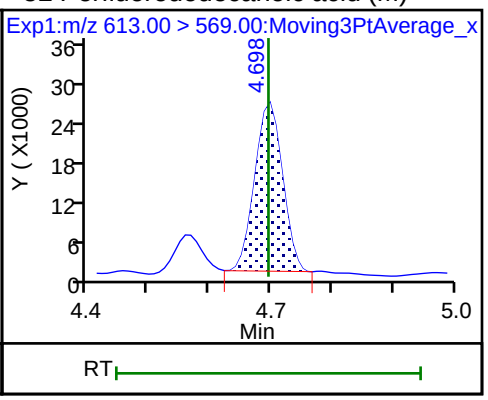
50 NMeFOSA



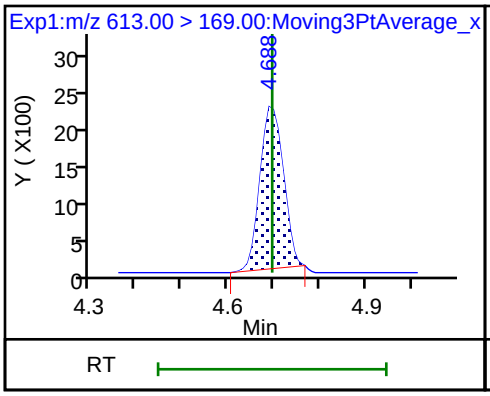
D 56 13C2 PFDoA



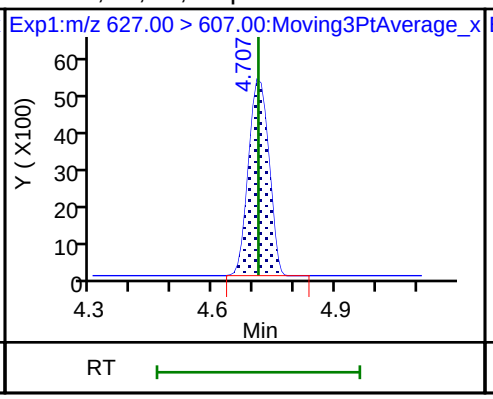
52 Perfluorododecanoic acid (M)



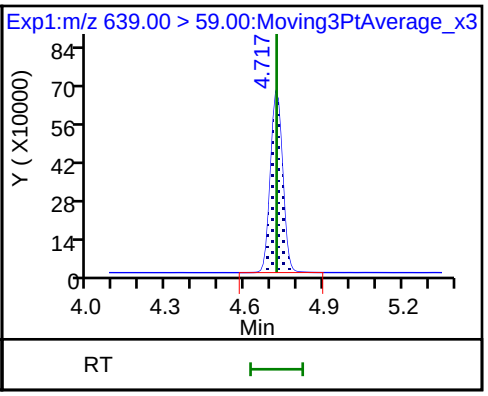
52 Perfluorododecanoic acid



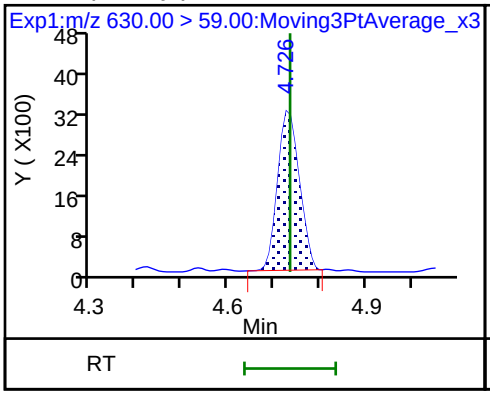
55 1H,1H,2H,2H-perfluorododecanesul



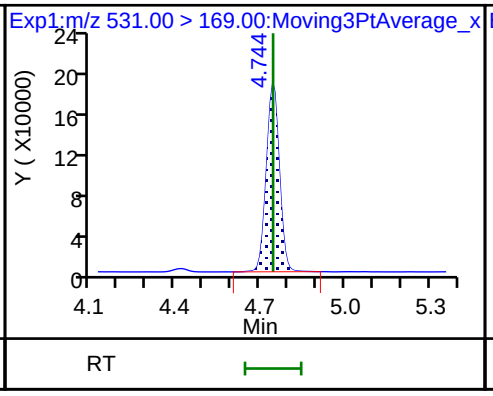
D 53 d9-N-EtFOSE-M



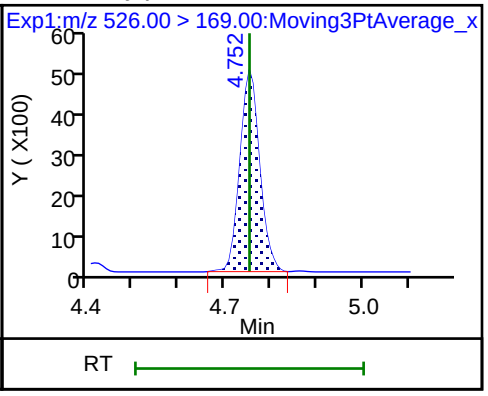
54 2-(N-ethylperfluoro-1-octanesulf



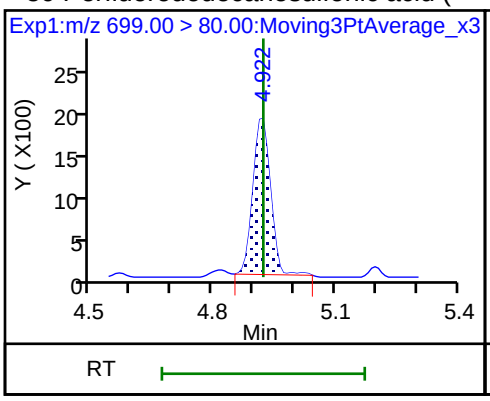
D 58 d-N-EtFOSA-M



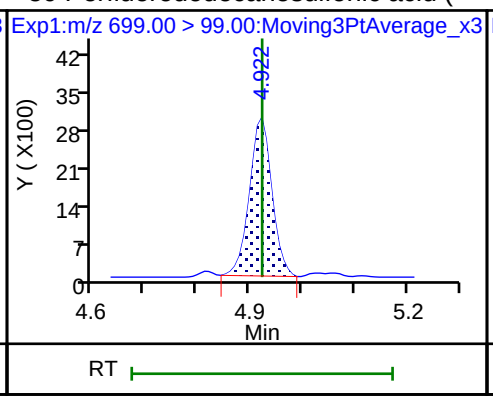
57 N-ethylperfluoro-1-octanesulfona



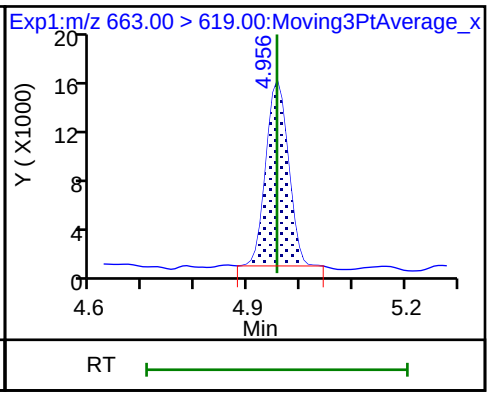
59 Perfluorododecanesulfonic acid (



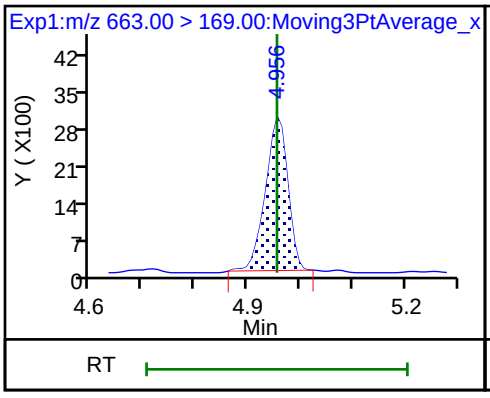
59 Perfluorododecanesulfonic acid (



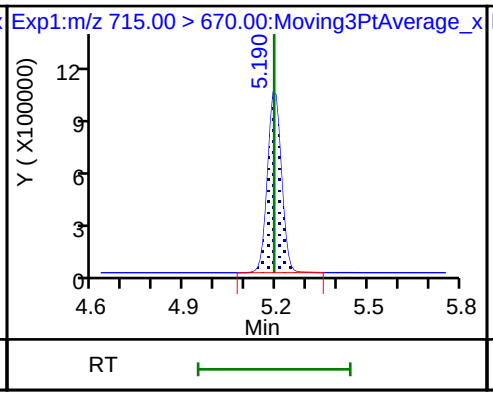
60 Perfluorotridecanoic acid



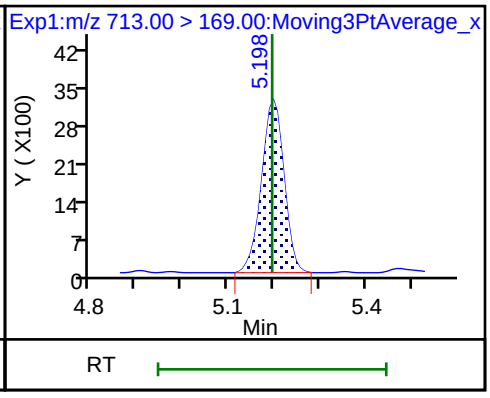
60 Perfluorotridecanoic acid



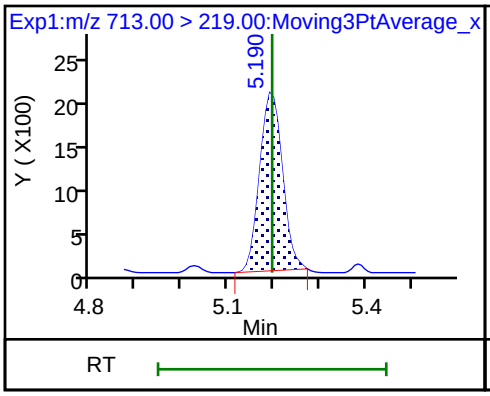
D 62 13C2 PFTeDA



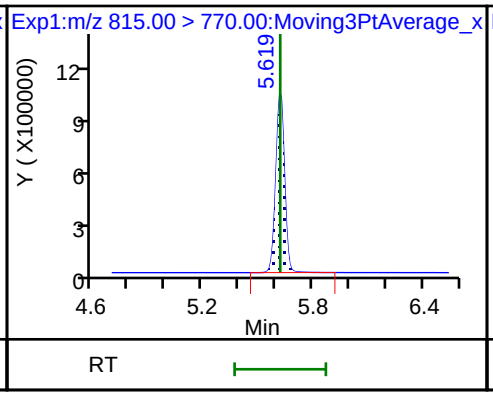
61 Perfluorotetradecanoic acid



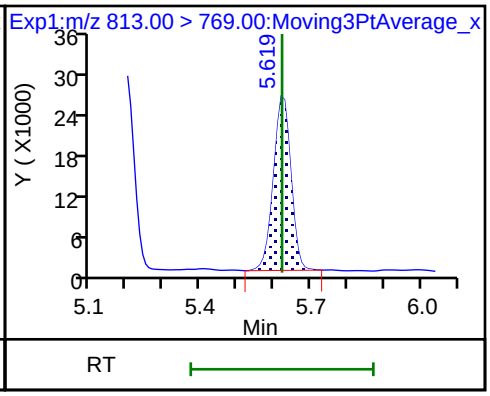
61 Perfluorotetradecanoic acid



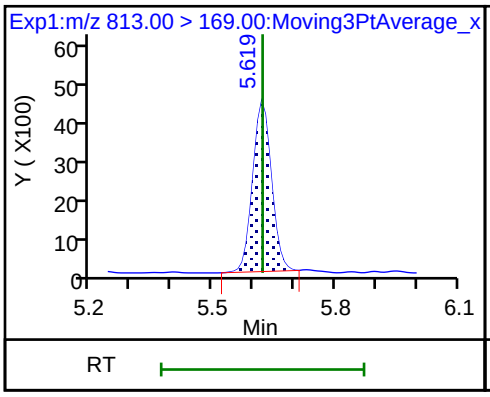
D 63 13C2 PFHxDA



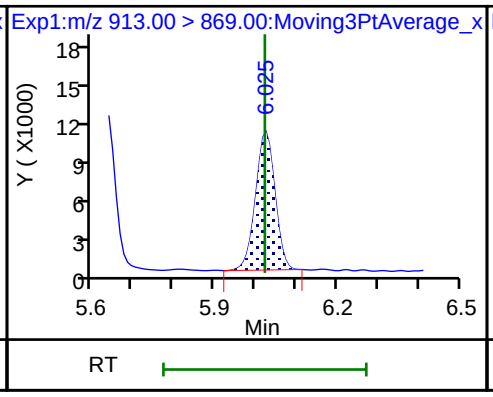
64 Perfluorohexadecanoic acid



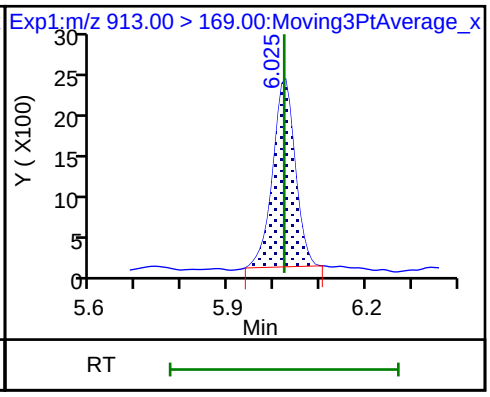
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

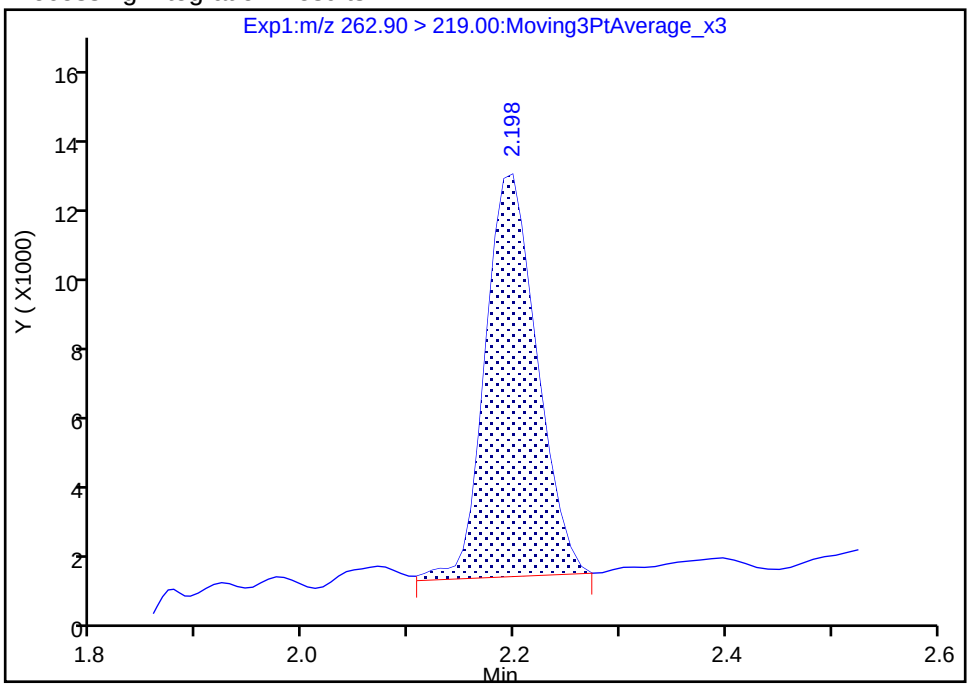
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d				
Injection Date:	02-Jun-2020 15:33:57	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

3 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

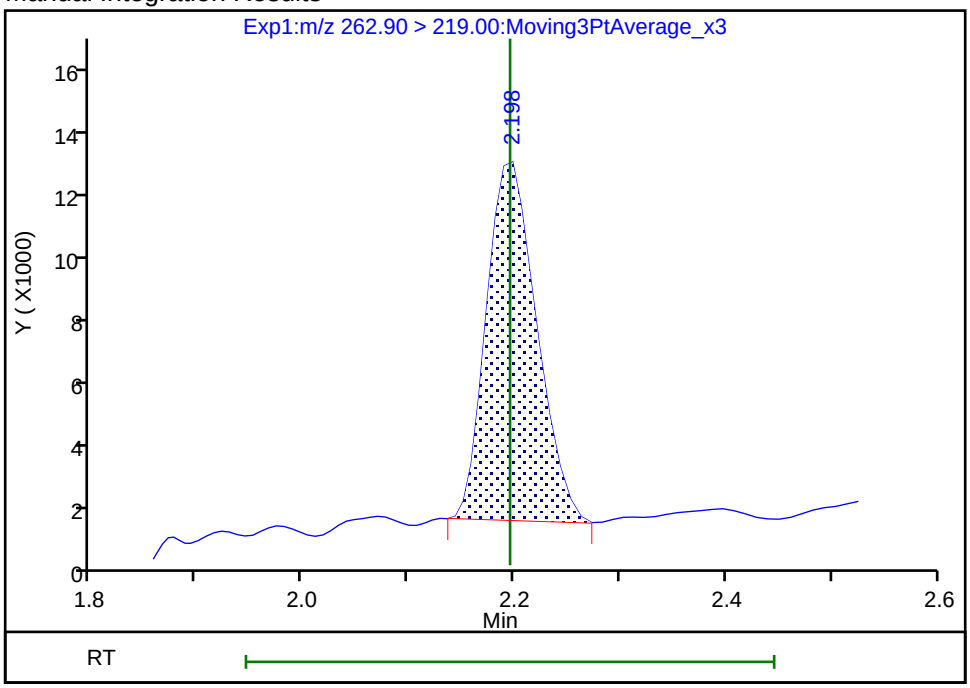
Processing Integration Results

RT: 2.20
Area: 37975
Amount: 0.055948
Amount Units: ng/ml



Manual Integration Results

RT: 2.20
Area: 36384
Amount: 0.053965
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:44:44

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

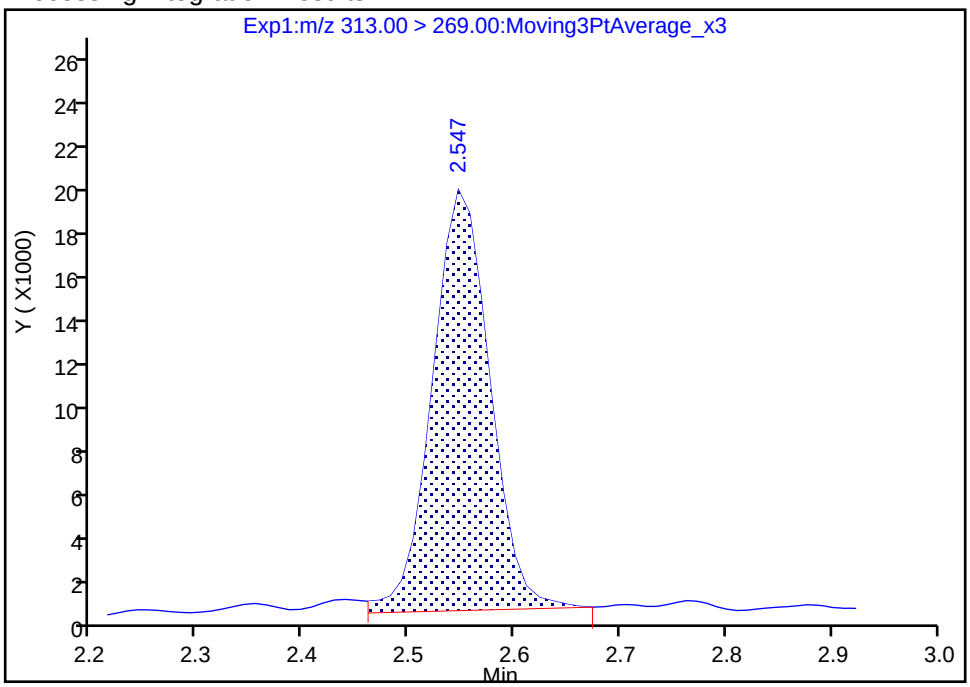
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d				
Injection Date:	02-Jun-2020 15:33:57	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

11 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

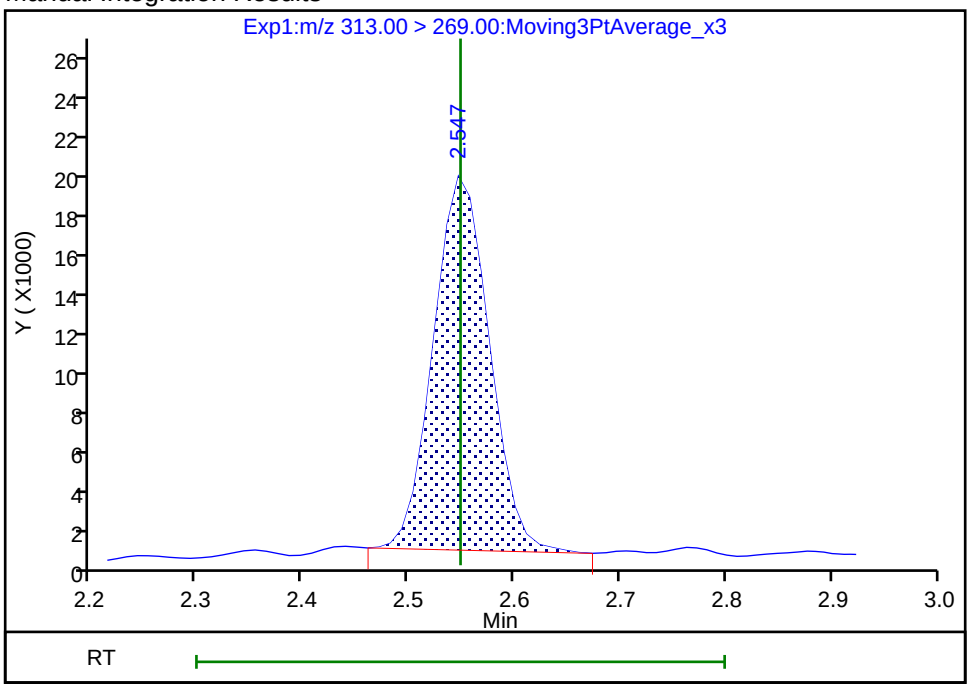
Processing Integration Results

RT: 2.55
Area: 71252
Amount: 0.050810
Amount Units: ng/ml



Manual Integration Results

RT: 2.55
Area: 67912
Amount: 0.048760
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:44:58

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

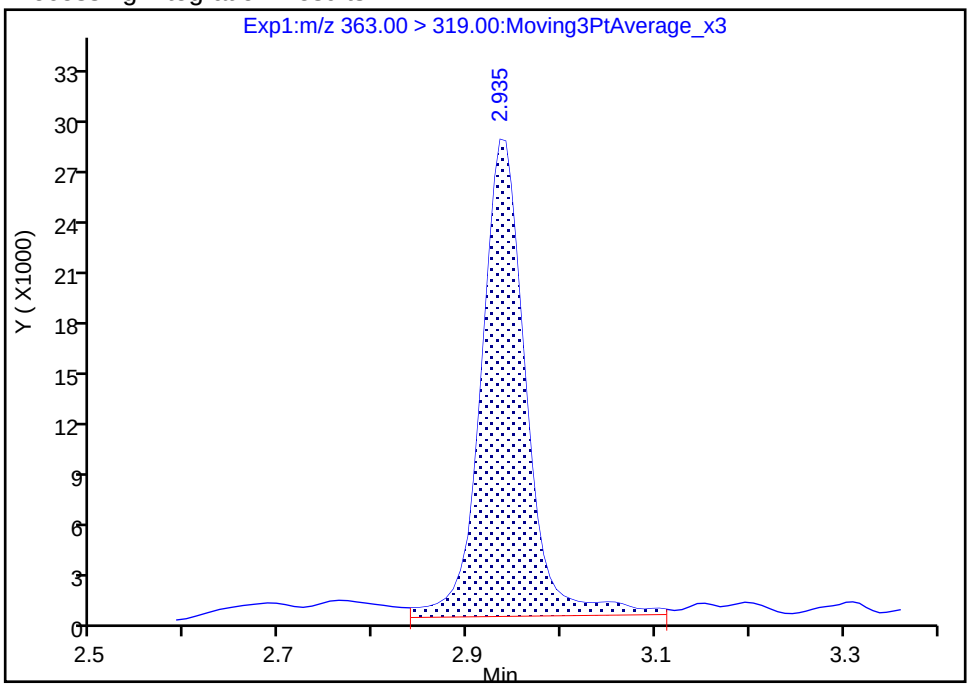
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d				
Injection Date:	02-Jun-2020 15:33:57	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

18 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

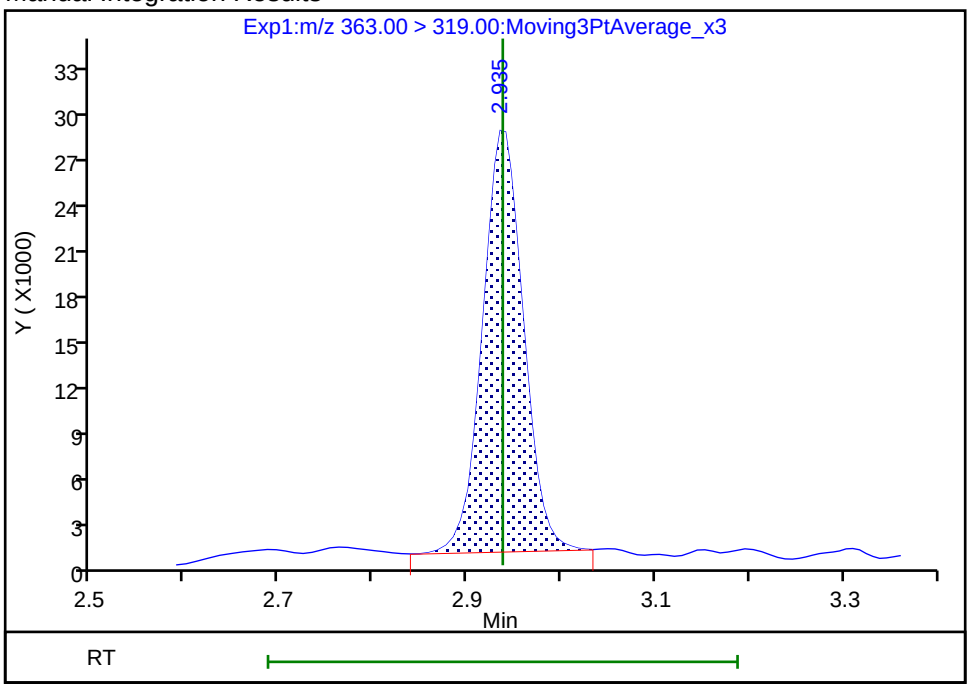
Processing Integration Results

RT: 2.93
Area: 92660
Amount: 0.056832
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 82859
Amount: 0.051709
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:45:28

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

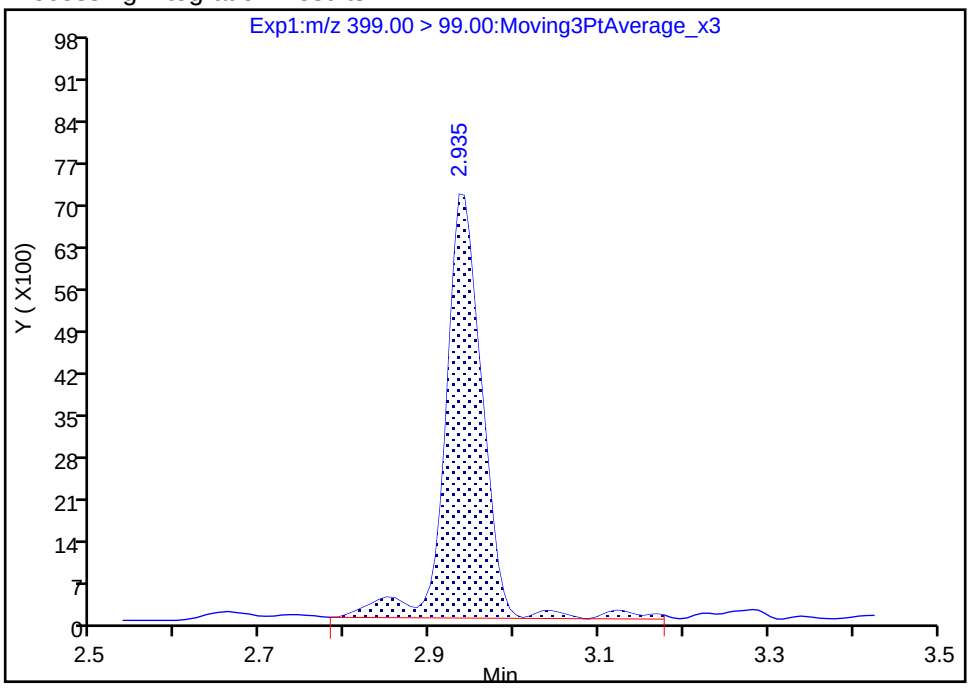
Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d
Injection Date: 02-Jun-2020 15:33:57 Instrument ID: A9
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTRLCMS02 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

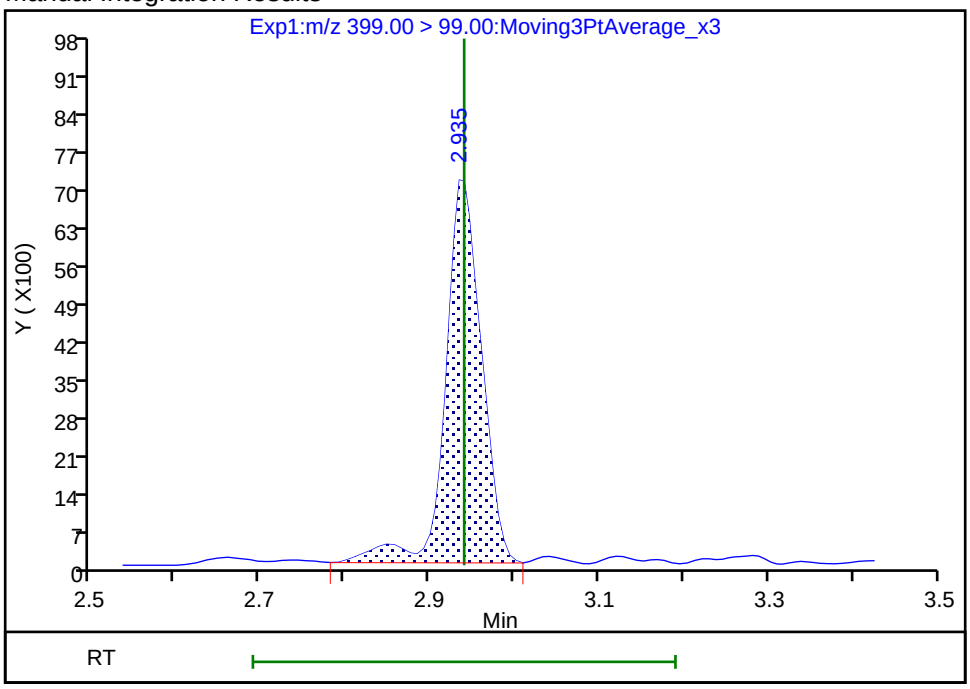
Processing Integration Results

RT: 2.93
Area: 21789
Amount: 0.046333
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 20988
Amount: 0.046333
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:45:17
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

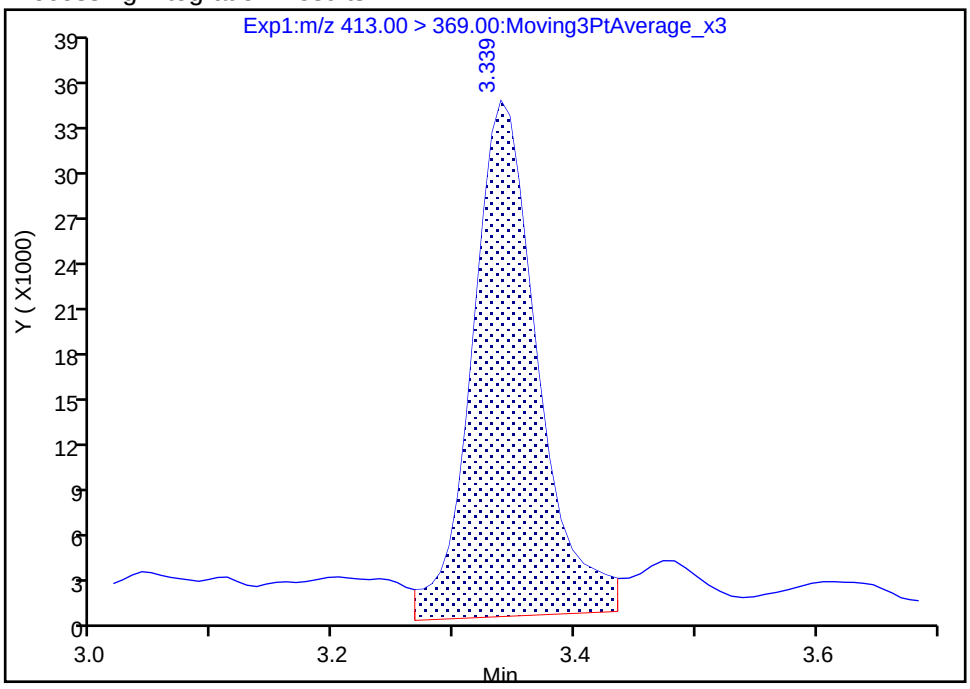
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d				
Injection Date:	02-Jun-2020 15:33:57	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

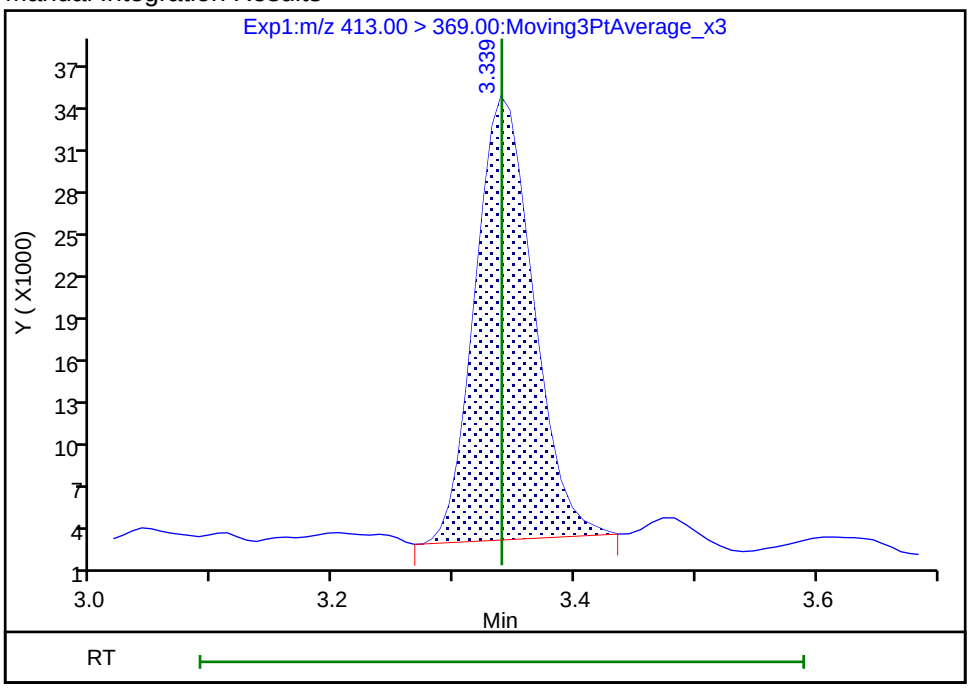
Processing Integration Results

RT: 3.34
Area: 123609
Amount: 0.063589
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 103142
Amount: 0.054705
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:45:41
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

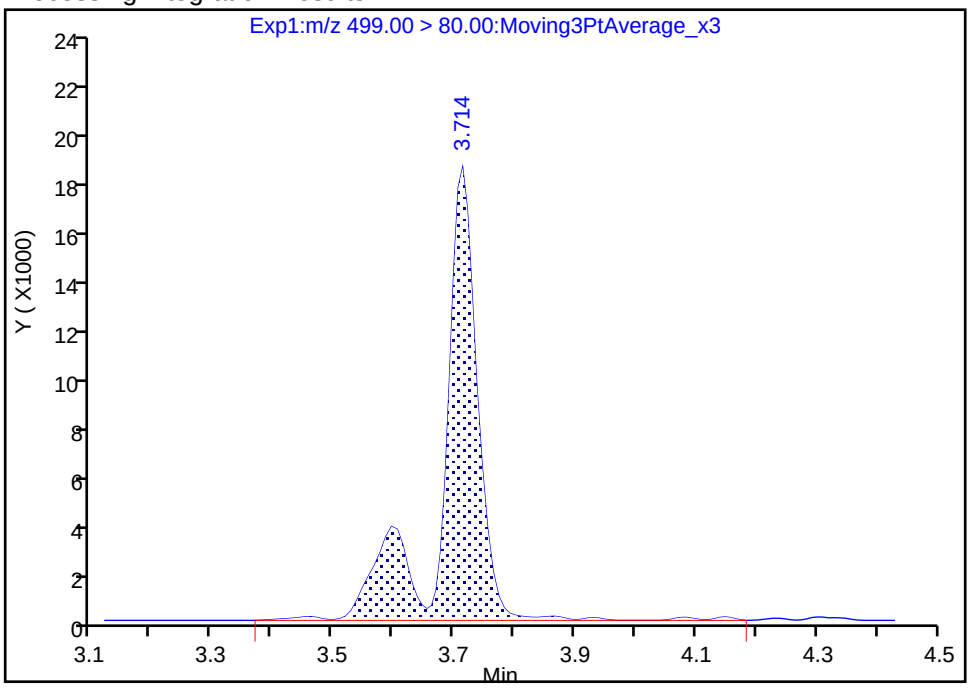
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d				
Injection Date:	02-Jun-2020 15:33:57	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

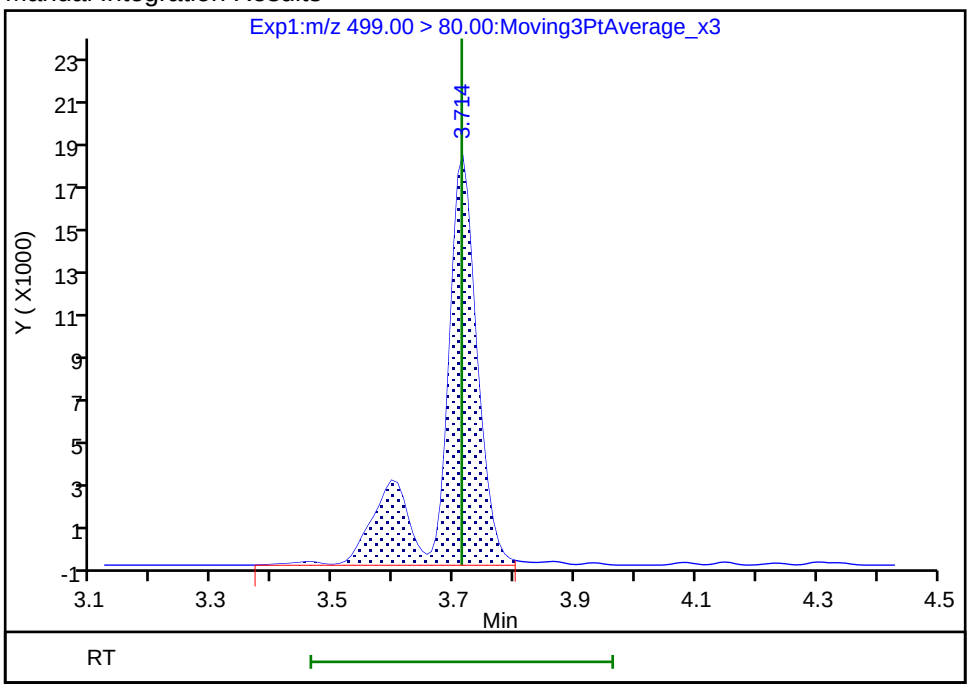
Processing Integration Results

RT: 3.71
Area: 75759
Amount: 0.049087
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 74349
Amount: 0.048309
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:45:54

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

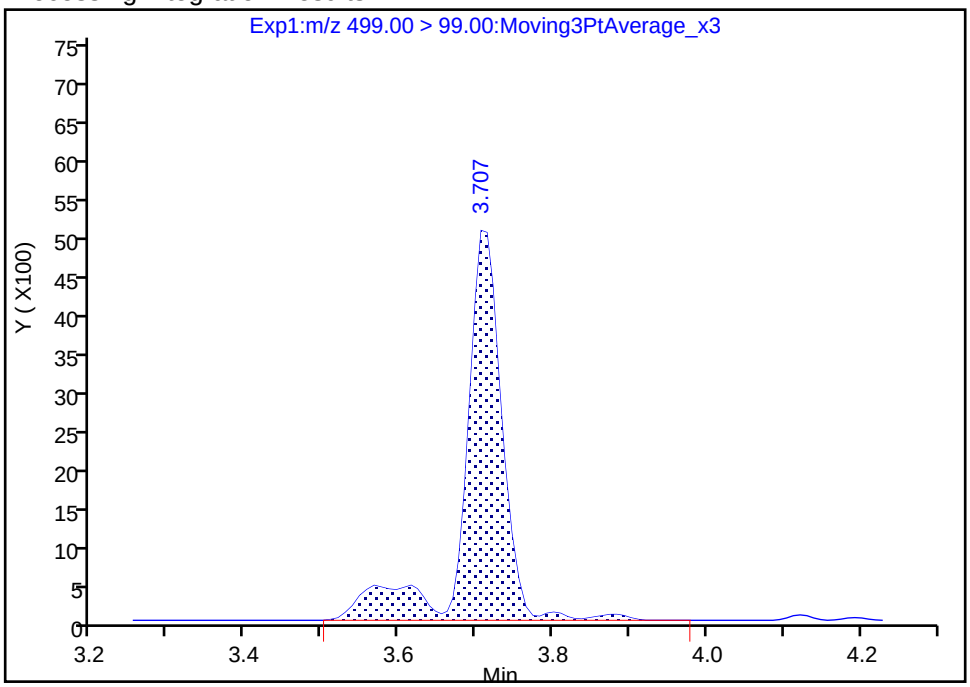
Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d
Injection Date: 02-Jun-2020 15:33:57 Instrument ID: A9
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTRLCMS02 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

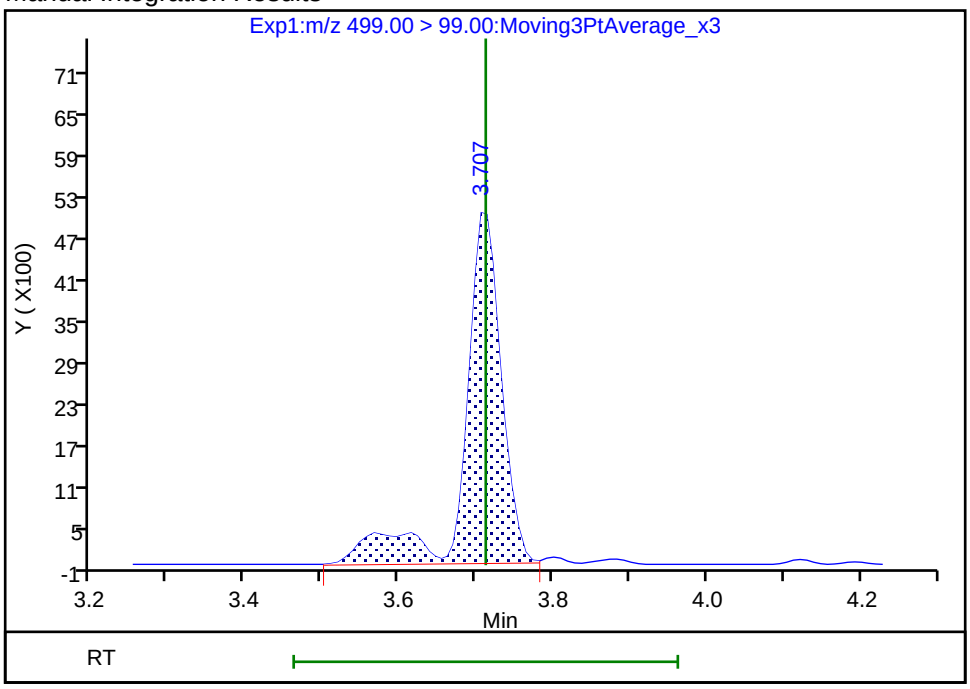
Processing Integration Results

RT: 3.71
Area: 17410
Amount: 0.049087
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 16919
Amount: 0.048309
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:46:01
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

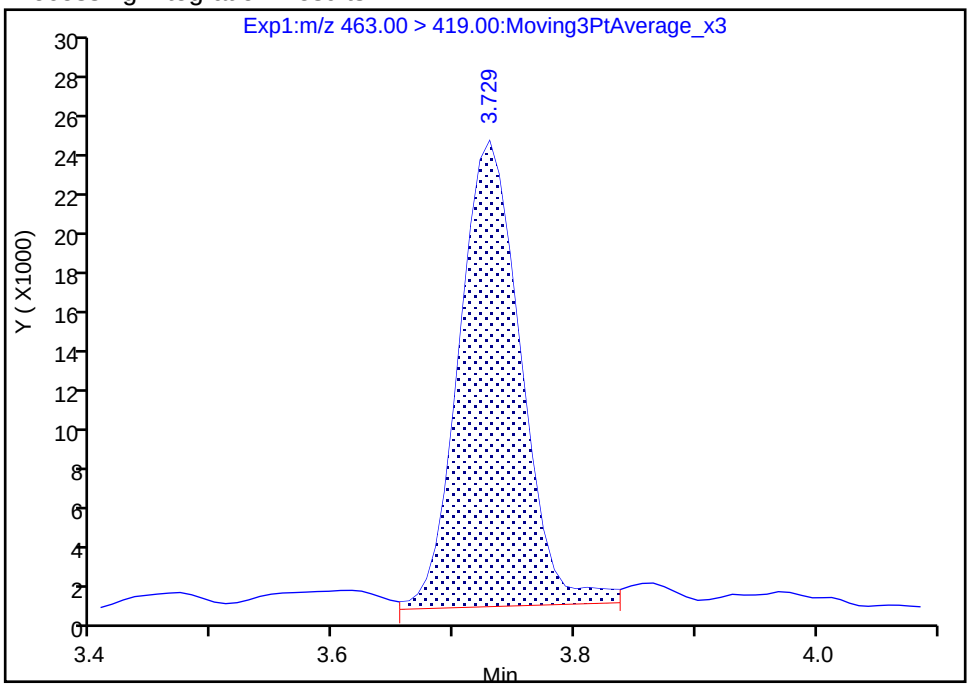
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d				
Injection Date:	02-Jun-2020 15:33:57	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

30 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

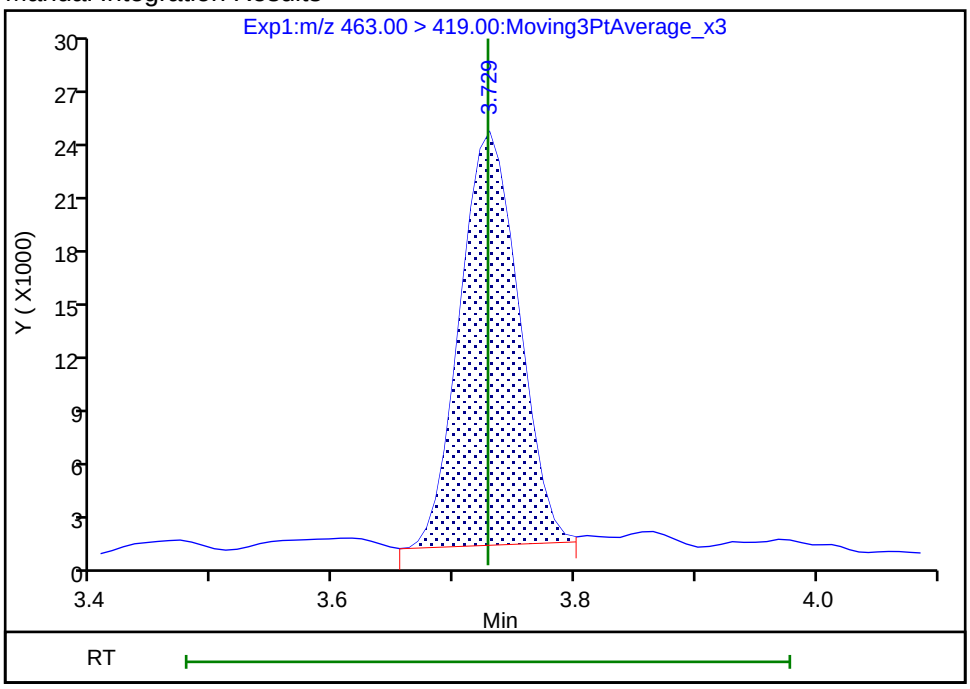
Processing Integration Results

RT: 3.73
Area: 83045
Amount: 0.051520
Amount Units: ng/ml



Manual Integration Results

RT: 3.73
Area: 77744
Amount: 0.048688
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:46:13

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

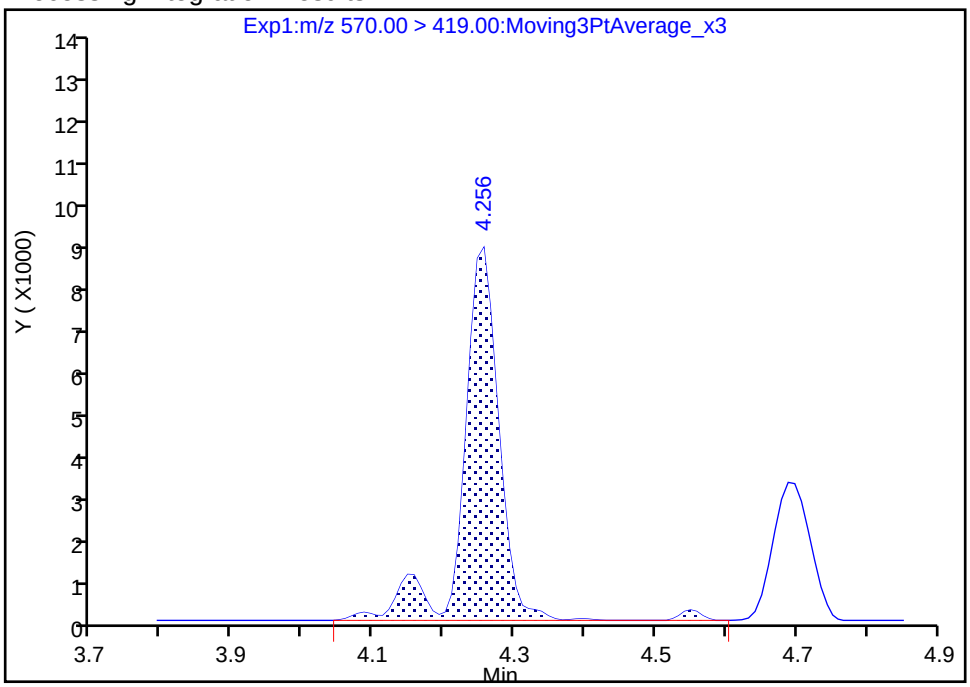
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d				
Injection Date:	02-Jun-2020 15:33:57	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

40 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

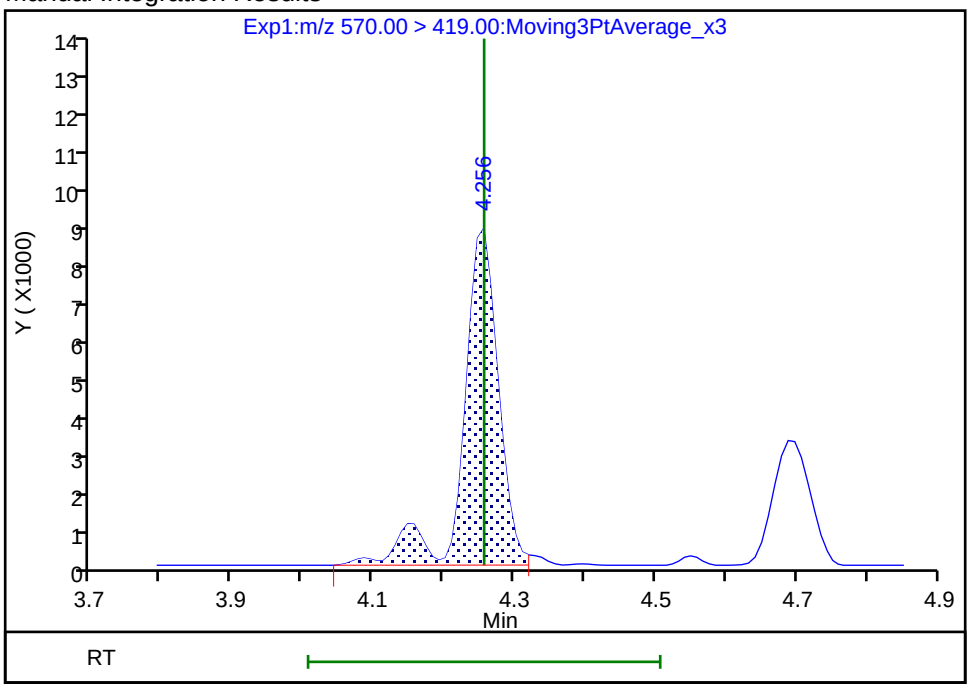
Processing Integration Results

RT: 4.26
Area: 31095
Amount: 0.050405
Amount Units: ng/ml



Manual Integration Results

RT: 4.26
Area: 30077
Amount: 0.048986
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:46:36
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

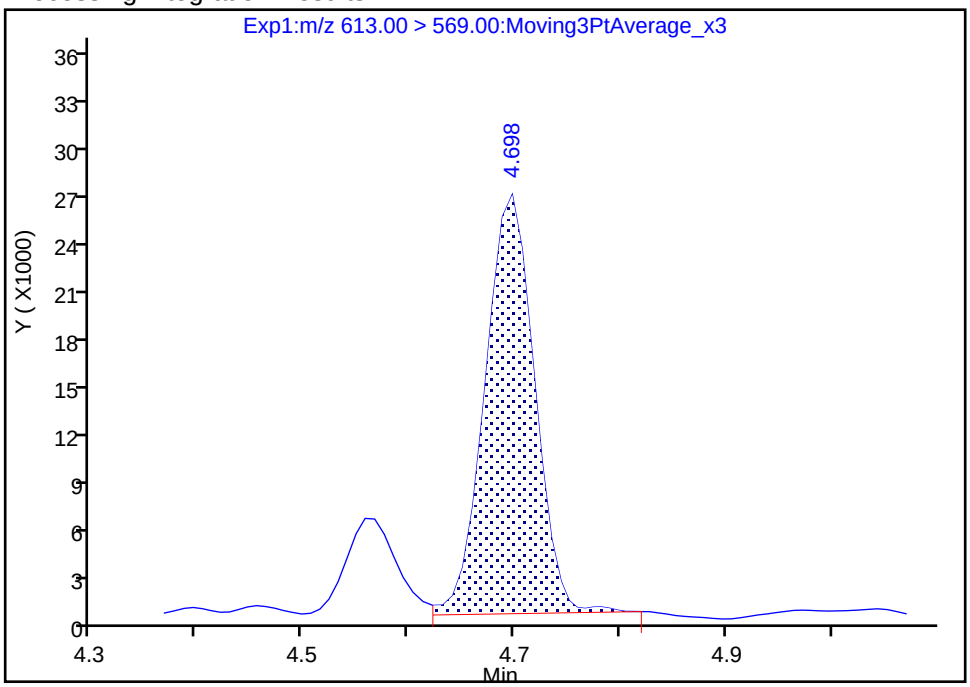
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_007.d				
Injection Date:	02-Jun-2020 15:33:57	Instrument ID:	A9		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

52 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

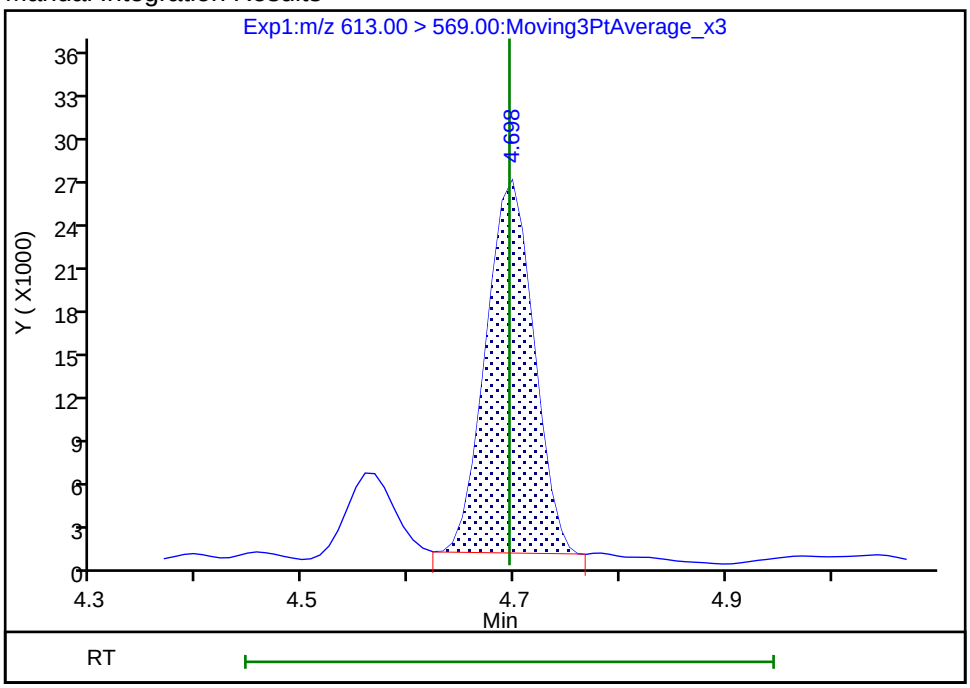
Processing Integration Results

RT: 4.70
Area: 84881
Amount: 0.056116
Amount Units: ng/ml



Manual Integration Results

RT: 4.70
Area: 80598
Amount: 0.053719
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:46:54

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_008.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 02-Jun-2020 15:43:19 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD3 (19)
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 02-Jun-2020 20:32:41 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1042

First Level Reviewer: adamst Date: 02-Jun-2020 19:51:36
Ratio Calibration: Average of Initial Calibration

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	1.889	1.890	-0.001	0.566	4833826	2.40		95.9	7856	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.889	1.893	-0.004	1.000	236032	0.2547		102	227	
D 4 13C5 PFPeA										
267.90 > 223.00	2.191	2.193	-0.002	0.656	1733086	2.38		95.2	6668	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.191	2.196	-0.005	1.000	174386	0.2410		96.4	35.1	
D 6 13C3 PFBS										
301.90 > 80.00	2.216	2.224	-0.008	0.664	2021862	2.16		92.9	5474	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.216	2.224	-0.008	1.000	209782	0.2220	Target=2.39	100	179	
298.90 > 99.00	2.216	2.224	-0.008	1.000	85064		2.47(1.20-3.59)	100	200	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.505	2.511	-0.006	1.000	128993	0.2533		108	1413	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.505	2.511	-0.006	0.750	414577	2.11		90.2	4244	
D 10 13C2 PFHxA										
315.00 > 270.00	2.548	2.549	-0.001	0.763	3584703	2.48		99.3	5992	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.548	2.549	-0.001	1.000	351851	0.2366	Target=15.64	94.6	173	
313.00 > 119.00	2.548	2.549	-0.001	1.000	23657		14.87(7.82-23.46)	94.6	102	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.559	2.566	-0.007	1.155	214610	0.2446	Target=1.75	104	1215	
349.00 > 99.00	2.559	2.566	-0.007	1.155	118310		1.81(0.88-2.63)	104	893	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.664	2.664	0.0	0.798	2210433	2.39		95.7	3961	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.664	2.666	-0.002	1.000	121913	0.2381		95.3	1249	
D 15 13C4 PFHpA										
367.00 > 322.00	2.929	2.935	-0.006	0.877	3153780	2.42		96.9	5260	
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.935	2.937	-0.002	1.002	415119	0.2519	Target=4.39	101	176	
363.00 > 169.00	2.935	2.937	-0.002	1.002	97473		4.26(2.20-6.59)	101	390	
D 17 18O2 PFHxS										
403.00 > 84.00	2.941	2.941	-0.001	0.881	2841080	2.30		97.4	3464	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.935	2.938	-0.003	0.998	304284	0.2148	Target=3.04	94.4	945	
399.00 > 99.00	2.935	2.938	-0.003	0.998	101310		3.00(1.52-4.56)	94.4	500	M
19 DONA										
377.00 > 251.00	2.981	2.986	-0.005	0.803	715999	0.2449	Target=2.17	104	2232	
377.00 > 85.00	2.981	2.986	-0.005	0.803	332105		2.16(1.09-3.26)	104	1438	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.317	3.318	-0.001	0.994	397093	2.40		101	3255	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.317	3.321	-0.004	1.000	87894	0.2361		99.6	368	
$ 21 13C8 PFOA										
421.00 > 376.00	3.331	3.333	-0.002	0.998	3873988	2.48		101	9061	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.331	3.334	-0.003	0.897	378675	0.2334	Target=3.82	98.1	1356	
449.00 > 99.00	3.331	3.334	-0.003	0.897	97762		3.87(1.91-5.72)	98.1	438	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.338	3.339	-0.001	1.000	516432	0.2579	Target=2.82	103	48.3	
413.00 > 169.00	3.338	3.339	-0.001	1.000	161228		3.20(1.41-4.23)	103	489	
D 26 13C4 PFOA										
417.00 > 372.00	3.338	3.339	-0.001	1.000	3980648	2.49		99.7	4176	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.339	-0.001		4181467	2.50			8902	
$ 27 13C8 PFOS										
507.00 > 99.00	3.706	3.709	-0.003	1.110	848180	2.32		97.2	1688	
D 31 13C4 PFOS										
503.00 > 80.00	3.713	3.714	-0.001	1.112	3666320	2.33		97.4	5884	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.713	3.713	0.0	1.000	380750	0.2276	Target=4.25	98.1	734	
499.00 > 99.00	3.706	3.713	-0.007	0.998	92123		4.13(2.13-6.38)	98.1	514	M
30 Perfluorononanoic acid										
463.00 > 419.00	3.721	3.728	-0.007	1.000	422351	0.2550	Target=5.46	102	118	
463.00 > 169.00	3.721	3.728	-0.007	1.000	73680		5.73(2.73-8.19)	102	535	
D 29 13C5 PFNA										
468.00 > 423.00	3.721	3.728	-0.007	1.115	3802334	2.42		96.9	5972	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.911	3.920	-0.009	1.053	418477	0.2374		102	1291	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.058	4.061	-0.003	1.093	248372	0.2387	Target=4.97	99.5	1696	
549.00 > 99.00	4.058	4.061	-0.003	1.093	52056		4.77(2.48-7.45)	99.5	262	
D 36 13C8 FOSA										
506.00 > 78.00	4.085	4.087	-0.002	1.224	1572619	2.52		101	2894	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.085	4.087	-0.002	1.000	481550	0.2351		94.1	2192	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.085	4.088	-0.003	1.000	479598	0.2596	Target=14.66	104	206	
513.00 > 169.00	4.085	4.088	-0.003	1.000	31245		15.35(7.33-21.99)	104	231	
D 33 13C2 PFDA										
515.00 > 470.00	4.085	4.088	-0.003	1.224	4615017	2.51		101	6948	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.085	4.091	-0.006	0.998	101000	0.2377		99.2	849	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.094	4.091	0.003	1.226	462117	2.35		98.1	4023	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.246	4.252	-0.006	1.272	1789026	2.45		97.9	3501	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.255	4.257	-0.002	1.002	159009	0.2396		95.8	53.9	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.377	4.383	-0.006	1.179	286267	0.2316	Target=4.49	96.1	573	
599.00 > 99.00	4.377	4.383	-0.006	1.179	67126		4.26(2.25-6.74)	96.1	400	
D 46 13C2 PFUnA										
565.00 > 520.00	4.403	4.407	-0.004	1.319	3903434	2.43		97.3	7003	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.403	4.407	-0.004	1.000	303842	0.2520	Target=10.82	101	112	
563.00 > 169.00	4.411	4.407	0.004	1.002	27910		10.89(5.41-16.23)	101	212	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.411	4.413	-0.002	1.321	1336920	2.41		96.3	1466	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.420	4.423	-0.003	1.002	118870	0.2481		99.2	279	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.540	4.543	-0.003	1.223	610719	0.2547		108	1839	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.549	4.549	0.0	1.362	2246515	12.3		98.3	5239	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.557	4.560	-0.003	1.002	60369	0.2393		95.7	325	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.566	4.568	-0.002	1.368	853622	2.31		92.3	229	
50 NMeFOSA										
512.00 > 169.00	4.566	4.573	-0.007	1.000	67763	0.2249		90.0	403	
D 56 13C2 PFDoA										
615.00 > 570.00	4.687	4.692	-0.005	1.404	3634540	2.39		95.6	7701	
52 Perfluorododecanoic acid										
613.00 > 569.00	4.687	4.695	-0.008	1.000	403947	0.2650	Target=8.20	106	118	
613.00 > 169.00	4.687	4.695	-0.008	1.000	55065		7.34(4.10-12.30)	106	374	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.706	4.711	-0.005	1.150	91075	0.2403		99.7	738	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.715	4.720	-0.005	1.412	2227362	12.1		96.7	5943	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.734	4.734	0.0	1.004	66639	0.2544		102	348	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.743	4.745	-0.002		641863	2.30		92.2	1331	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.750	4.752	-0.002	1.002	83429	0.2538		102	449	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.921	4.923	-0.002	1.325	32707	0.2371	Target=0.67	98.0	310	
699.00 > 99.00	4.912	4.923	-0.011	1.323	46971		0.70(0.33-1.00)	98.0	509	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.954	4.955	-0.001	1.057	275304	0.2652	Target=5.48	106	184	
663.00 > 169.00	4.954	4.955	-0.001	1.057	47538		5.79(2.74-8.23)	106	511	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.188	5.193	-0.005	1.554	3653011	2.47		98.9	7279	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.188	5.195	-0.007	1.000	55916	0.2252	Target=1.49	90.1	477	
713.00 > 219.00	5.188	5.195	-0.007	1.000	41396		1.35(0.75-2.24)	90.1	424	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.618	5.621	-0.003	1.683	3220004	2.25		89.9	4989	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.618	5.621	-0.003	1.000	322403	0.2609	Target=5.24	104	66.6	
813.00 > 169.00	5.618	5.621	-0.003	1.000	58041		5.55(2.62-7.87)	104	568	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.017	6.021	-0.004	1.071	190402	0.2602	Target=4.86	104	64.1	
913.00 > 169.00	6.017	6.021	-0.004	1.071	36626		5.20(2.43-7.29)	104	213	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00019 Amount Added: 1.00 Units: mL

Report Date: 02-Jun-2020 20:32:42 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_008.d

Injection Date: 02-Jun-2020 15:43:19 Instrument ID: A9

Lims ID: IC L3 Full

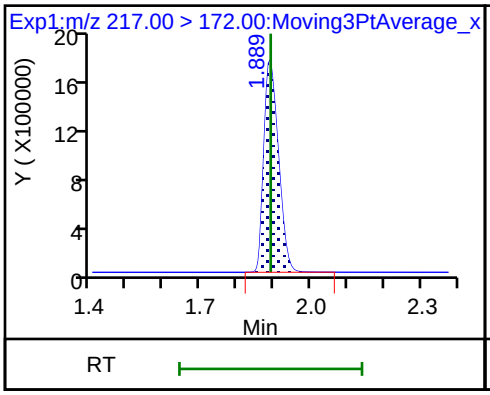
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 3 Worklist Smp#: 4

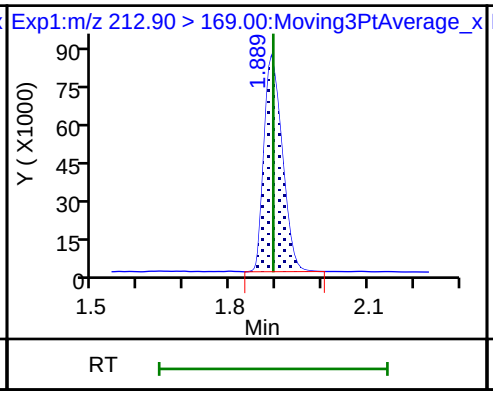
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

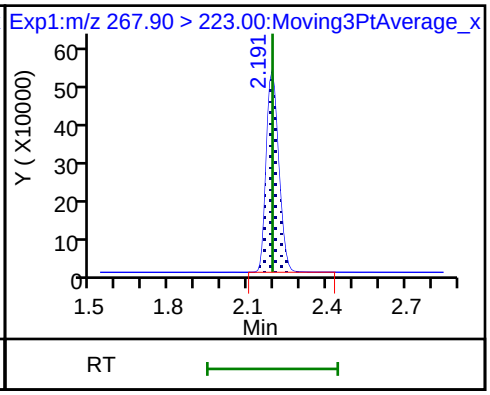
D 1 13C4 PFBA



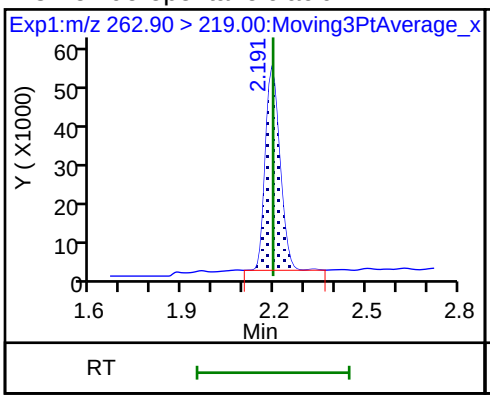
2 Perfluorobutanoic acid



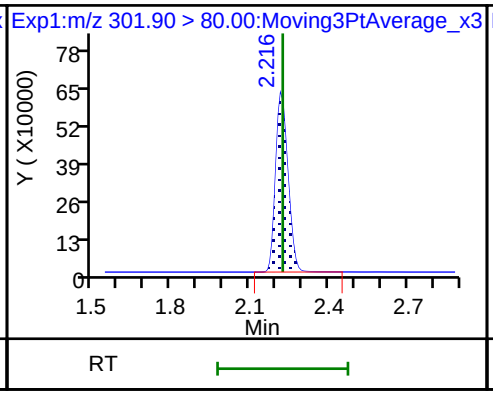
D 4 13C5 PFPeA



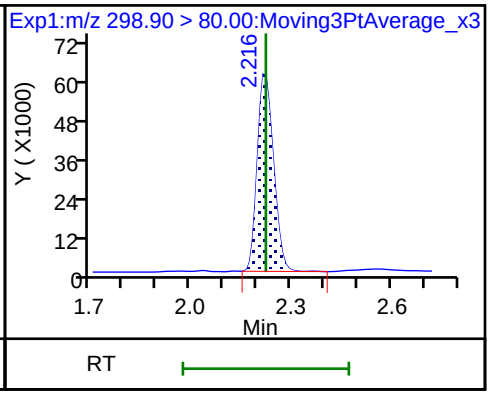
3 Perfluoropentanoic acid



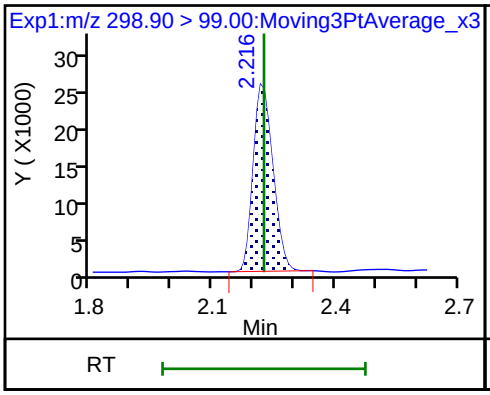
D 6 13C3 PFBS



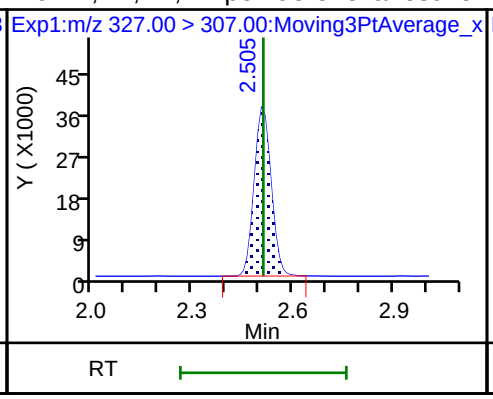
5 Perfluorobutanesulfonic acid



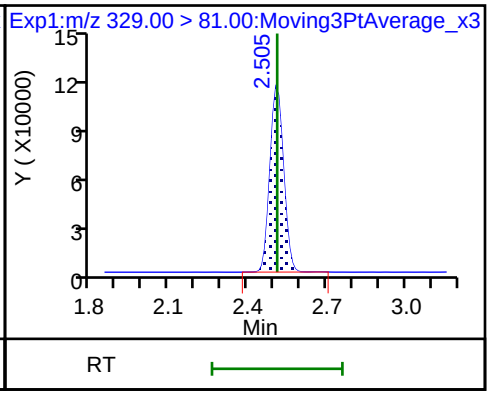
5 Perfluorobutanesulfonic acid



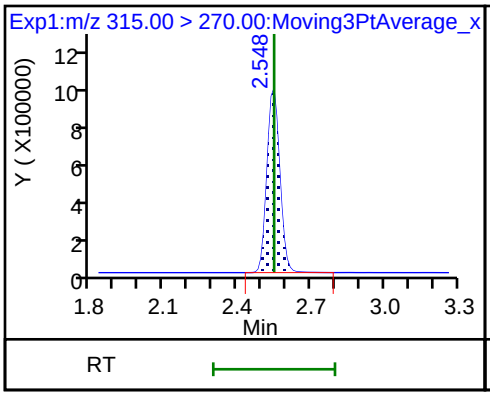
9 1H,1H,2H,2H-perfluorohexanesulfo



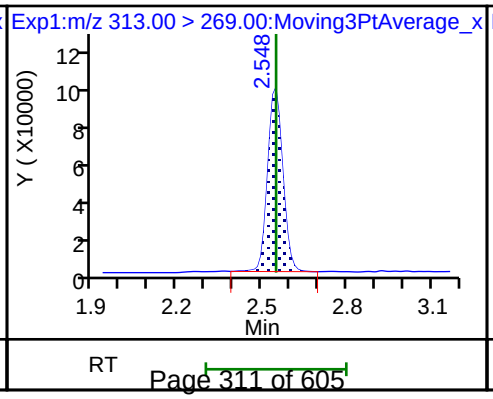
D 8 M2-4:2 FTS



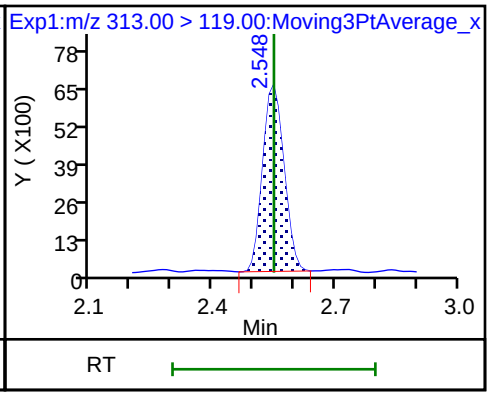
D 10 13C2 PFHxA



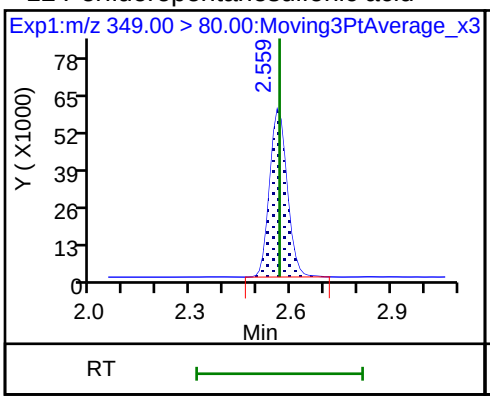
11 Perfluorohexanoic acid



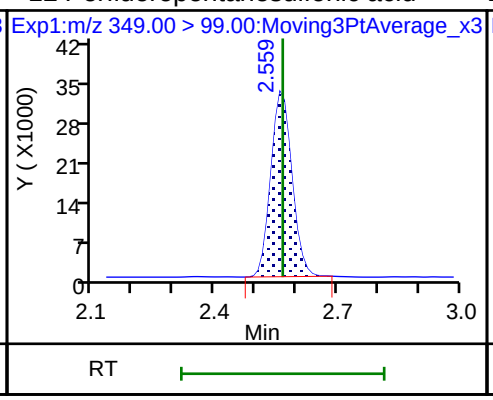
11 Perfluorohexanoic acid



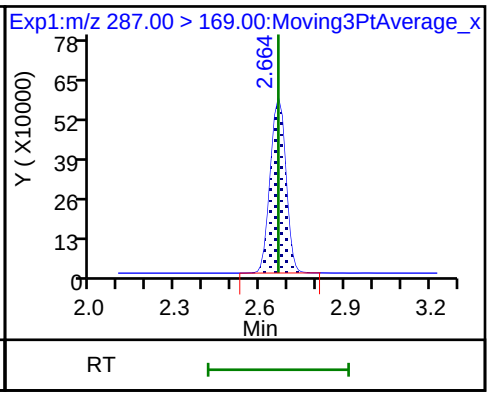
12 Perfluoropentanesulfonic acid



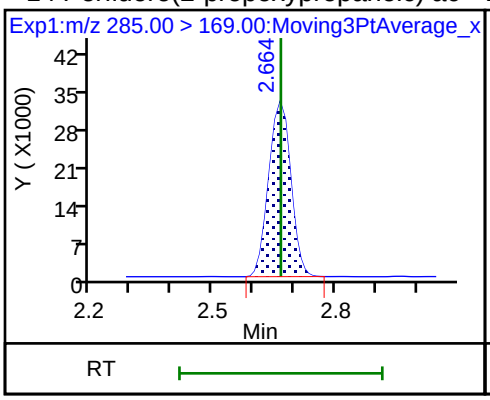
12 Perfluoropentanesulfonic acid



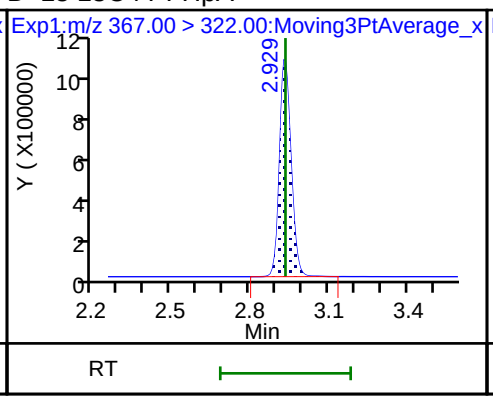
D 13 13C3 HFPO-DA



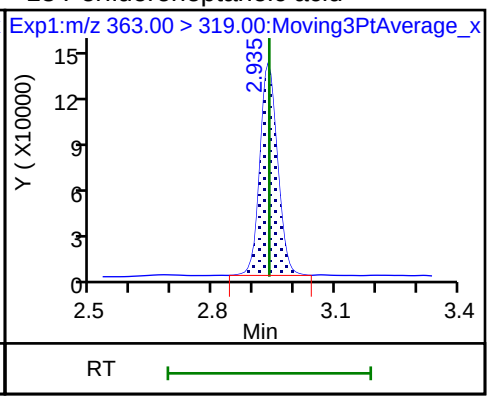
14 Perfluoro(2-propoxypropanoic) ac



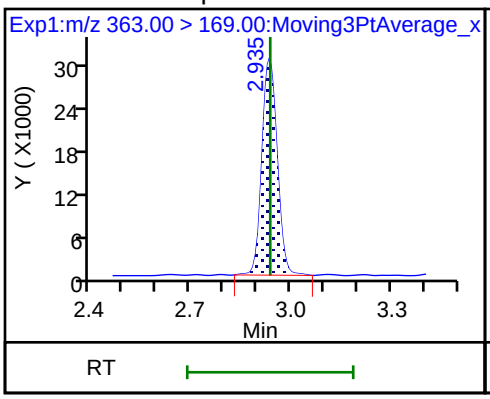
D 15 13C4 PFHpA



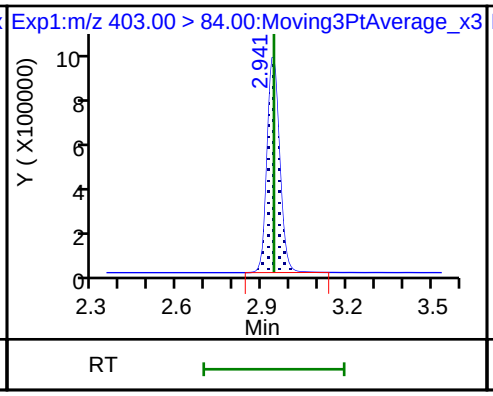
18 Perfluoroheptanoic acid



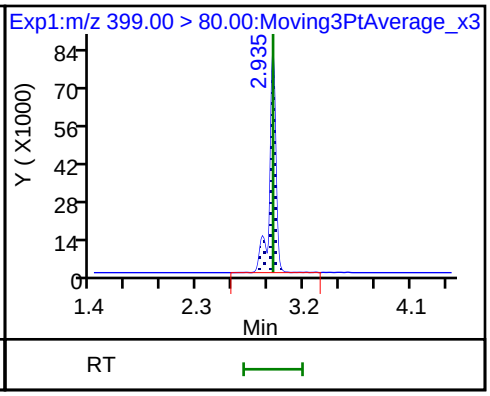
18 Perfluoroheptanoic acid



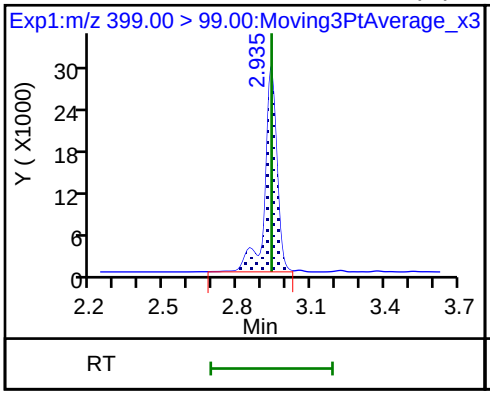
D 17 18O2 PFHxS



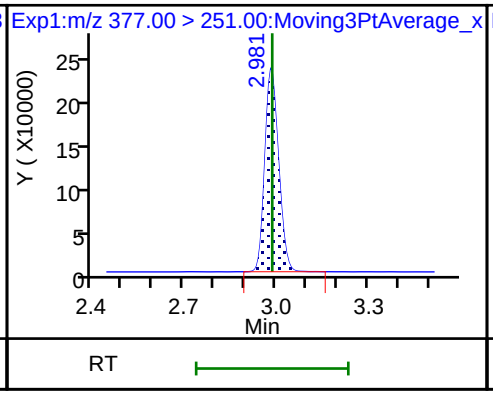
16 Perfluorohexanesulfonic acid



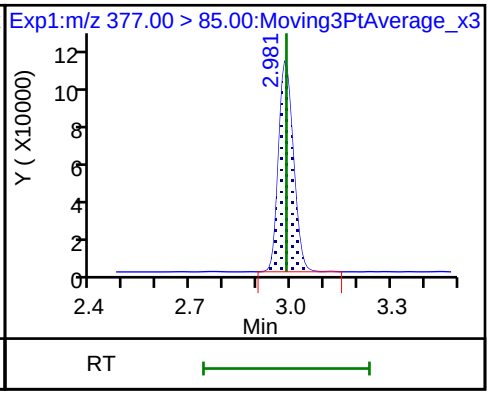
16 Perfluorohexanesulfonic acid (M)



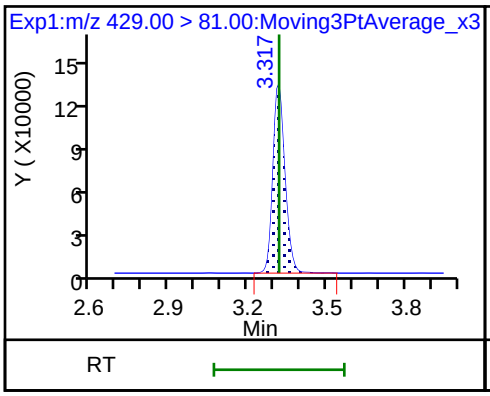
19 DONA



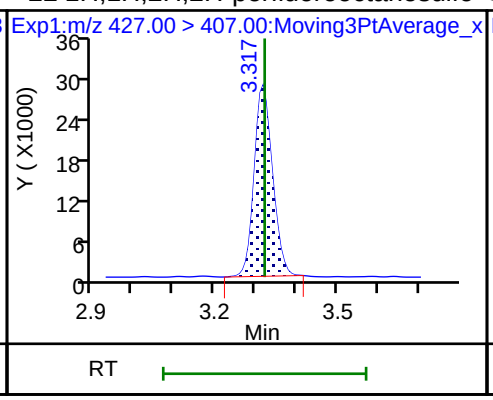
19 DONA



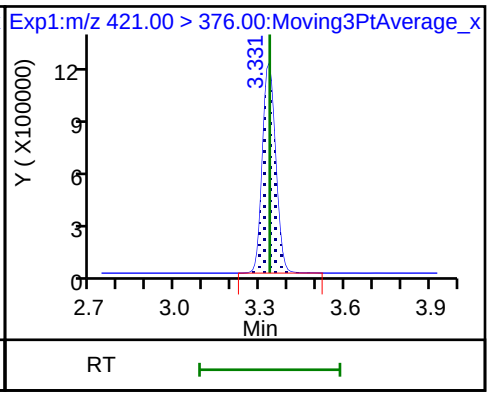
D 20 M2-6:2 FTS



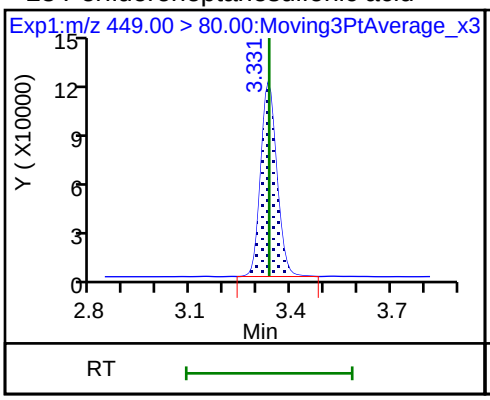
22 1H,1H,2H,2H-perfluorooctanesulfo



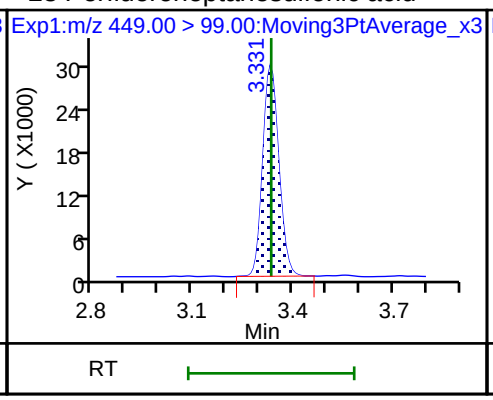
$ 21 13C8 PFOA



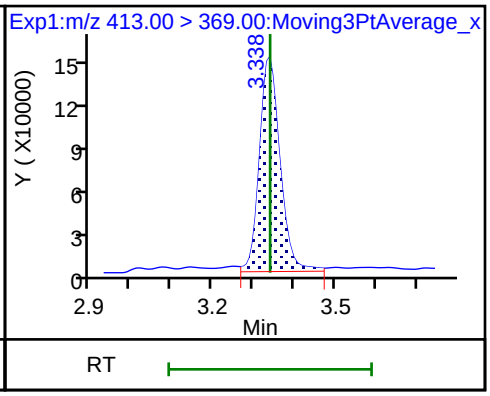
23 Perfluoroheptanesulfonic acid



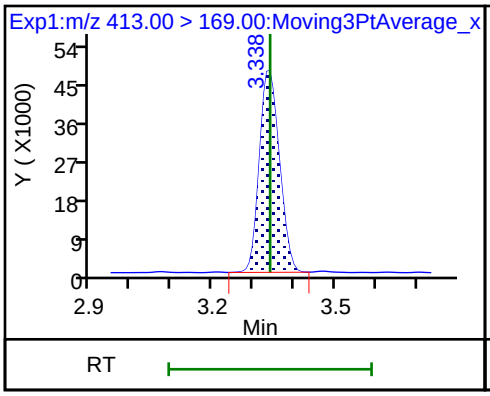
23 Perfluoroheptanesulfonic acid



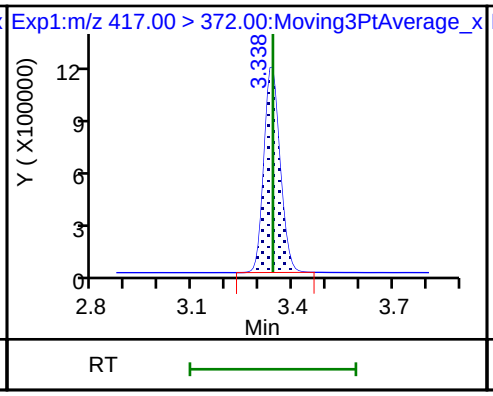
24 Perfluorooctanoic acid



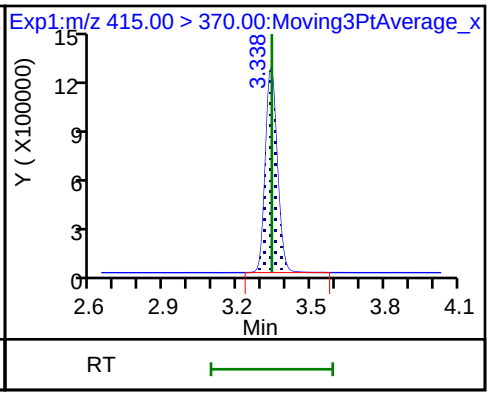
24 Perfluorooctanoic acid



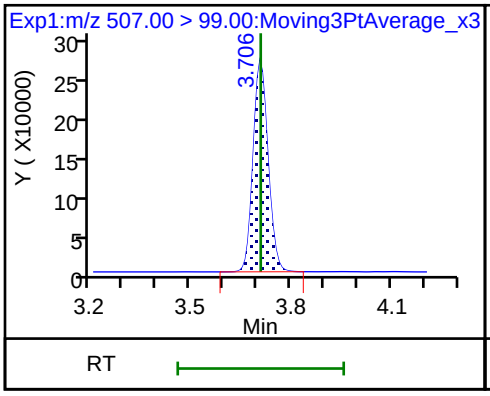
D 26 13C4 PFOA



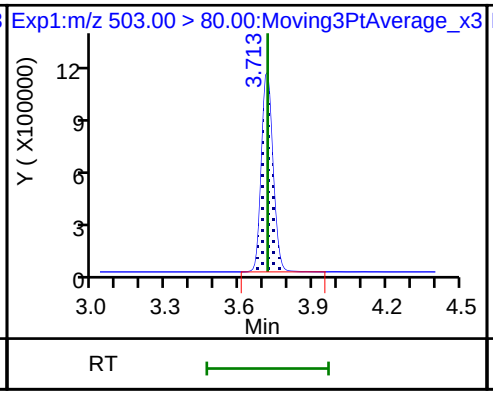
* 25 13C2 PFOA



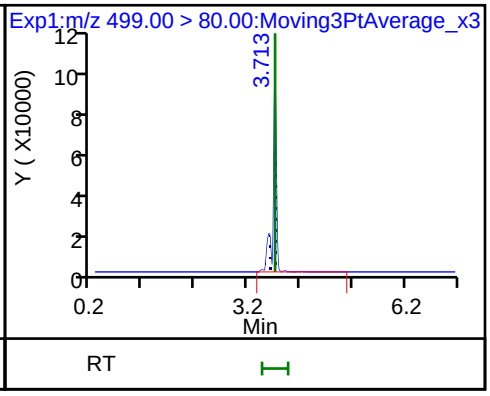
$ 27 13C8 PFOS



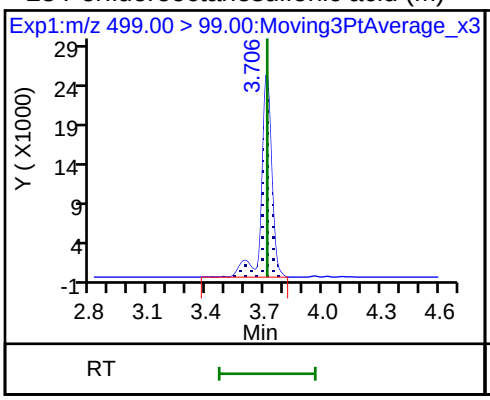
D 31 13C4 PFOS



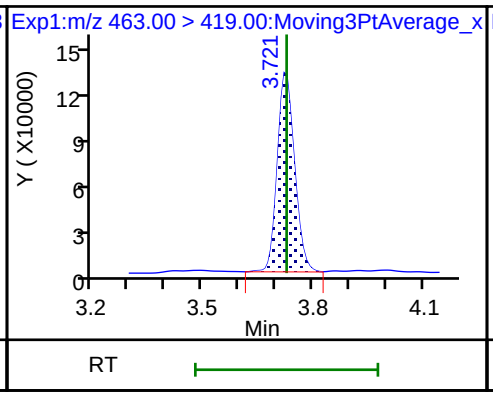
28 Perfluorooctanesulfonic acid



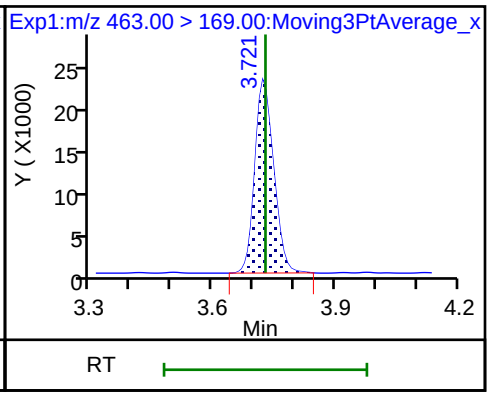
28 Perfluorooctanesulfonic acid (M)



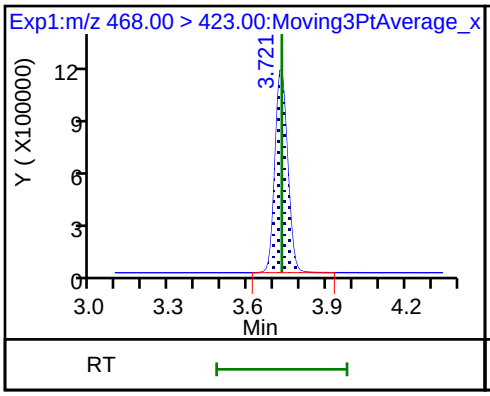
30 Perfluorononanoic acid



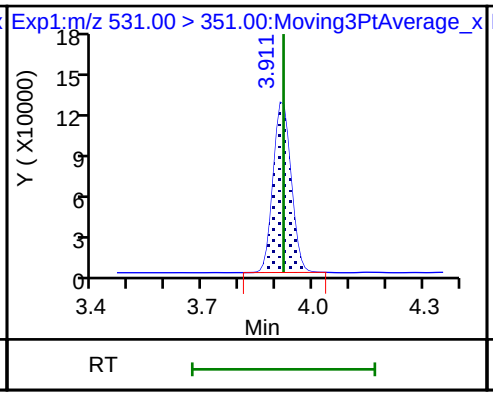
30 Perfluorononanoic acid



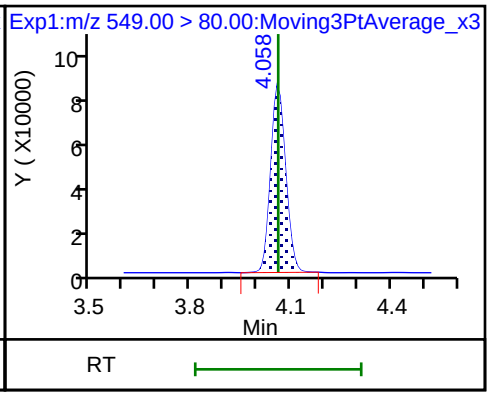
D 29 13C5 PFNA



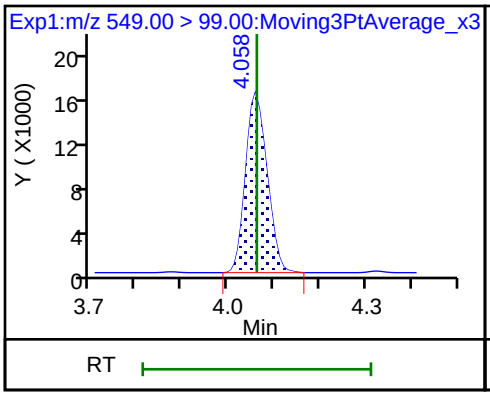
32 9-Chlorohexadecafluoro-3-oxanona



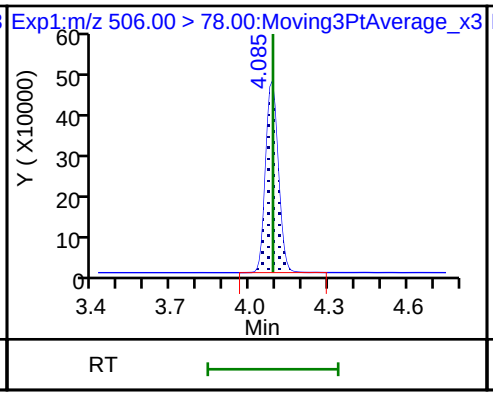
35 Perfluorononanesulfonic acid



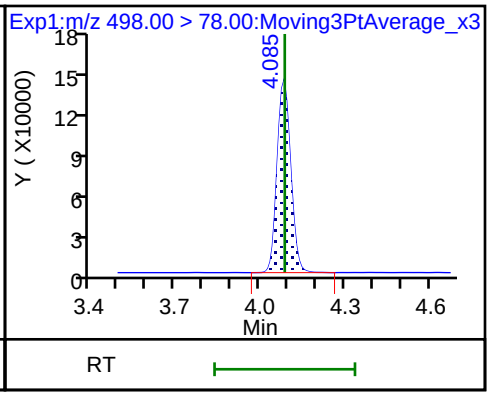
35 Perfluorononanesulfonic acid



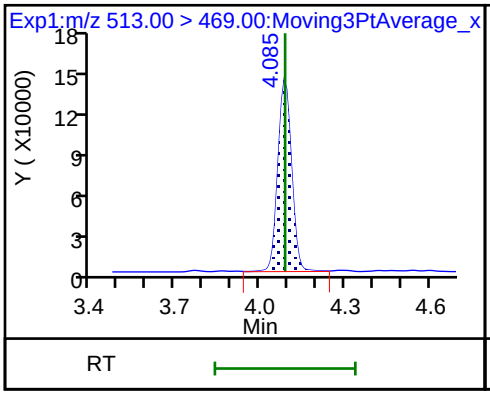
D 36 13C8 FOSA



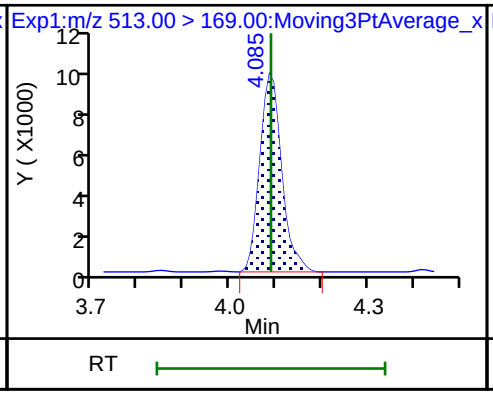
34 Perfluorooctanesulfonamide



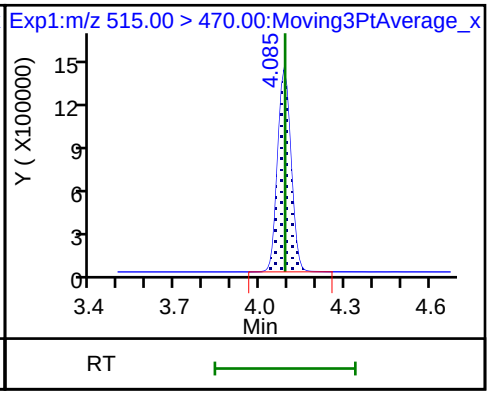
38 Perfluorodecanoic acid



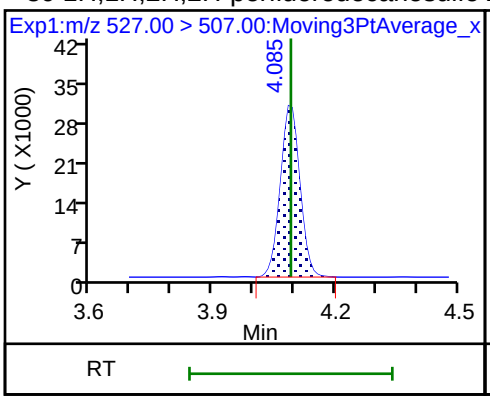
38 Perfluorodecanoic acid



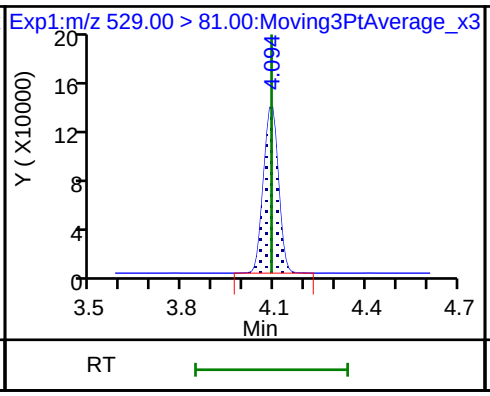
D 33 13C2 PFDA



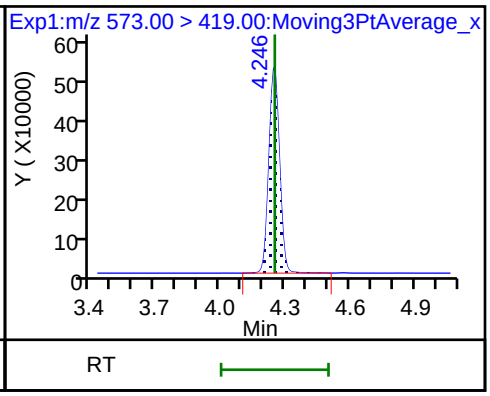
39 1H,1H,2H,2H-perfluorodecanesulfo



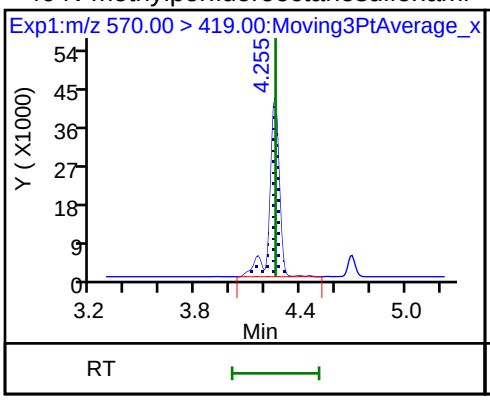
D 37 M2-8:2 FTS



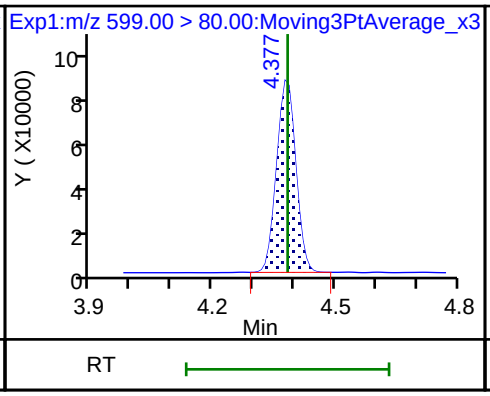
D 41 d3-NMeFOSAA



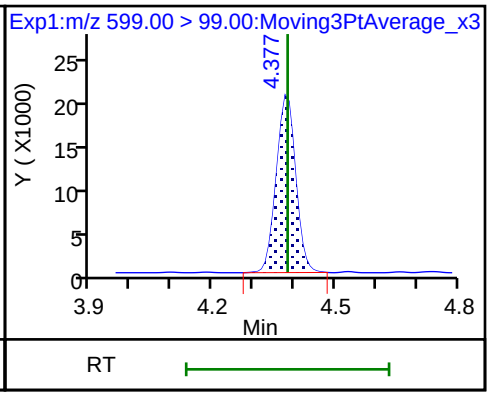
40 N-methylperfluorooctanesulfonami



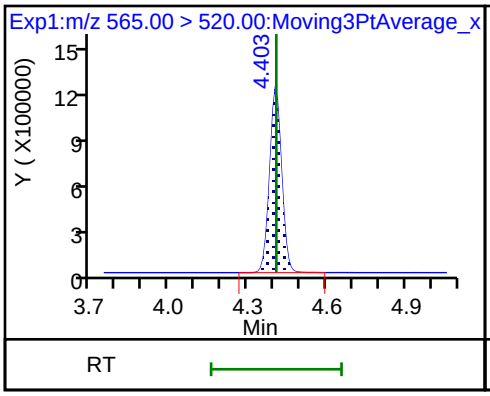
42 Perfluorodecanesulfonic acid



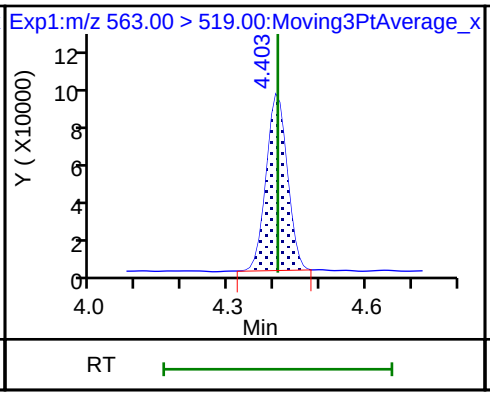
42 Perfluorodecanesulfonic acid



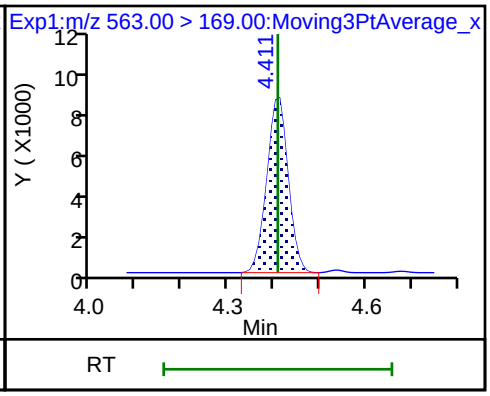
D 46 13C2 PFUnA



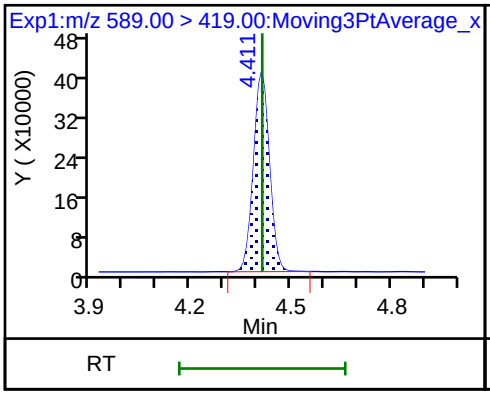
43 Perfluoroundecanoic acid



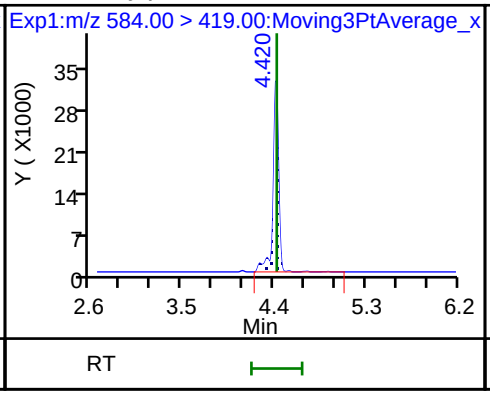
43 Perfluoroundecanoic acid



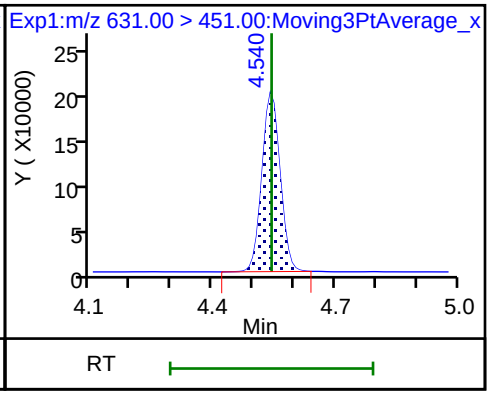
D 45 d5-NEtFOSAA



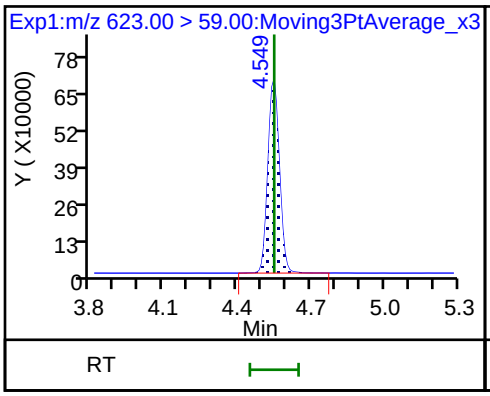
44 N-ethylperfluorooctanesulfonamid



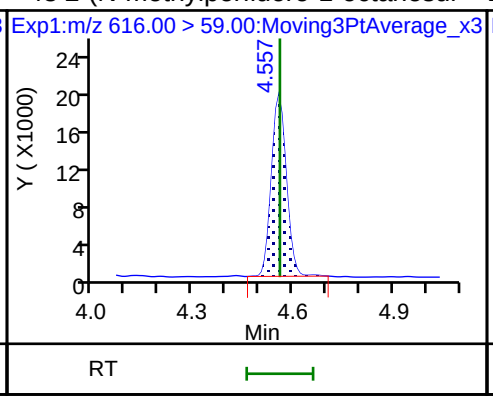
51 11-Chloroeicosafluoro-3-oxaundec



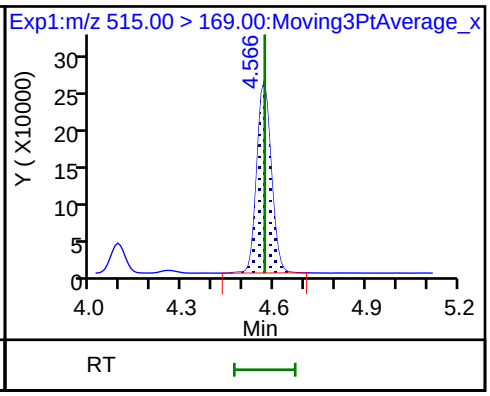
D 47 d7-N-MeFOSE-M



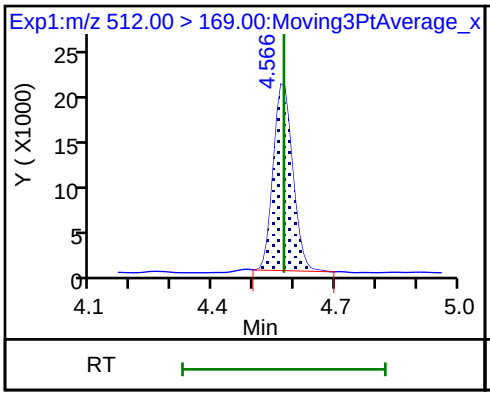
48 2-(N-methylperfluoro-1-octanesul



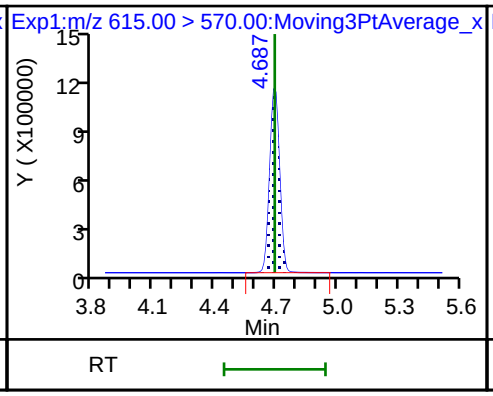
D 49 d-N-MeFOSA-M



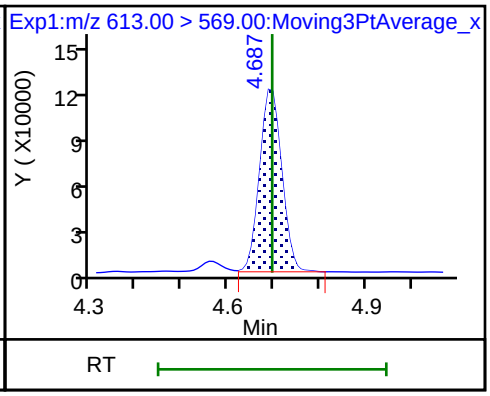
50 NMeFOSA



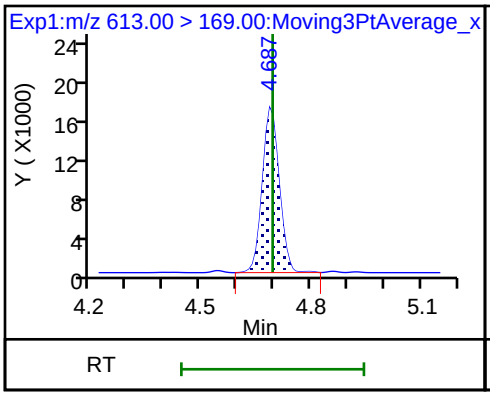
D 56 13C2 PFDoA



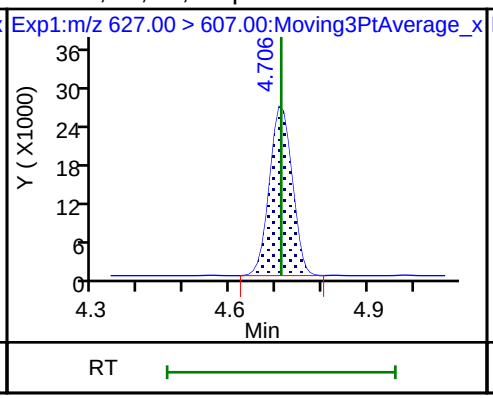
52 Perfluorododecanoic acid



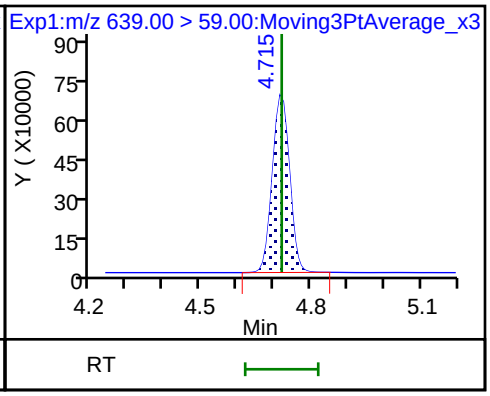
52 Perfluorododecanoic acid



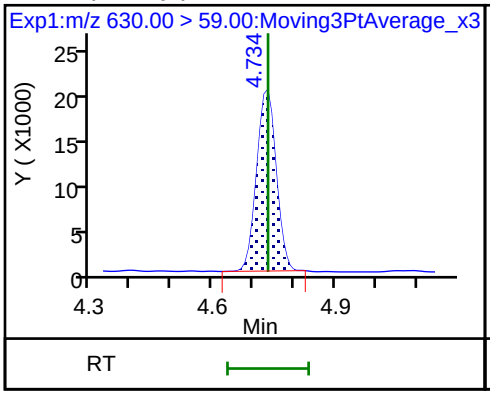
55 1H,1H,2H,2H-perfluorododecanesul



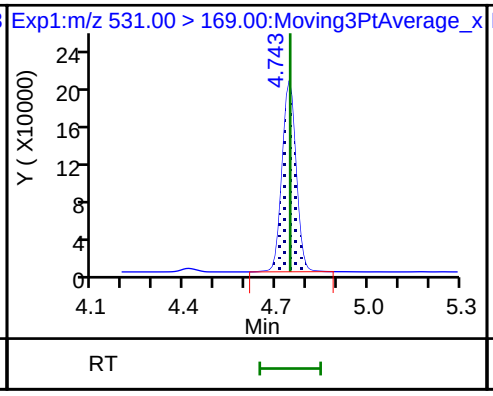
D 53 d9-N-EtFOSE-M



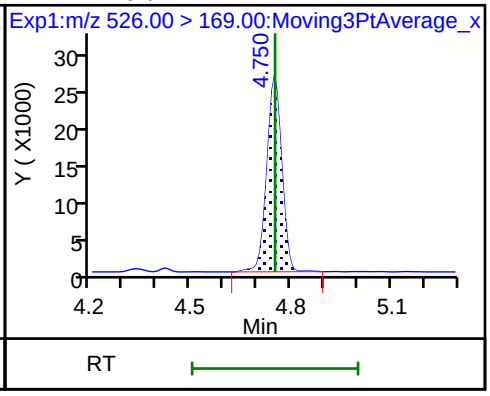
54 2-(N-ethylperfluoro-1-octanesulf



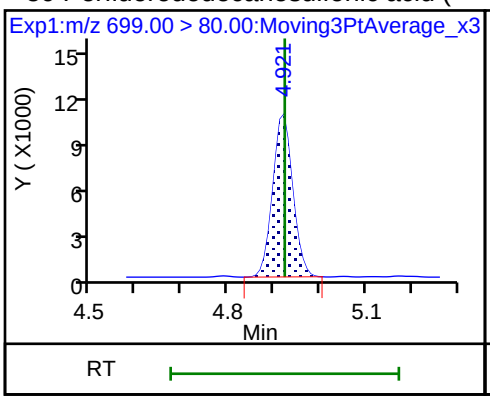
D 58 d-N-EtFOSA-M



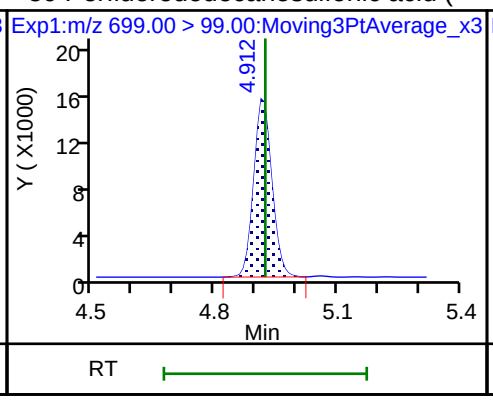
57 N-ethylperfluoro-1-octanesulfona



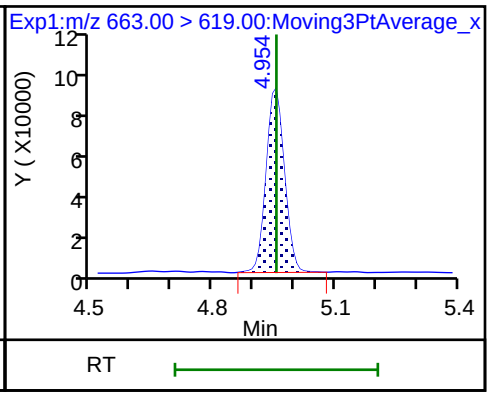
59 Perfluorododecanesulfonic acid (



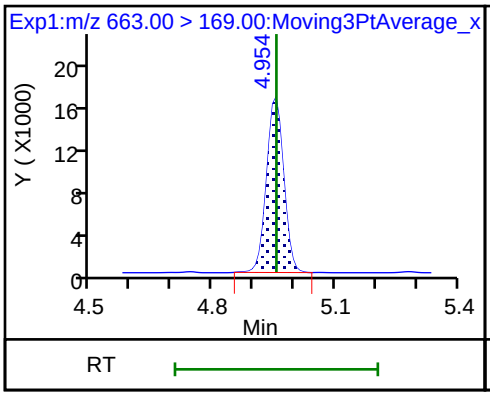
59 Perfluorododecanesulfonic acid (



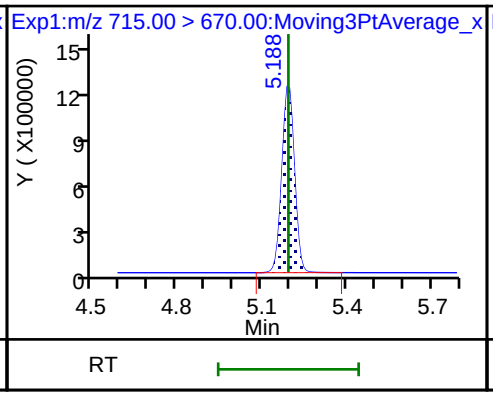
60 Perfluorotridecanoic acid



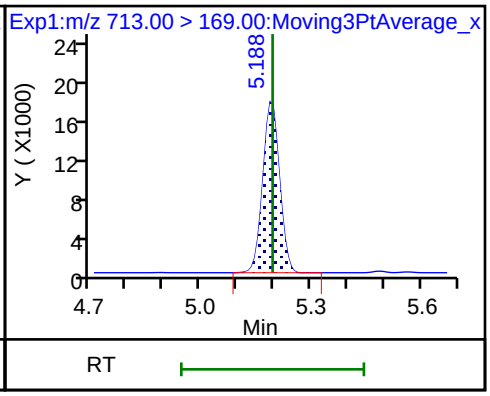
60 Perfluorotridecanoic acid



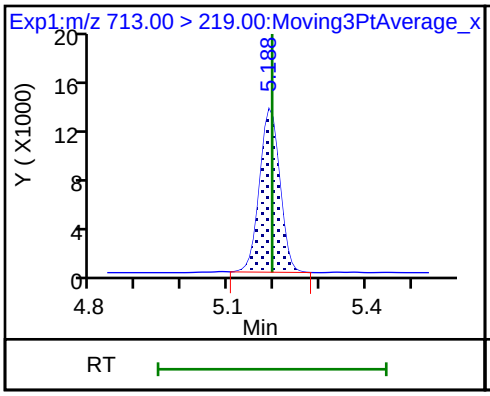
D 62 13C2 PFTeDA



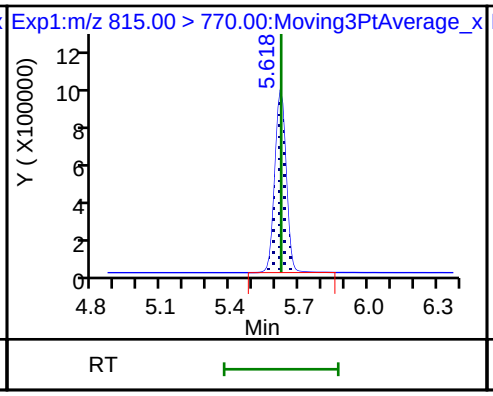
61 Perfluorotetradecanoic acid



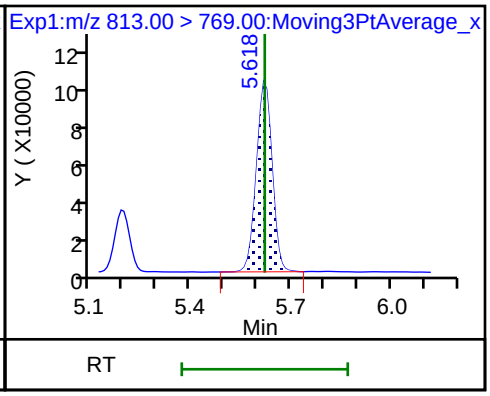
61 Perfluorotetradecanoic acid



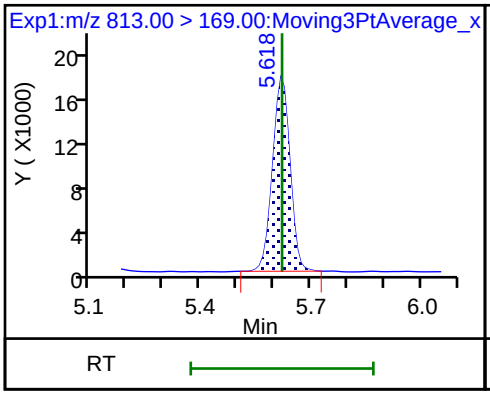
D 63 13C2 PFHxDA



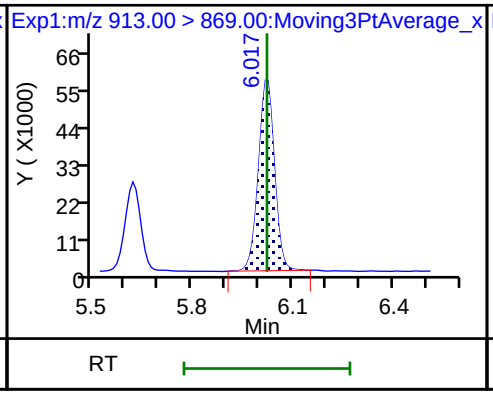
64 Perfluorohexadecanoic acid



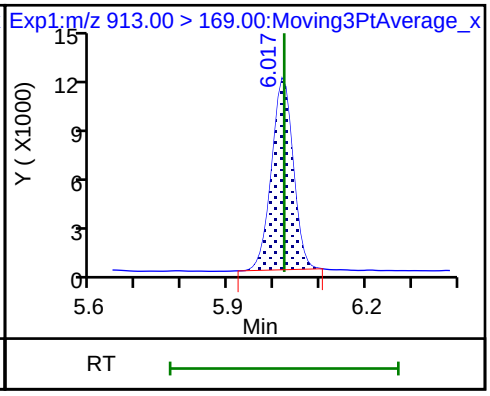
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

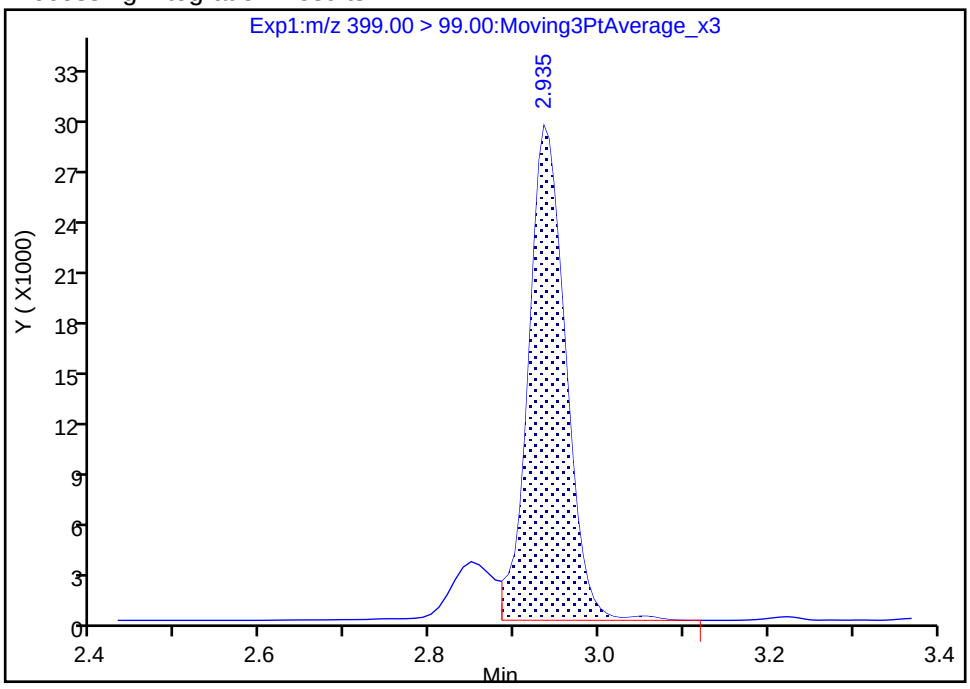
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_008.d				
Injection Date:	02-Jun-2020 15:43:19	Instrument ID:	A9		
Lims ID:	IC L3 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

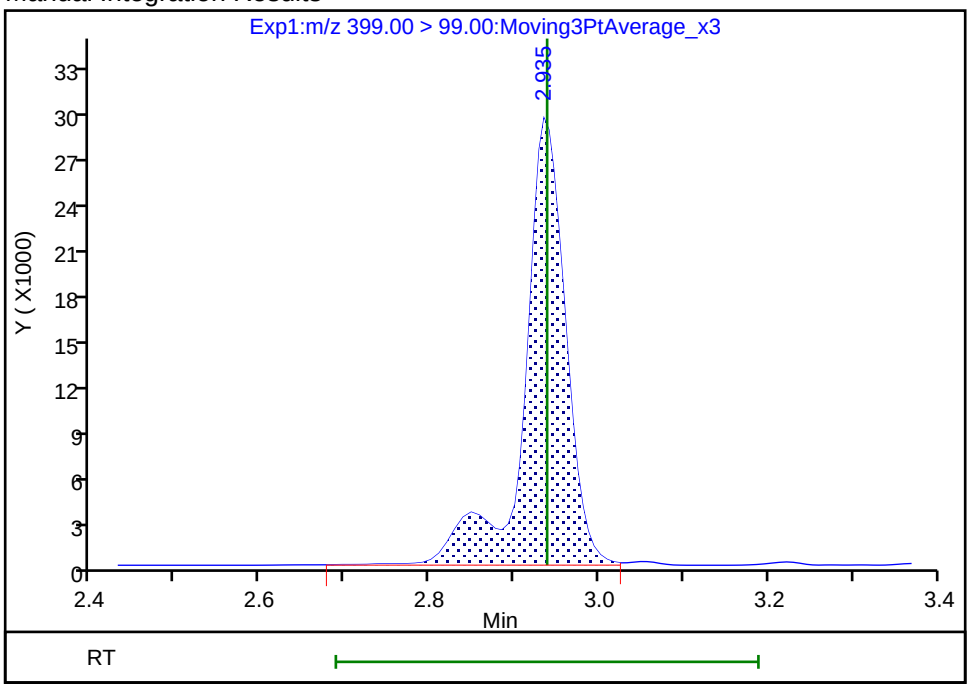
Processing Integration Results

RT: 2.93
Area: 89371
Amount: 0.214833
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 101310
Amount: 0.214833
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:50:51
Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

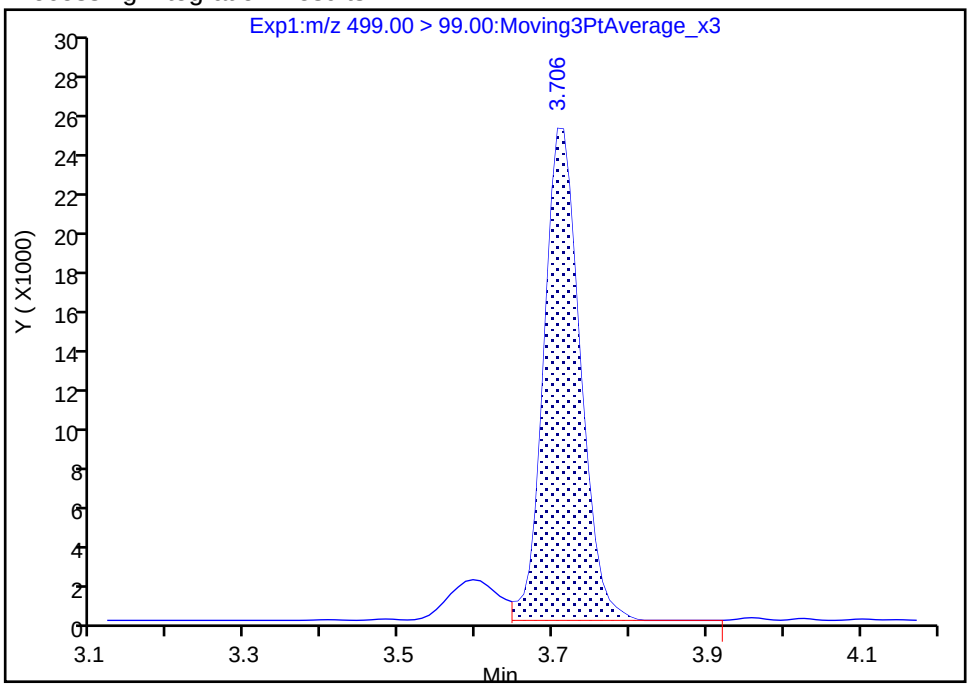
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_008.d				
Injection Date:	02-Jun-2020 15:43:19	Instrument ID:	A9		
Lims ID:	IC L3 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

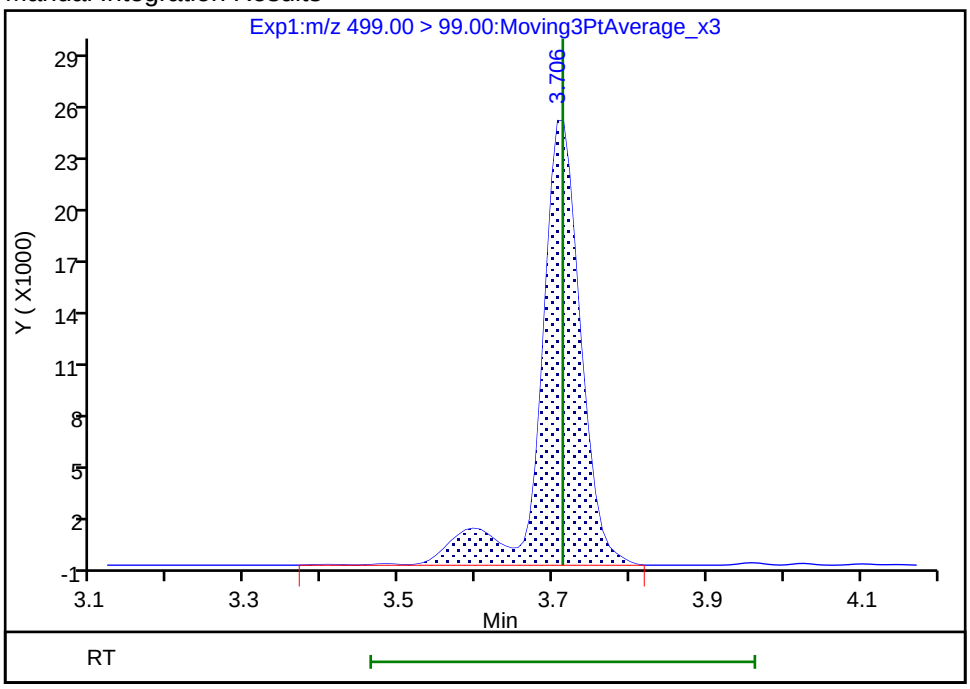
Processing Integration Results

RT: 3.71
Area: 82480
Amount: 0.227581
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 92123
Amount: 0.227581
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:51:12

Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_009.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 02-Jun-2020 15:52:40 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD4 (26)
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 02-Jun-2020 20:32:51 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1042

First Level Reviewer: adamst Date: 02-Jun-2020 19:40:33
Ratio Calibration: Average of Initial Calibration

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	1.890	1.890	0.0	0.566	4699627	2.48		99.2	7097	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.895	1.893	0.002	1.003	939087	1.04		104	932	
D 4 13C5 PFPeA										
267.90 > 223.00	2.192	2.193	-0.001	0.656	1701163	2.49		99.5	4593	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.200	2.196	0.004	1.004	666282	0.9379		93.8	141	
D 6 13C3 PFBS										
301.90 > 80.00	2.226	2.224	0.002	0.666	1907865	2.17		93.3	5942	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.226	2.224	0.002	1.000	828737	0.9295	Target=2.39	105	618	
298.90 > 99.00	2.226	2.224	0.002	1.000	355356		2.33(1.20-3.59)	105	745	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.506	2.511	-0.005	0.750	447526	2.42		104	2202	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.517	2.511	0.006	1.004	530651	0.9653		103	4098	
D 10 13C2 PFHxA										
315.00 > 270.00	2.549	2.549	0.0	0.763	3395138	2.50		100	4332	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.549	2.547	0.002	1.000	1454881	1.03	Target=15.64	103	690	
313.00 > 119.00	2.549	2.547	0.002	1.000	92118		15.79(7.82-23.46)	103	350	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.570	2.566	0.004	1.155	843964	1.02	Target=1.75	109	2247	
349.00 > 99.00	2.559	2.566	-0.007	1.150	487266		1.73(0.88-2.63)	109	1993	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.665	2.664	0.001	0.798	2132262	2.46		98.3	6290	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.665	2.666	-0.001	1.000	524165	1.06		106	2263	
D 15 13C4 PFHpA										
367.00 > 322.00	2.936	2.935	0.001	0.879	3215584	2.63		105	8100	
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.936	2.937	-0.001	1.000	1676601	1.00	Target=4.39	99.8	709	
363.00 > 169.00	2.936	2.937	-0.001	1.000	391532		4.28(2.20-6.59)	99.8	1259	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.941	2.939	0.002	1.000	1209375	0.8837	Target=3.04	97.1	5474	
399.00 > 99.00	2.941	2.939	0.002	1.000	391501		3.09(1.52-4.56)	97.1	1157	M
D 17 18O2 PFHxS										
403.00 > 84.00	2.941	2.941	0.0	0.881	2745058	2.37		100	5884	
19 DONA										
377.00 > 251.00	2.988	2.986	0.002	0.804	2938571	1.03	Target=2.17	109	9213	
377.00 > 85.00	2.988	2.986	0.002	0.804	1329044		2.21(1.09-3.26)	109	4186	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.318	0.0	0.994	372308	2.40		101	2111	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.318	3.321	-0.003	1.000	335133	0.9601		101	1634	
$ 21 13C8 PFOA										
421.00 > 376.00	3.332	3.333	-0.001	0.998	3636767	2.48		101	7557	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.332	3.334	-0.002	0.897	1554833	0.9800	Target=3.82	103	3002	
449.00 > 99.00	3.332	3.334	-0.002	0.897	413773		3.76(1.91-5.72)	103	1177	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.340	3.338	0.002	1.000	1932205	1.02	Target=2.82	102	185	
413.00 > 169.00	3.340	3.338	0.002	1.000	639002		3.02(1.41-4.23)	102	1517	
D 26 13C4 PFOA										
417.00 > 372.00	3.340	3.339	0.001	1.000	3753256	2.50		100	8222	
* 25 13C2 PFOA										
415.00 > 370.00	3.340	3.339	0.001		3929125	2.50			5770	
$ 27 13C8 PFOS										
507.00 > 99.00	3.708	3.709	-0.001	1.110	792447	2.31		96.7	2155	
D 31 13C4 PFOS										
503.00 > 80.00	3.715	3.714	0.001	1.112	3585681	2.42		101	4975	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.715	3.713	0.002	1.000	1487385	0.9090	Target=4.25	98.0	2891	
499.00 > 99.00	3.715	3.713	0.002	1.000	330989		4.49(2.13-6.38)	98.0	809	M
D 29 13C5 PFNA										
468.00 > 423.00	3.731	3.728	0.003	1.117	3656960	2.48		99.2	10922	
30 Perfluorononanoic acid										
463.00 > 419.00	3.731	3.727	0.004	1.000	1656293	1.04	Target=5.46	104	418	
463.00 > 169.00	3.731	3.727	0.004	1.000	289001		5.73(2.73-8.19)	104	1096	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.922	3.920	0.002	1.056	1667168	0.9671		104	3820	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.061	4.061	0.0	1.093	1006993	0.9897	Target=4.97	103	2866	
549.00 > 99.00	4.061	4.061	0.0	1.093	195717		5.15(2.48-7.45)	103	734	
D 36 13C8 FOSA										
506.00 > 78.00	4.088	4.087	0.001	1.224	1524735	2.60		104	3299	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.088	4.087	0.001	1.000	2001536	1.01		101	3075	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.088	4.088	0.0	1.000	1910410	1.08	Target=14.66	108	783	
513.00 > 169.00	4.088	4.088	0.0	1.000	131916		14.48(7.33-21.99)	108	272	
D 33 13C2 PFDA										
515.00 > 470.00	4.088	4.088	0.0	1.224	4424244	2.56		103	5864	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.088	4.091	-0.003	1.000	407512	0.9455		98.7	2468	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.088	4.091	-0.003	1.224	468684	2.54		106	2280	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.249	4.252	-0.003	1.272	1683461	2.45		98.0	4342	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.258	4.256	0.002	1.002	667419	1.07		107	135	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.380	4.383	-0.003	1.179	1216711	1.01	Target=4.49	104	2207	
599.00 > 99.00	4.380	4.383	-0.003	1.179	269119		4.52(2.25-6.74)	104	1702	
D 46 13C2 PFUnA										
565.00 > 520.00	4.406	4.407	-0.001	1.319	3889729	2.58		103	8756	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.406	4.405	0.001	1.000	1264218	1.05	Target=10.82	105	383	
563.00 > 169.00	4.406	4.405	0.001	1.000	119707		10.56(5.41-16.23)	105	510	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.415	4.413	0.002	1.322	1365696	2.62		105	1745	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.423	4.423	0.0	1.002	476550	0.9735		97.4	1070	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.543	4.543	0.0	1.223	2284452	0.9741		103	6022	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.552	4.549	0.003	1.363	2175728	12.7		101	5039	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.561	4.560	0.001	1.002	261302	1.07		107	1224	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.570	4.568	0.002	1.368	831648	2.39		95.7	233	
50 NMeFOSA										
512.00 > 169.00	4.570	4.573	-0.003	1.000	326266	1.11		111	919	
D 56 13C2 PFDoA										
615.00 > 570.00	4.690	4.692	-0.002	1.404	3628363	2.54		102	6438	
52 Perfluorododecanoic acid										
613.00 > 569.00	4.700	4.694	0.006	1.002	1607479	1.06	Target=8.20	106	522	
613.00 > 169.00	4.690	4.694	-0.004	1.000	181836		8.84(4.10-12.30)	106	1216	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.709	4.711	-0.002	1.152	399649	1.04		108	4642	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.719	4.720	-0.001	1.413	2125355	12.3		98.2	6689	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.737	4.734	0.003	1.004	255036	1.02		102	1157	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.746	4.745	0.001		620496	2.37		94.8	1277	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.754	4.752	0.002	1.002	332692	1.05		105	732	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.924	4.923	0.001	1.325	126946	0.9410	Target=0.67	97.2	955	
699.00 > 99.00	4.924	4.923	0.001	1.325	194582		0.65(0.33-1.00)	97.2	1158	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.958	4.955	0.003	1.057	1152682	1.11	Target=5.48	111	792	
663.00 > 169.00	4.958	4.955	0.003	1.057	196071		5.88(2.74-8.23)	111	2167	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.200	5.193	0.007	1.557	3686931	2.66		106	5900	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.200	5.195	0.005	1.000	250167	1.00	Target=1.49	99.8	1778	
713.00 > 219.00	5.192	5.195	-0.003	0.998	162547		1.54(0.75-2.24)	99.8	2119	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.619	5.621	-0.002	1.683	3427193	2.55		102	5367	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.619	5.621	-0.002	1.000	1303354	1.05	Target=5.24	105	242	
813.00 > 169.00	5.619	5.621	-0.002	1.000	257869		5.05(2.62-7.87)	105	1278	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.025	6.021	0.004	1.072	857070	1.10	Target=4.86	110	224	
913.00 > 169.00	6.025	6.021	0.004	1.072	168902		5.07(2.43-7.29)	110	529	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 02-Jun-2020 20:32:51 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_009.d

Injection Date: 02-Jun-2020 15:52:40 Instrument ID: A9

Lims ID: IC L4 Full

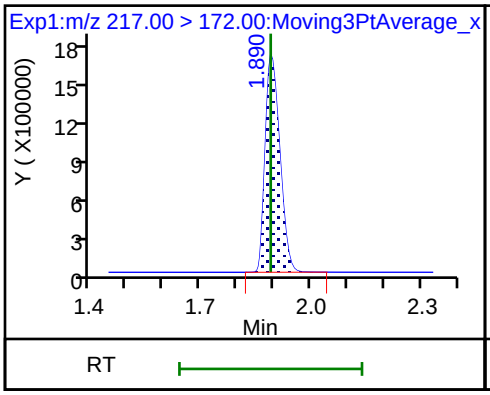
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 4 Worklist Smp#: 5

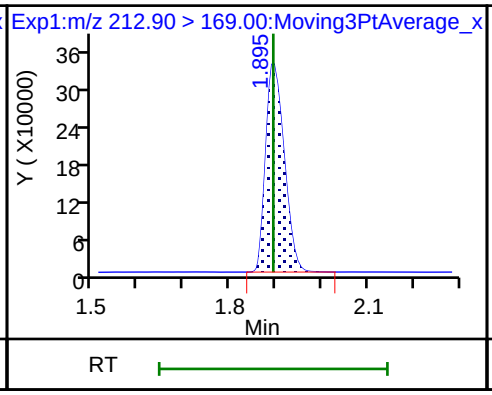
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

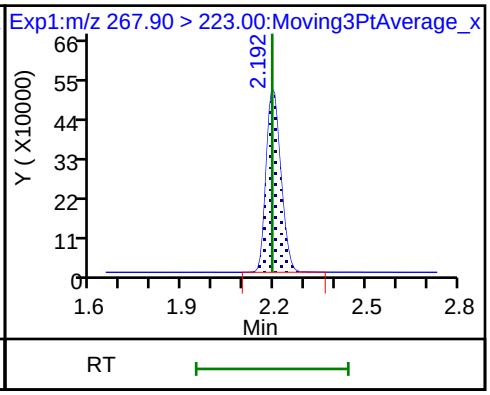
D 1 13C4 PFBA



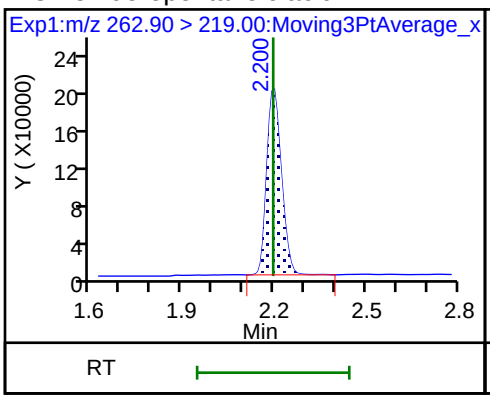
2 Perfluorobutanoic acid



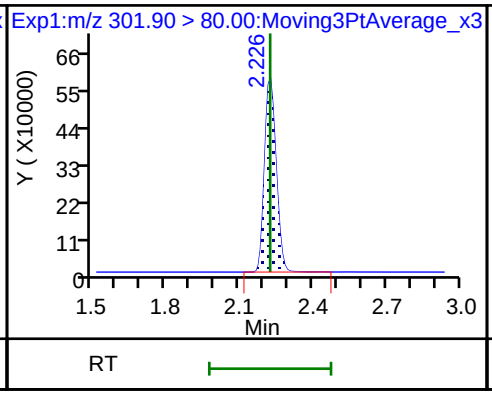
D 4 13C5 PFPeA



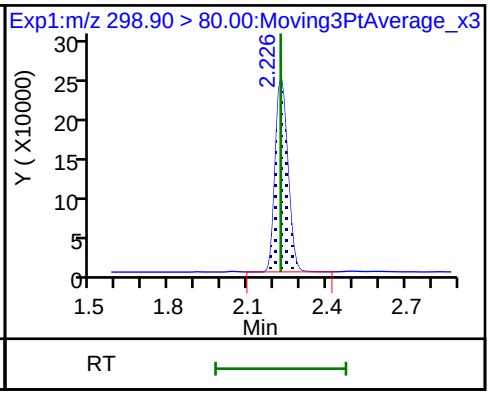
3 Perfluoropentanoic acid



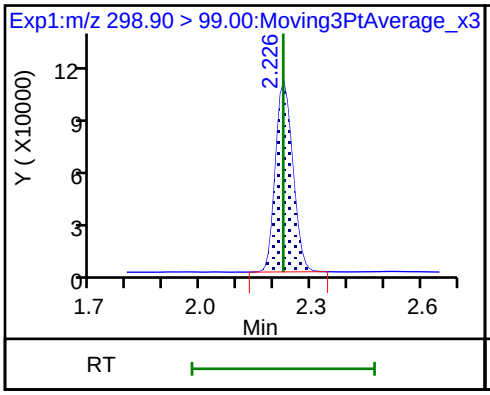
D 6 13C3 PFBS



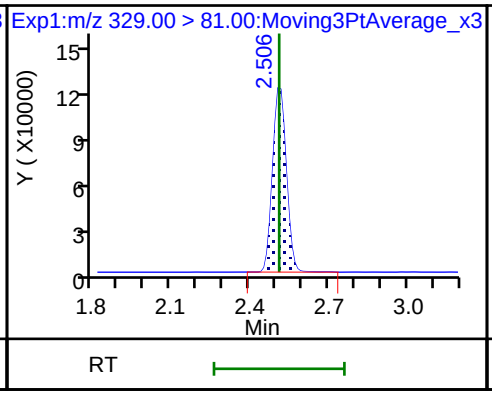
5 Perfluorobutanesulfonic acid



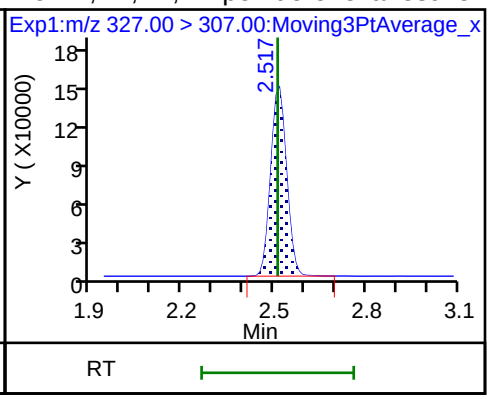
5 Perfluorobutanesulfonic acid



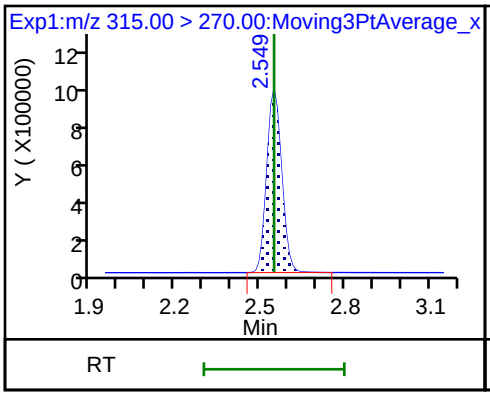
D 8 M2-4:2 FTS



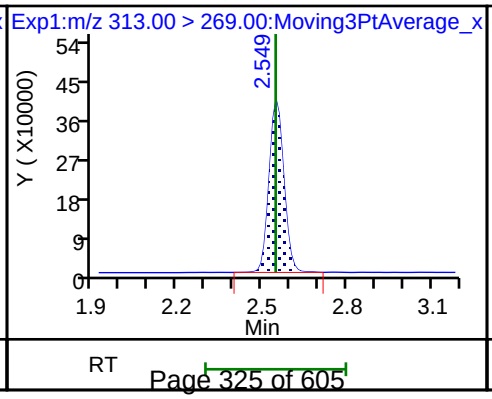
9 1H,1H,2H,2H-perfluorohexanesulfo



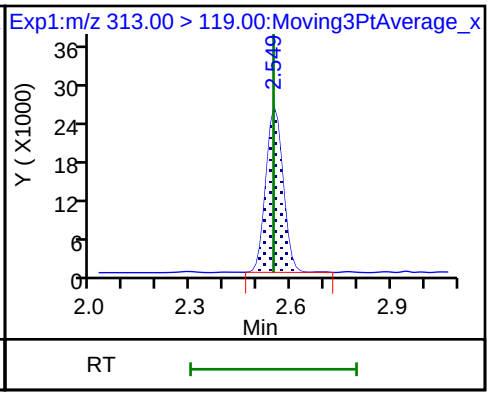
D 10 13C2 PFHxA



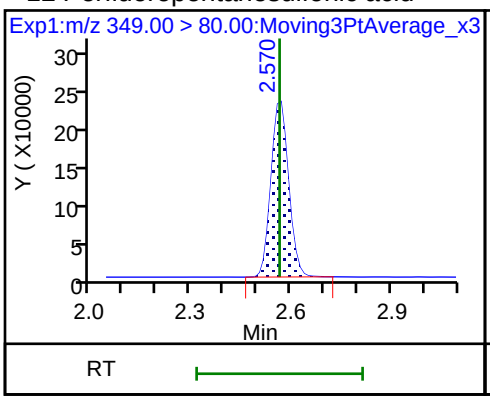
11 Perfluorohexanoic acid



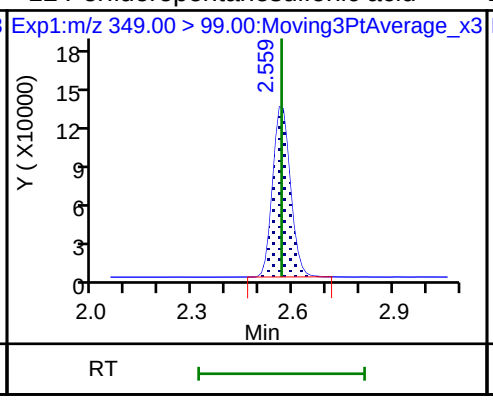
11 Perfluorohexanoic acid



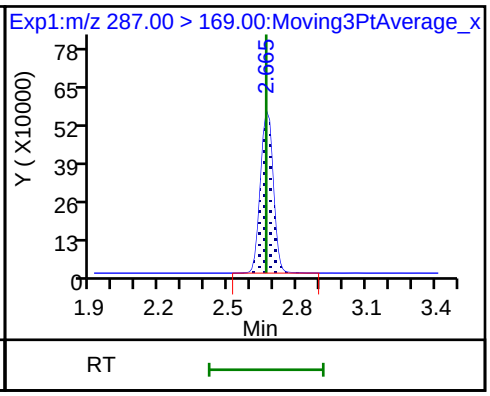
12 Perfluoropentanesulfonic acid



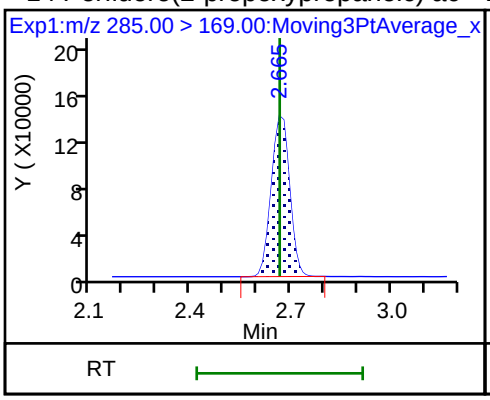
12 Perfluoropentanesulfonic acid



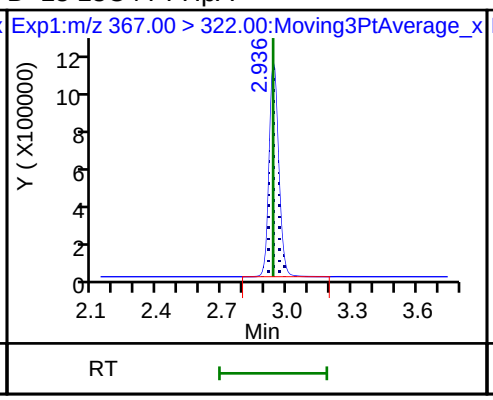
D 13 13C3 HFPO-DA



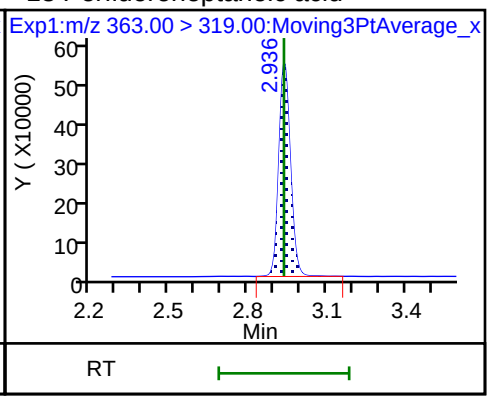
14 Perfluoro(2-propoxypropanoic) ac



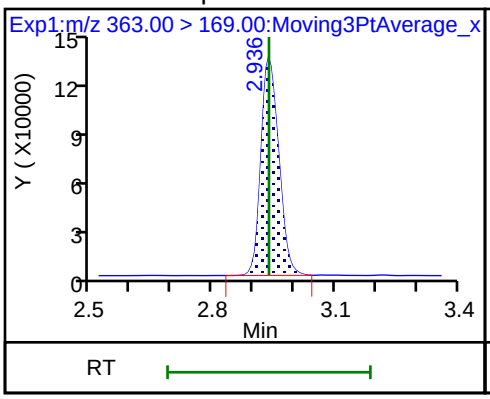
D 15 13C4 PFHpA



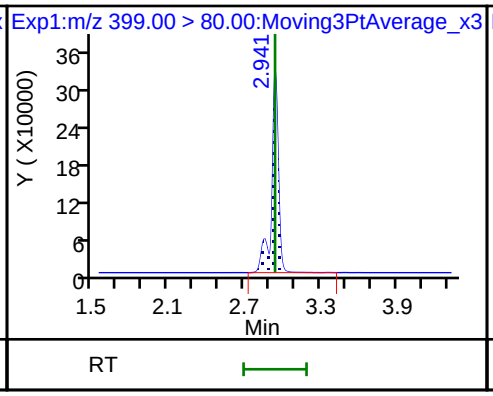
18 Perfluoroheptanoic acid



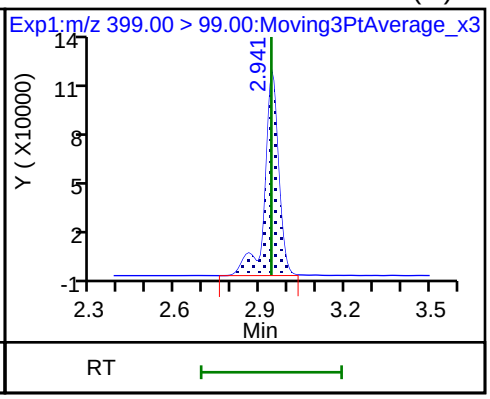
18 Perfluoroheptanoic acid



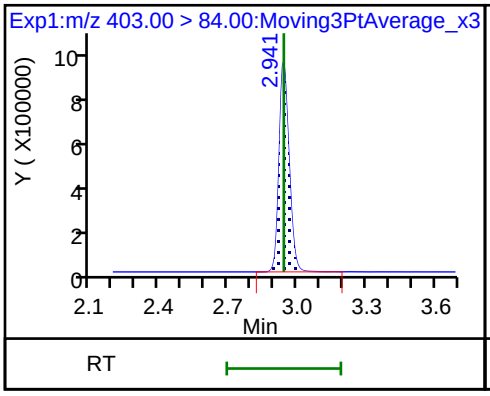
16 Perfluorohexanesulfonic acid



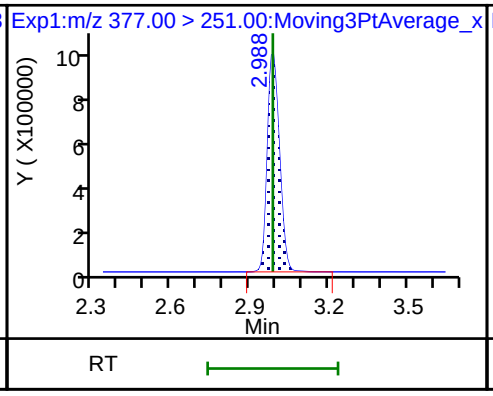
16 Perfluorohexanesulfonic acid (M)



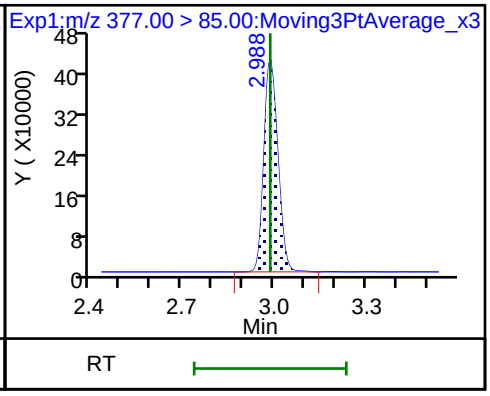
D 17 18O2 PFHxS



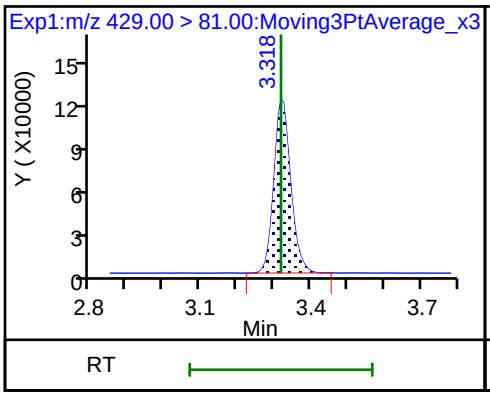
19 DONA



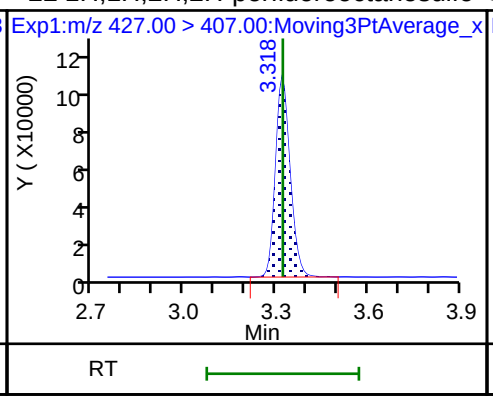
19 DONA



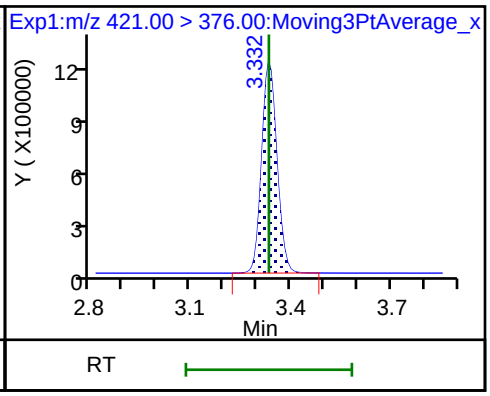
D 20 M2-6:2 FTS



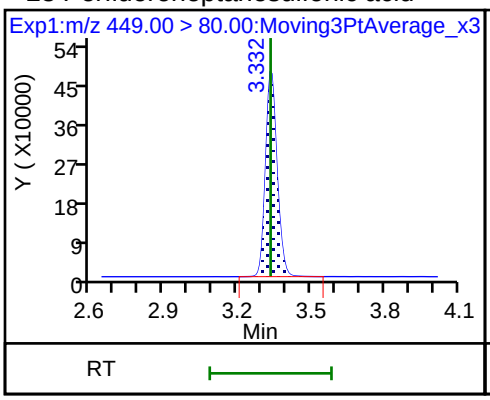
22 1H,1H,2H,2H-perfluorooctanesulfo



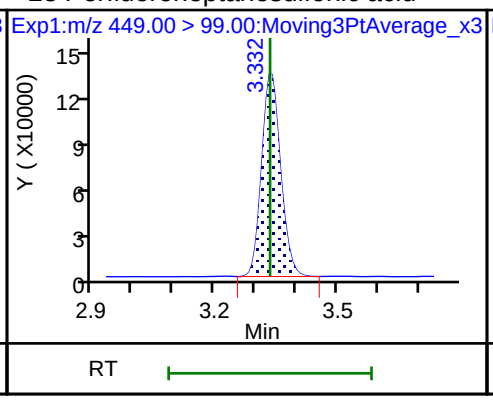
$ 21 13C8 PFOA



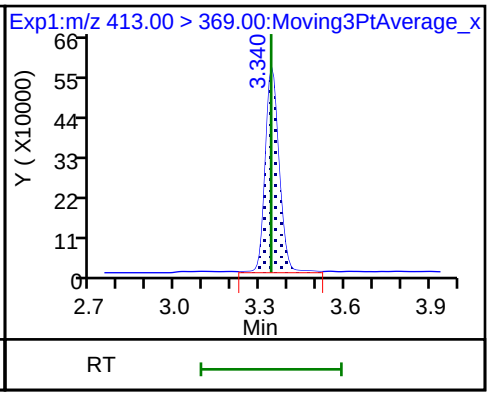
23 Perfluoroheptanesulfonic acid



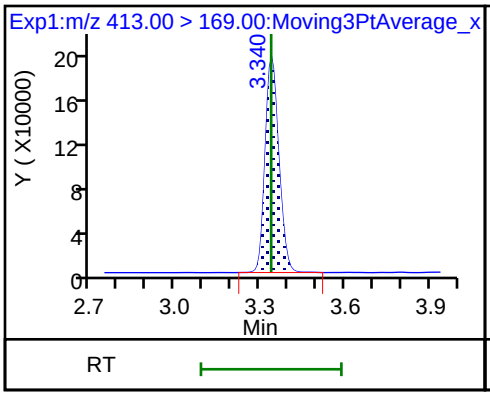
23 Perfluoroheptanesulfonic acid



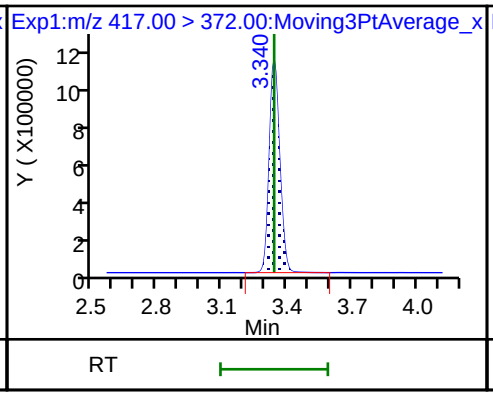
24 Perfluorooctanoic acid



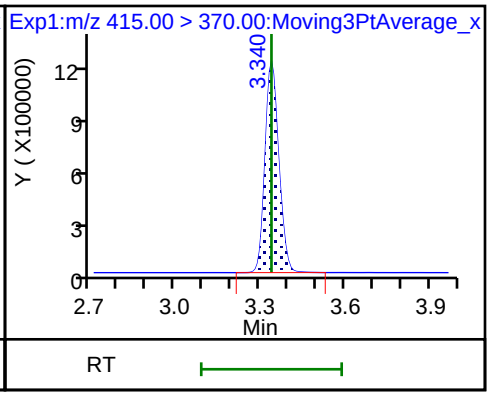
24 Perfluorooctanoic acid



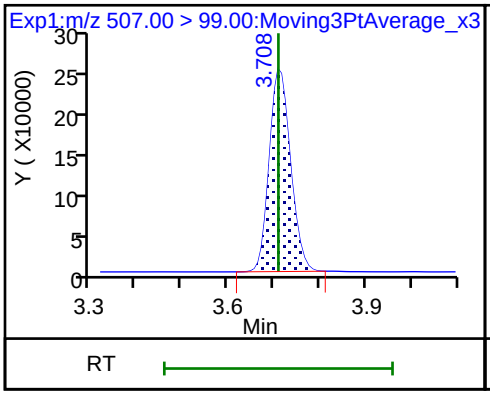
D 26 13C4 PFOA



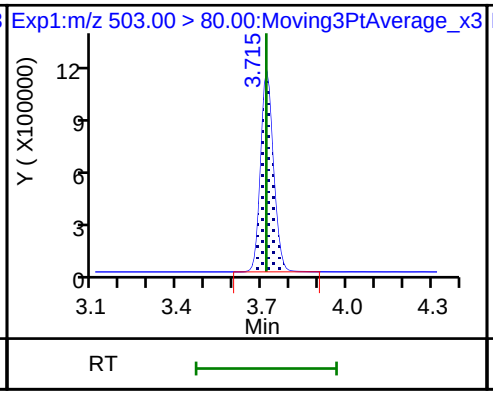
* 25 13C2 PFOA



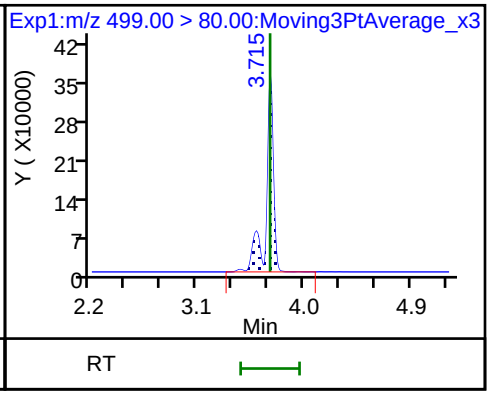
$ 27 13C8 PFOS



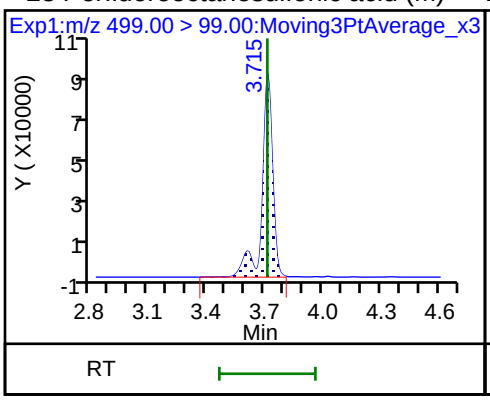
D 31 13C4 PFOS



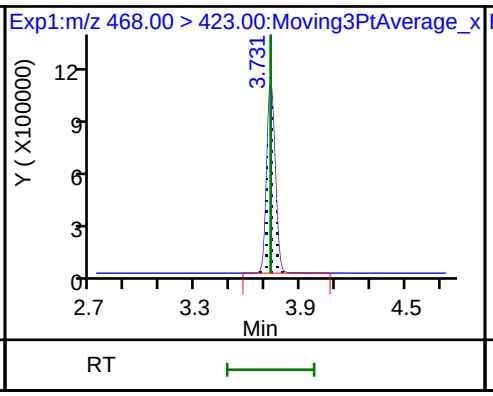
28 Perfluorooctanesulfonic acid



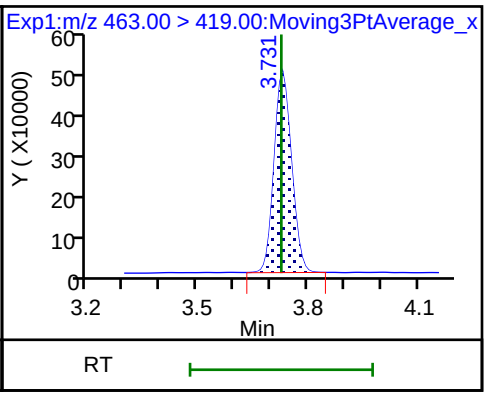
28 Perfluorooctanesulfonic acid (M)



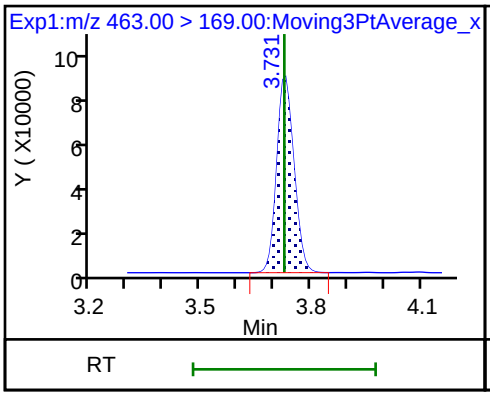
D 29 13C5 PFNA



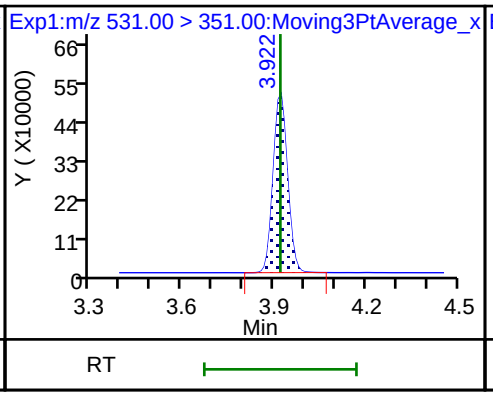
30 Perfluorononanoic acid



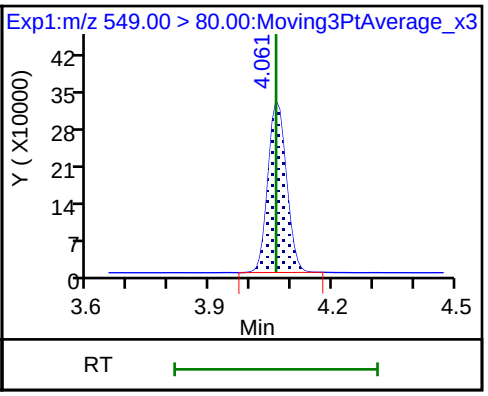
30 Perfluorononanoic acid



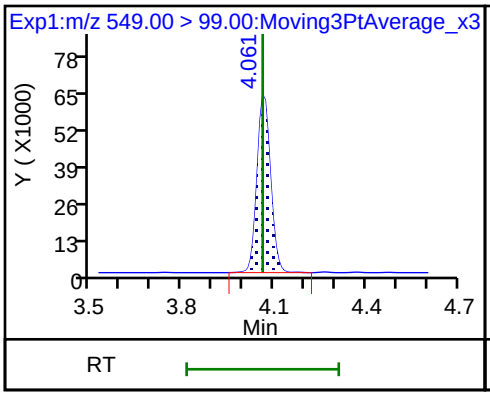
32 9-Chlorohexadecafluoro-3-oxanona



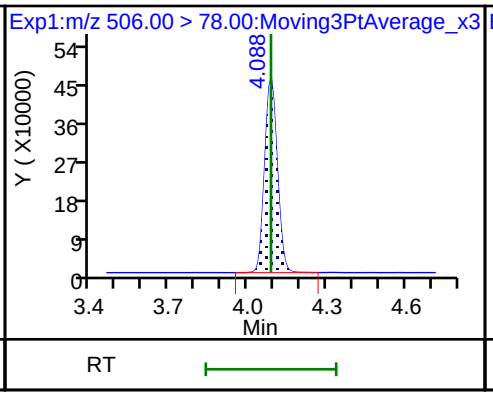
35 Perfluorononanesulfonic acid



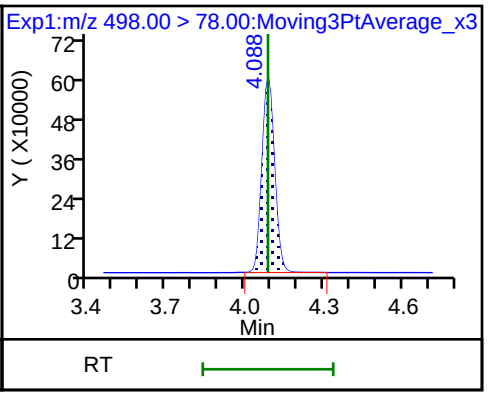
35 Perfluorononanesulfonic acid



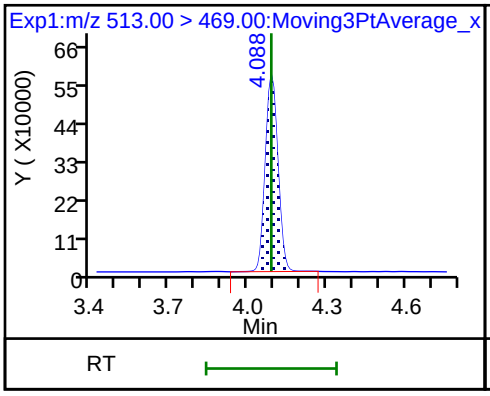
D 36 13C8 FOSA



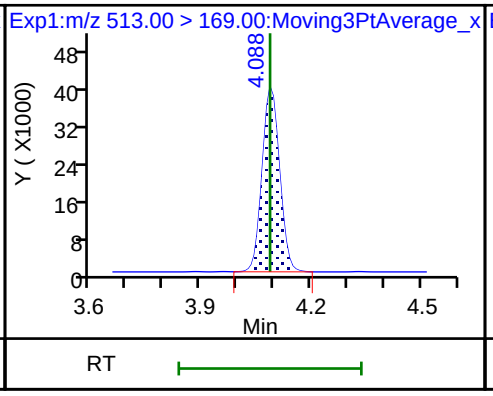
34 Perfluorooctanesulfonamide



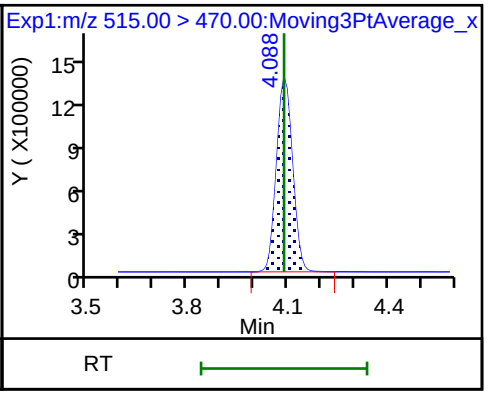
38 Perfluorodecanoic acid



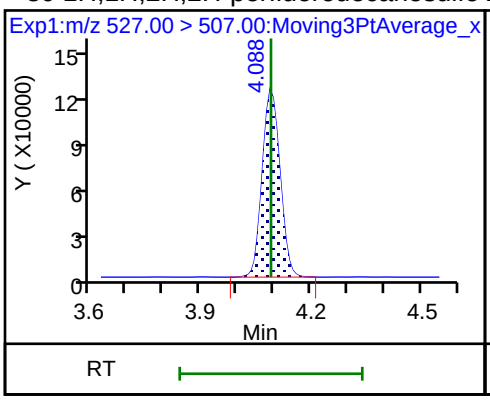
38 Perfluorodecanoic acid



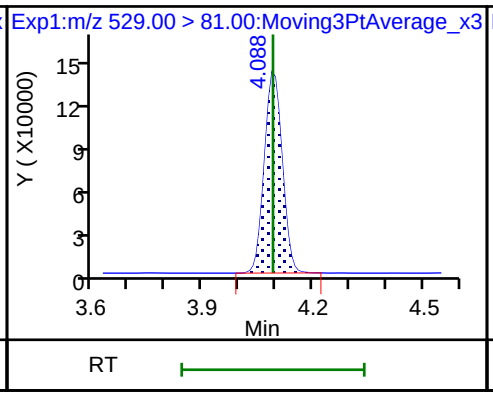
D 33 13C2 PFDA



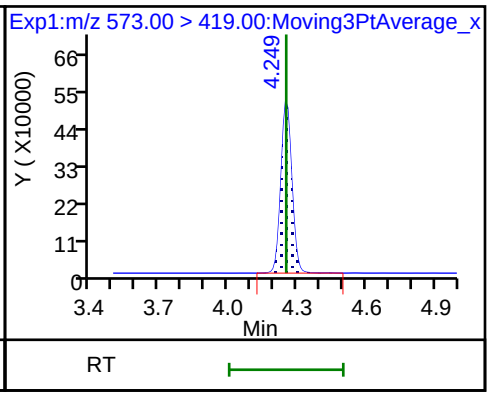
39 1H,1H,2H,2H-perfluorodecanesulfo



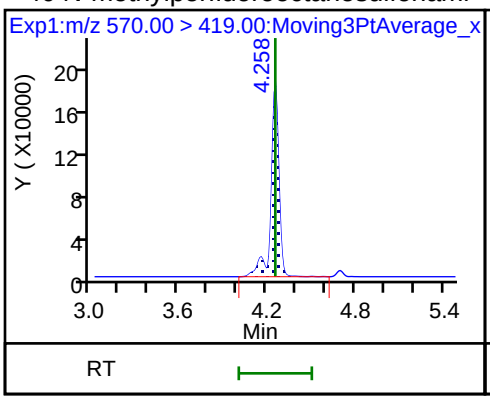
D 37 M2-8:2 FTS



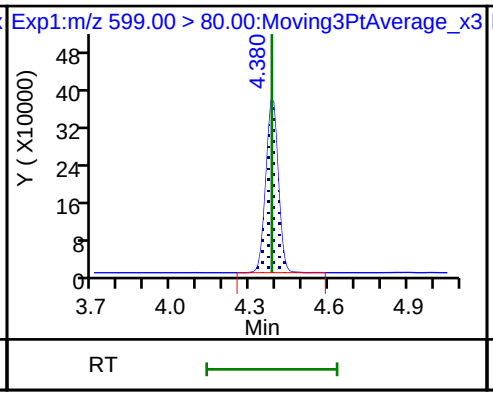
D 41 d3-NMeFOSAA



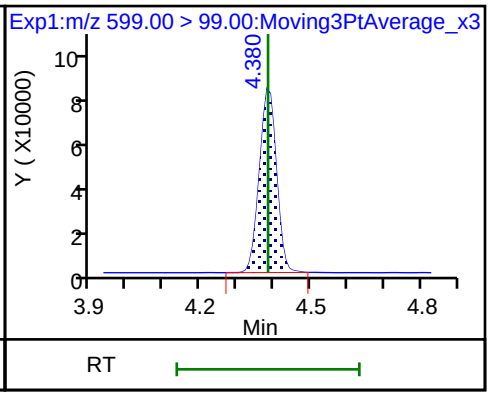
40 N-methylperfluorooctanesulfonami



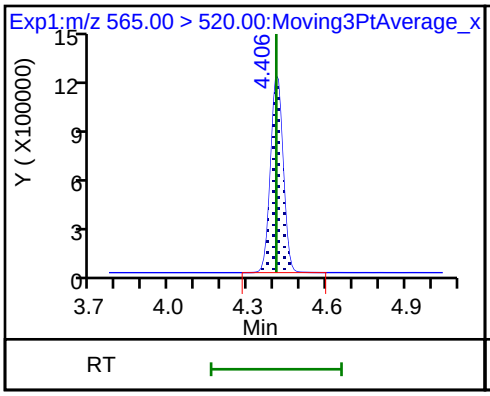
42 Perfluorodecanesulfonic acid



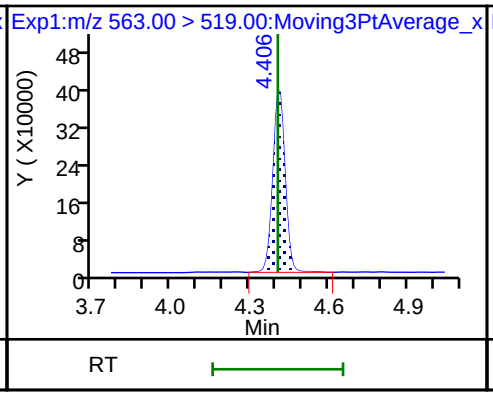
42 Perfluorodecanesulfonic acid



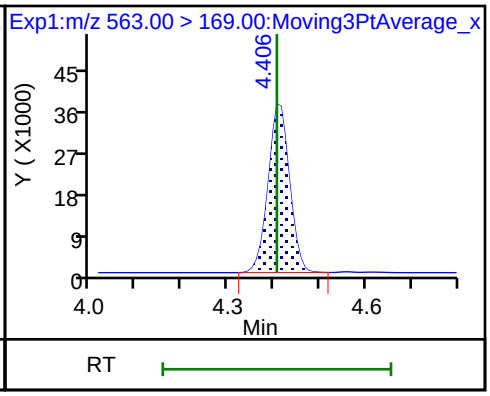
D 46 13C2 PFUnA



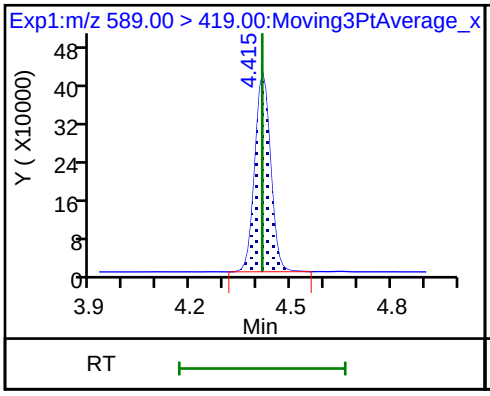
43 Perfluoroundecanoic acid



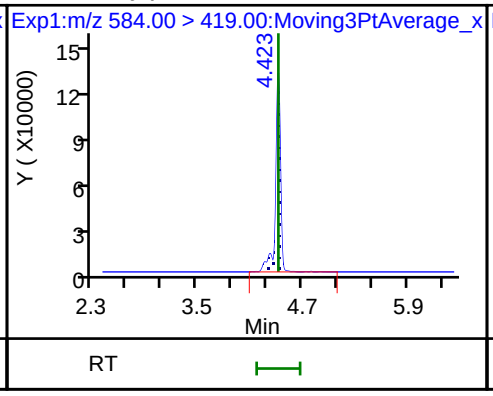
43 Perfluoroundecanoic acid



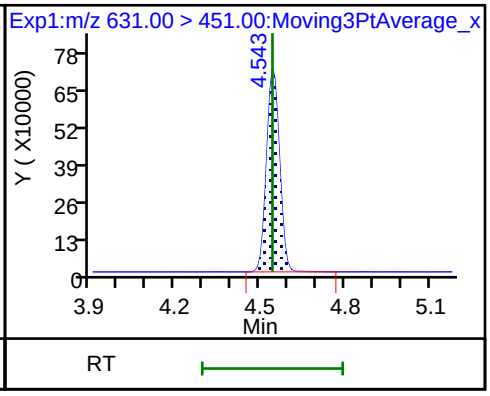
D 45 d5-NEtFOSAA



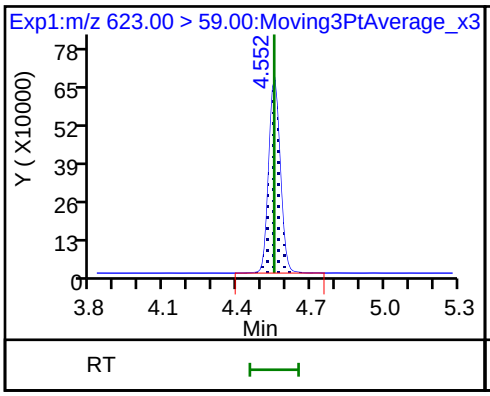
44 N-ethylperfluorooctanesulfonamid



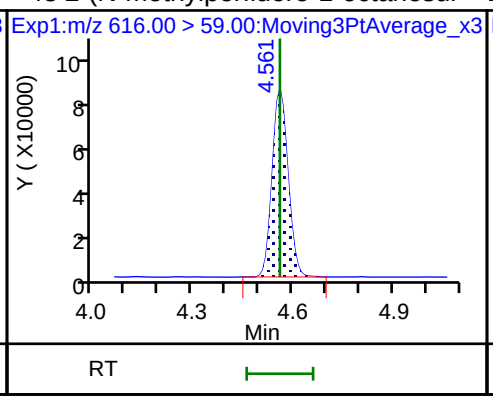
51 11-Chloroeicosafluoro-3-oxaundec



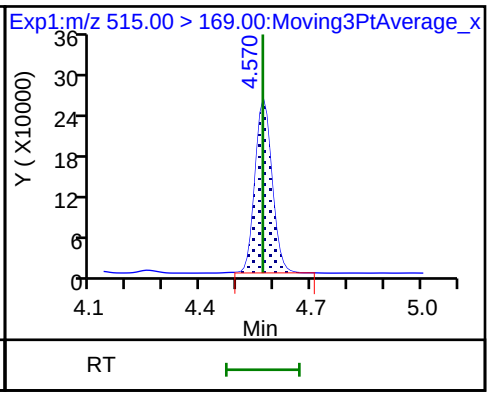
D 47 d7-N-MeFOSE-M



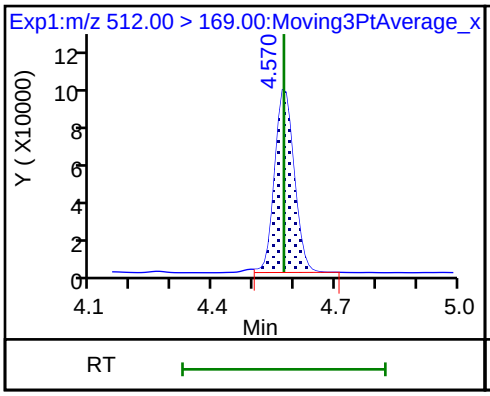
48 2-(N-methylperfluoro-1-octanesul



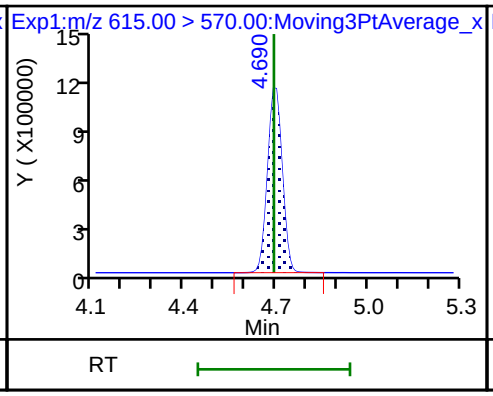
D 49 d-N-MeFOSA-M



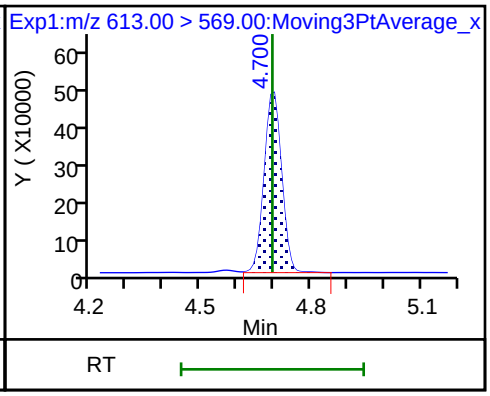
50 NMeFOSA



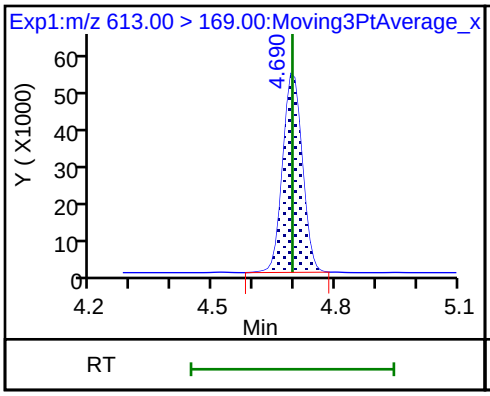
D 56 13C2 PFDoA



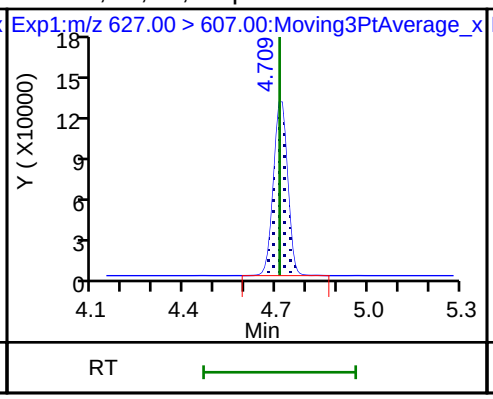
52 Perfluorododecanoic acid



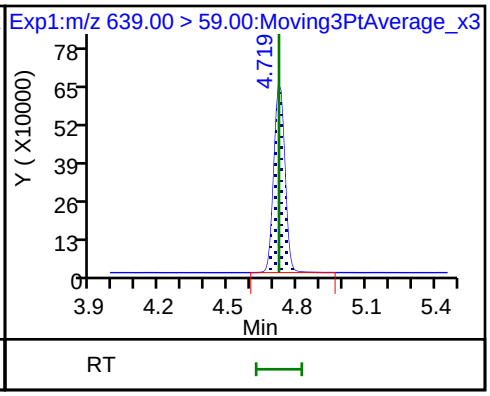
52 Perfluorododecanoic acid



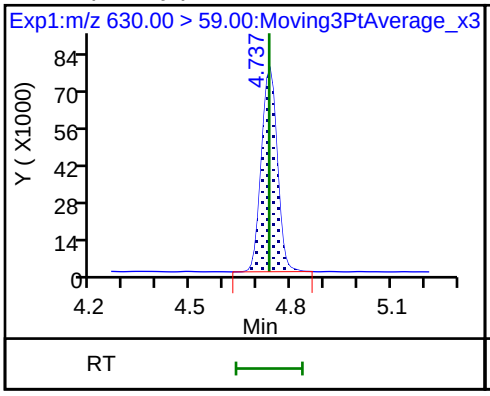
55 1H,1H,2H,2H-perfluorododecanesul



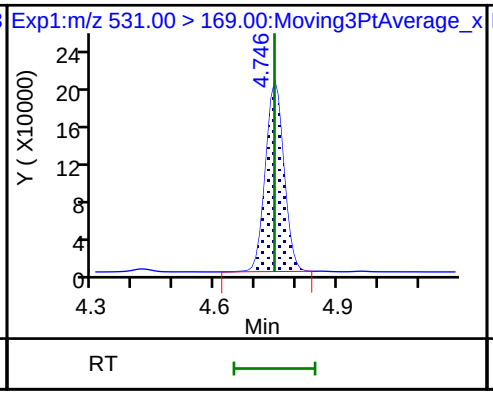
D 53 d9-N-EtFOSE-M



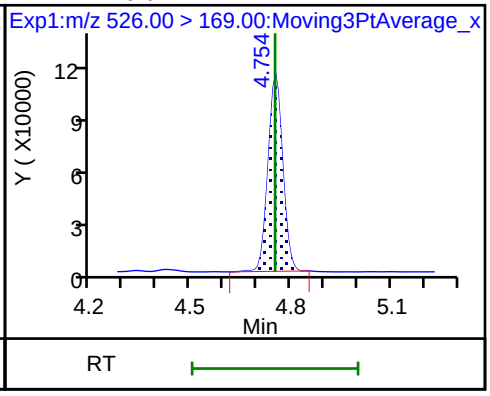
54 2-(N-ethylperfluoro-1-octanesulf



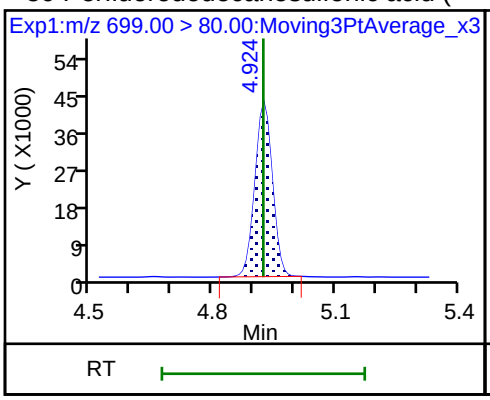
D 58 d-N-EtFOSA-M



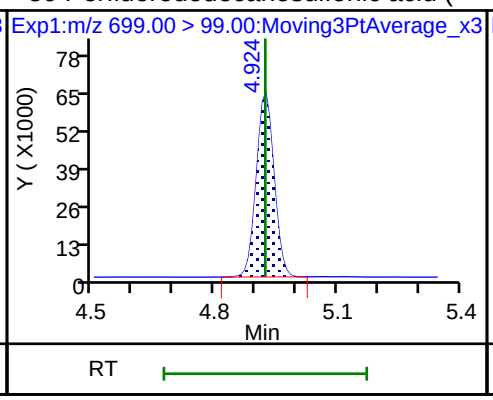
57 N-ethylperfluoro-1-octanesulfona



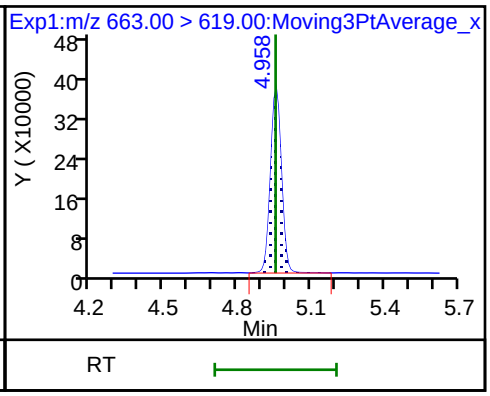
59 Perfluorododecanesulfonic acid (



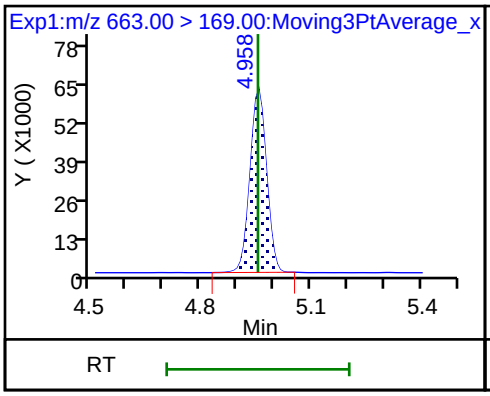
59 Perfluorododecanesulfonic acid (



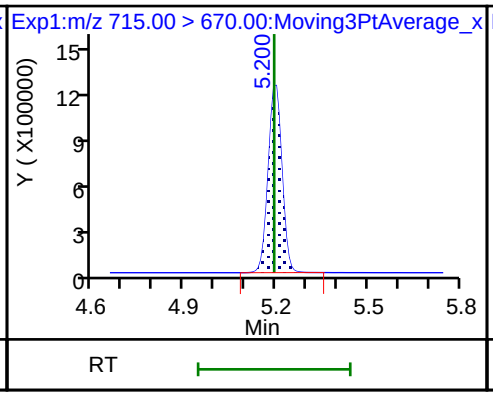
60 Perfluorotridecanoic acid



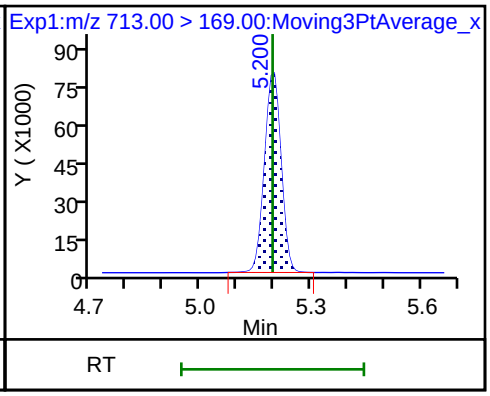
60 Perfluorotridecanoic acid



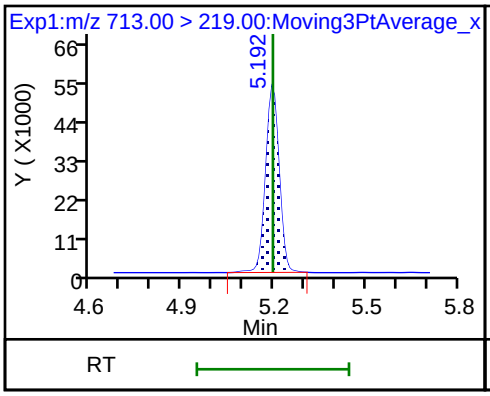
D 62 13C2 PFTeDA



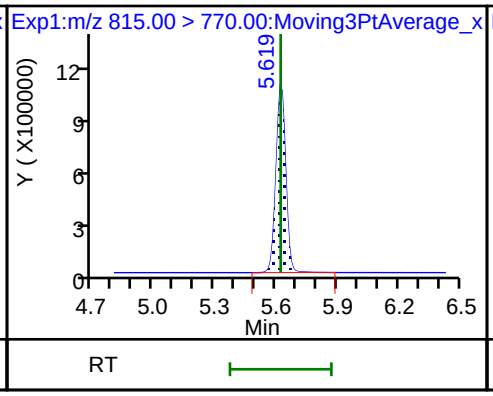
61 Perfluorotetradecanoic acid



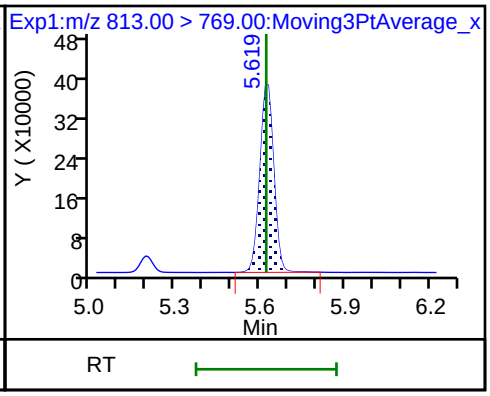
61 Perfluorotetradecanoic acid



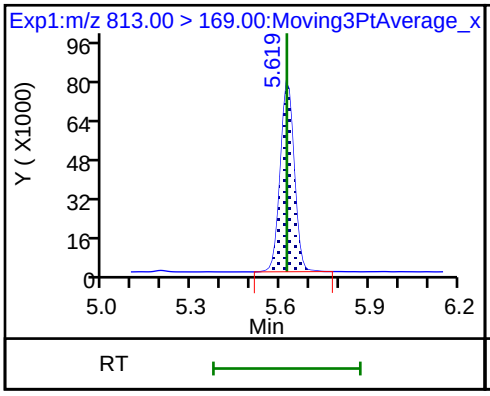
D 63 13C2 PFHxDA



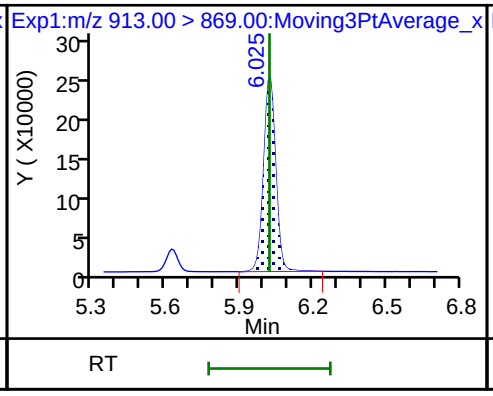
64 Perfluorohexadecanoic acid



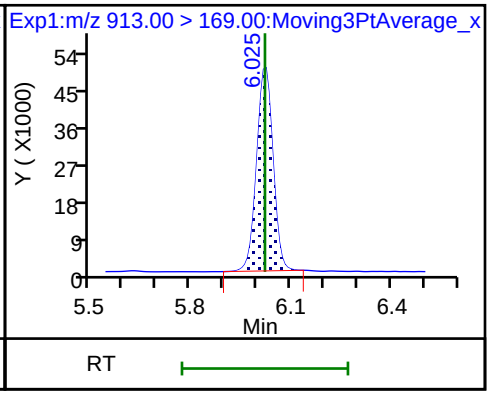
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

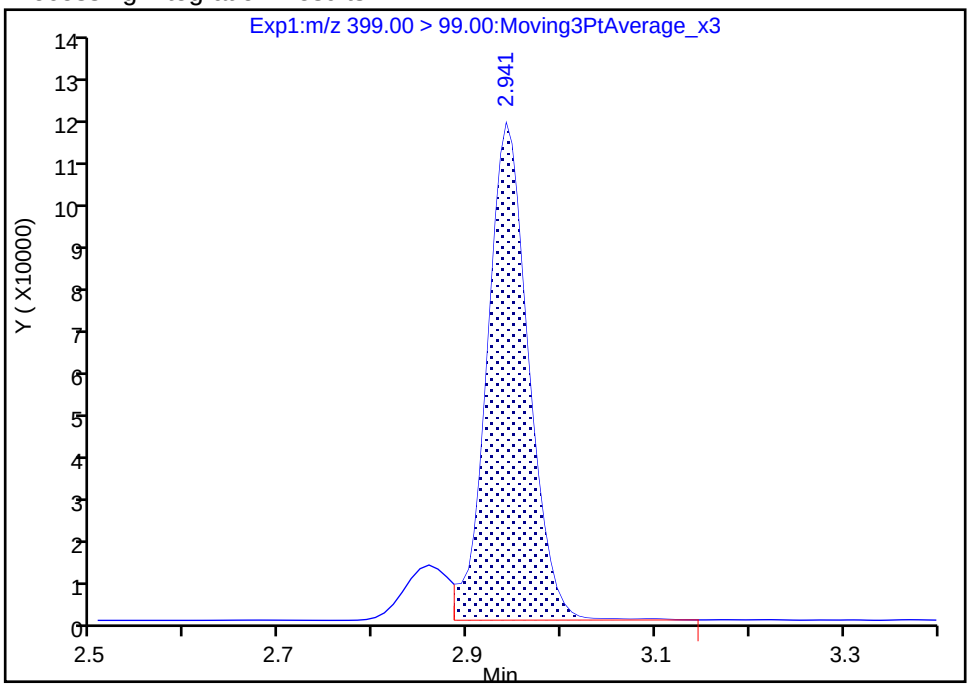
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_009.d				
Injection Date:	02-Jun-2020 15:52:40	Instrument ID:	A9		
Lims ID:	IC L4 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	4	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

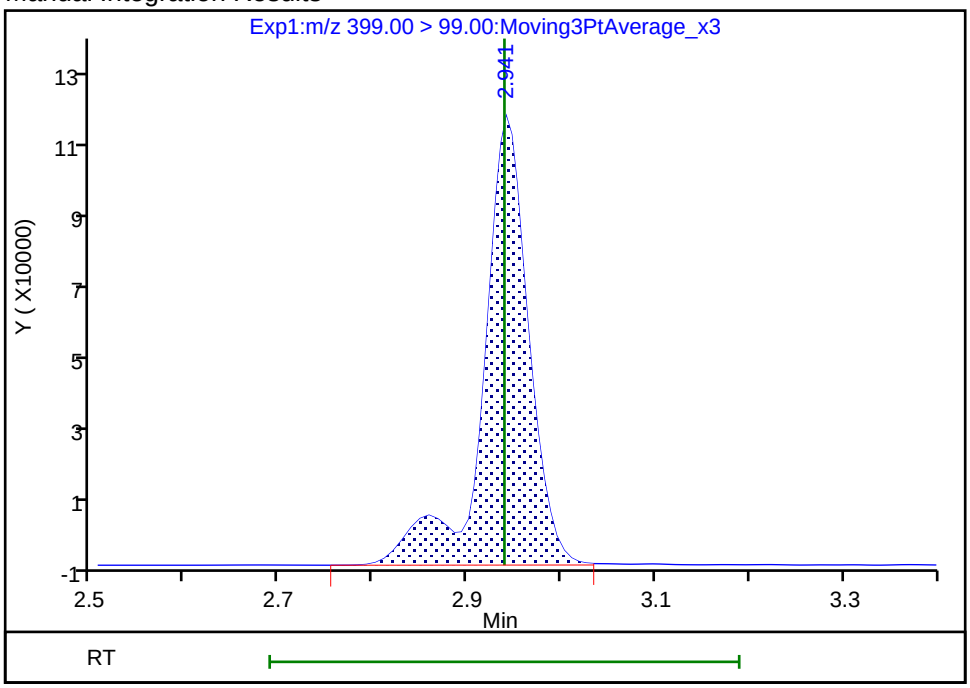
Processing Integration Results

RT: 2.94
Area: 351403
Amount: 0.865971
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 391501
Amount: 0.883719
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:39:53

Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento

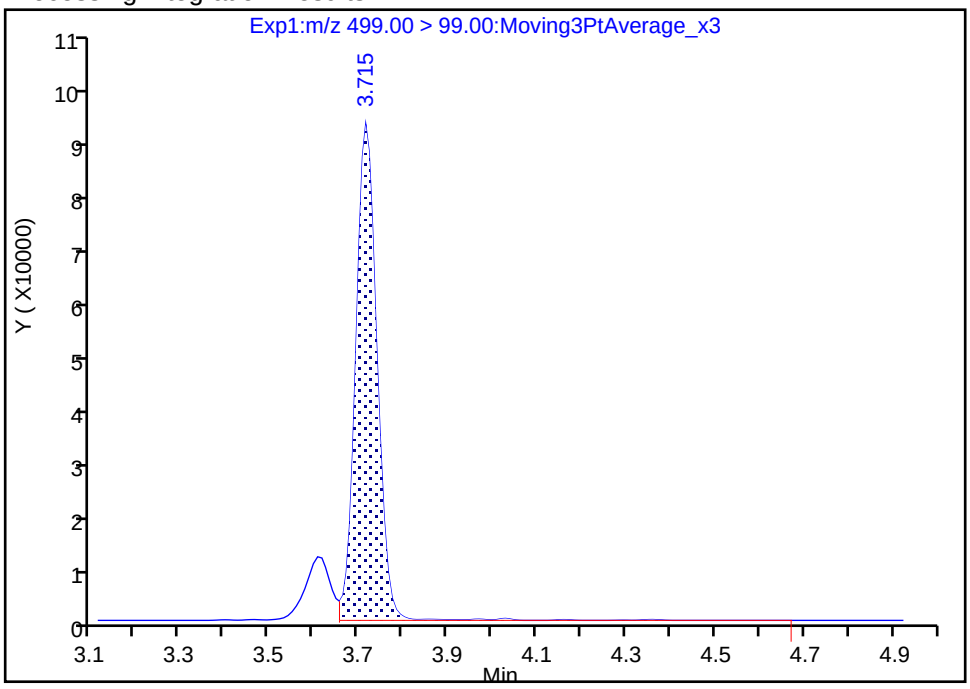
Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_009.d
Injection Date: 02-Jun-2020 15:52:40 Instrument ID: A9
Lims ID: IC L4 Full
Client ID:
Operator ID: SACINSTRLCMS02 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

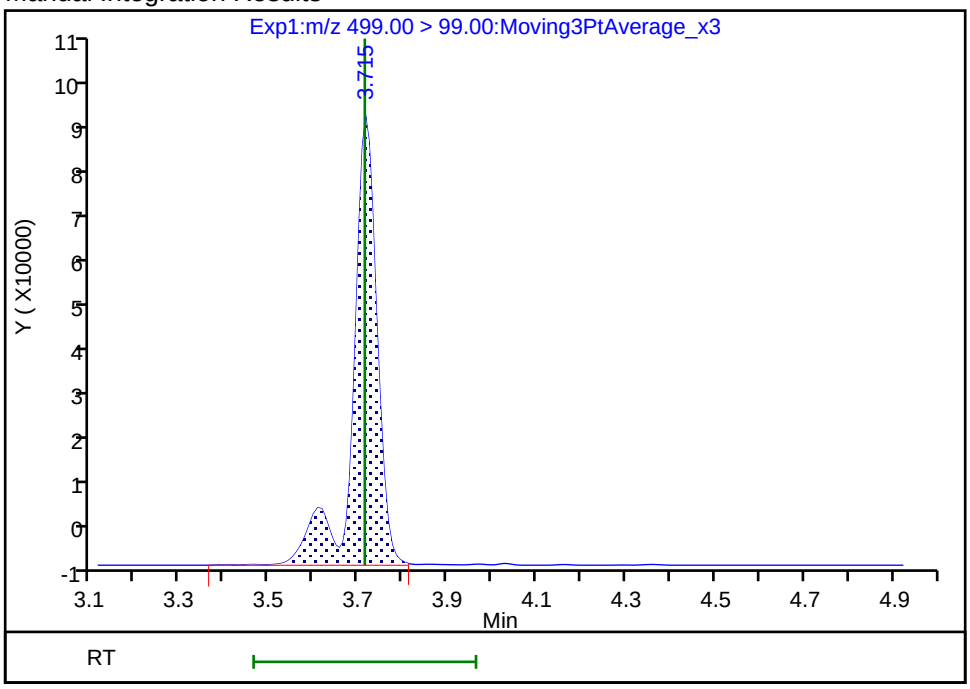
Processing Integration Results

RT: 3.72
Area: 288875
Amount: 0.899640
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 330989
Amount: 0.909031
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:40:10
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_010.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 02-Jun-2020 16:02:01 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD5 (27)
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 02-Jun-2020 20:33:00 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1042

First Level Reviewer: adamst Date: 02-Jun-2020 19:53:01
Ratio Calibration: Average of Initial Calibration

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	1.894	1.890	0.004	0.567	4663721	2.51		100	7573	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.894	1.893	0.001	1.000	2300548	2.57		103	2326	
D 4 13C5 PFPeA										
267.90 > 223.00	2.199	2.193	0.006	0.659	1687837	2.51		100	5538	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.199	2.196	0.003	1.000	1699502	2.41		96.5	361	
D 6 13C3 PFBS										
301.90 > 80.00	2.225	2.224	0.001	0.666	1988907	2.30		98.9	5672	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.225	2.224	0.001	1.000	2164012	2.33	Target=2.39	105	1397	
298.90 > 99.00	2.225	2.224	0.001	1.000	902644		2.40(1.20-3.59)	105	1005	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.516	2.511	0.005	0.754	425838	2.34		100	1886	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.516	2.511	0.005	1.000	1267018	2.42		104	5069	
D 10 13C2 PFHxA										
315.00 > 270.00	2.548	2.549	-0.001	0.763	3352977	2.51		101	4273	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.548	2.549	-0.001	1.000	3517435	2.53	Target=15.64	101	1521	
313.00 > 119.00	2.548	2.549	-0.001	1.000	247485		14.21(7.82-23.46)	101	774	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.569	2.566	0.003	1.155	2205918	2.56	Target=1.75	109	3231	
349.00 > 99.00	2.569	2.566	0.003	1.155	1189490		1.85(0.88-2.63)	109	3139	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.664	2.664	0.0	0.798	2168113	2.54		102	6267	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.677	2.666	0.011	1.005	1254498	2.50		99.9	3890	
D 15 13C4 PFHpA										
367.00 > 322.00	2.934	2.935	-0.001	0.879	2914017	2.42		97.0	5678	
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.940	2.937	0.003	1.002	4092420	2.69	Target=4.39	108	1553	
363.00 > 169.00	2.940	2.937	0.003	1.002	931328		4.39(2.20-6.59)	108	2267	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.940	2.939	0.001	1.000	2993974	2.24	Target=3.04	98.3	2647	
399.00 > 99.00	2.940	2.939	0.001	1.000	963668		3.11(1.52-4.56)	98.3	1572	M
D 17 18O2 PFHxS										
403.00 > 84.00	2.940	2.941	-0.001	0.881	2685135	2.36		99.7	3243	
19 DONA										
377.00 > 251.00	2.987	2.986	0.001	0.805	6706732	2.46	Target=2.17	105	5994	
377.00 > 85.00	2.987	2.986	0.001	0.805	3185498		2.11(1.09-3.26)	105	7568	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.317	3.318	-0.001	0.994	369835	2.42		102	2081	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.324	3.321	0.003	1.002	848431	2.45		103	3092	
$ 21 13C8 PFOA										
421.00 > 376.00	3.338	3.333	0.005	1.000	3593159	2.49		102	6967	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.338	3.334	0.004	0.899	4118276	2.73	Target=3.82	115	5075	
449.00 > 99.00	3.338	3.334	0.004	0.899	1017436		4.05(1.91-5.72)	115	2677	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.338	3.339	-0.001	1.000	4552162	2.41	Target=2.82	96.5	440	
413.00 > 169.00	3.338	3.339	-0.001	1.000	1583619		2.87(1.41-4.23)	96.5	2838	
D 26 13C4 PFOA										
417.00 > 372.00	3.338	3.339	-0.001	1.000	3752123	2.55		102	6275	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.339	-0.001		3861129	2.50			5690	
$ 27 13C8 PFOS										
507.00 > 99.00	3.712	3.709	0.003	1.112	795594	2.36		98.7	2095	
D 31 13C4 PFOS										
503.00 > 80.00	3.712	3.714	-0.002	1.112	3412696	2.35		98.2	3966	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.720	3.714	0.006	1.002	3911550	2.51	Target=4.25	108	5019	
499.00 > 99.00	3.712	3.714	-0.002	1.000	850056		4.60(2.13-6.38)	108	1374	M
30 Perfluorononanoic acid										
463.00 > 419.00	3.727	3.728	-0.001	1.000	4158385	2.64	Target=5.46	106	996	
463.00 > 169.00	3.727	3.728	-0.001	1.000	746482		5.57(2.73-8.19)	106	2341	
D 29 13C5 PFNA										
468.00 > 423.00	3.727	3.728	-0.001	1.117	3612126	2.49		99.7	6498	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.918	3.920	-0.002	1.056	4090827	2.49		107	5829	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.065	4.061	0.004	1.095	2365772	2.44	Target=4.97	102	4720	
549.00 > 99.00	4.065	4.061	0.004	1.095	472274		5.01(2.48-7.45)	102	3007	
D 36 13C8 FOSA										
506.00 > 78.00	4.092	4.087	0.005	1.226	1399977	2.43		97.1	2849	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.092	4.087	0.005	1.000	4846735	2.66		106	4493	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.092	4.088	0.004	1.000	4435763	2.60	Target=14.66	104	1352	
513.00 > 169.00	4.092	4.088	0.004	1.000	316767		14.00(7.33-21.99)	104	244	
D 33 13C2 PFDA										
515.00 > 470.00	4.092	4.088	0.004	1.226	4257579	2.51		100	11662	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.092	4.091	0.001	1.000	975603	2.49		104	2113	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.092	4.091	0.001	1.226	425414	2.34		97.8	2987	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.253	4.252	0.001	1.274	1687498	2.50		100.0	3069	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.262	4.257	0.005	1.002	1624665	2.60		104	2077	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.384	4.383	0.001	1.181	3096236	2.69	Target=4.49	112	3312	
599.00 > 99.00	4.384	4.383	0.001	1.181	664734		4.66(2.25-6.74)	112	1913	
D 46 13C2 PFUnA										
565.00 > 520.00	4.409	4.407	0.002	1.321	3734757	2.52		101	8552	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.409	4.407	0.002	1.000	2912081	2.52	Target=10.82	101	898	
563.00 > 169.00	4.409	4.407	0.002	1.000	293914		9.91(5.41-16.23)	101	2580	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.418	4.413	0.005	1.323	1277571	2.49		99.7	1176	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.426	4.423	0.003	1.002	1143757	2.50		99.9	2033	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.546	4.543	0.003	1.225	5652357	2.53		108	9366	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.546	4.549	-0.003	1.362	2144837	12.7		102	5235	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.564	4.560	0.004	1.004	620271	2.58		103	2256	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.573	4.568	0.005	1.370	835843	2.45		97.9	213	
50 NMeFOSA										
512.00 > 169.00	4.573	4.573	0.0	1.000	777579	2.64		105	1053	
D 56 13C2 PFDoA										
615.00 > 570.00	4.694	4.692	0.002	1.406	3415752	2.43		97.3	11692	
52 Perfluorododecanoic acid										
613.00 > 569.00	4.694	4.696	-0.002	1.000	3817075	2.66	Target=8.20	107	1303	
613.00 > 169.00	4.694	4.696	-0.002	1.000	437259		8.73(4.10-12.30)	107	2372	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.713	4.711	0.002	1.152	843540	2.42		100	3534	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.722	4.720	0.002	1.415	2082215	12.2		97.9	5885	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.731	4.734	-0.003	1.002	667928	2.73		109	3220	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.748	4.745	0.003		639203	2.49		99.4	1403	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.756	4.752	0.004	1.002	873214	2.67		107	826	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.927	4.923	0.004	1.327	326011	2.54	Target=0.67	105	2457	
699.00 > 99.00	4.918	4.923	-0.005	1.325	511016		0.64(0.33-1.00)	105	3596	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.952	4.955	-0.003	1.055	2607937	2.67	Target=5.48	107	1574	
663.00 > 169.00	4.952	4.955	-0.003	1.055	491110		5.31(2.74-8.23)	107	2647	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.194	5.193	0.001	1.556	3189603	2.34		93.5	6062	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.194	5.195	-0.001	1.000	590595	2.72	Target=1.49	109	4024	
713.00 > 219.00	5.194	5.195	-0.001	1.000	387383		1.52(0.75-2.24)	109	1397	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.624	5.621	0.003	1.685	3198367	2.42		96.7	6130	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.624	5.621	0.003	1.000	2846040	2.48	Target=5.24	99.1	523	
813.00 > 169.00	5.624	5.621	0.003	1.000	553923		5.14(2.62-7.87)	99.1	2118	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.022	6.021	0.001	1.071	1978869	2.72	Target=4.86	109	492	
913.00 > 169.00	6.022	6.021	0.001	1.071	392431		5.04(2.43-7.29)	109	805	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00027 Amount Added: 1.00 Units: mL

Report Date: 02-Jun-2020 20:33:01 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_010.d

Injection Date: 02-Jun-2020 16:02:01 Instrument ID: A9

Lims ID: IC L5 Full

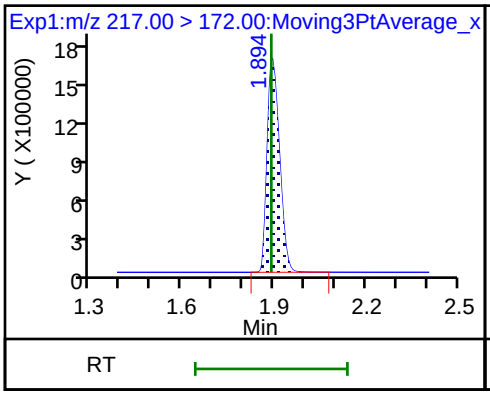
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 5 Worklist Smp#: 6

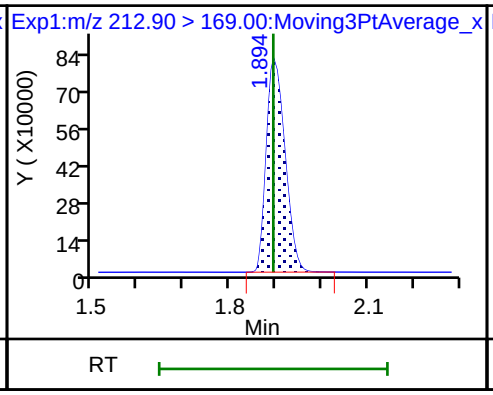
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

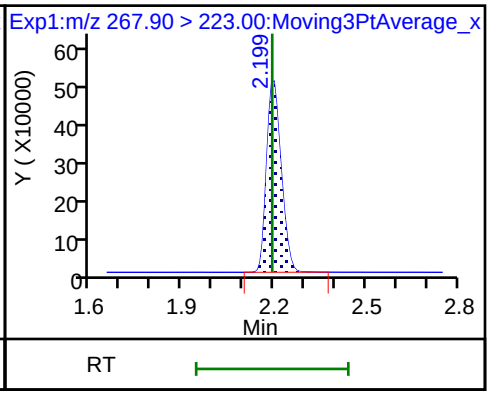
D 1 13C4 PFBA



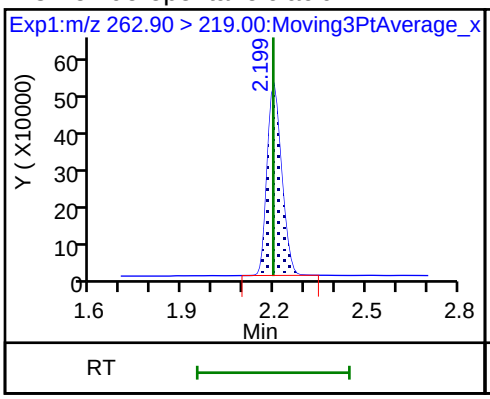
2 Perfluorobutanoic acid



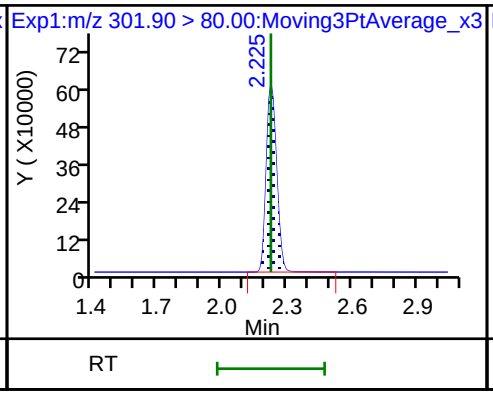
D 4 13C5 PFPeA



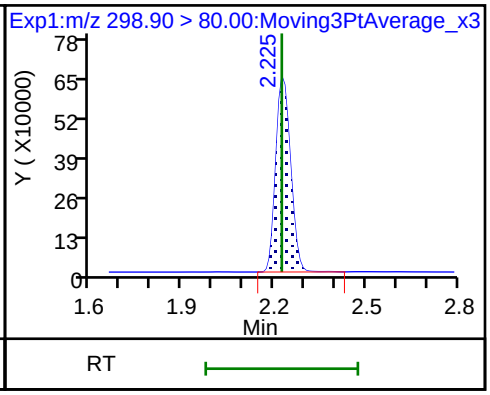
3 Perfluoropentanoic acid



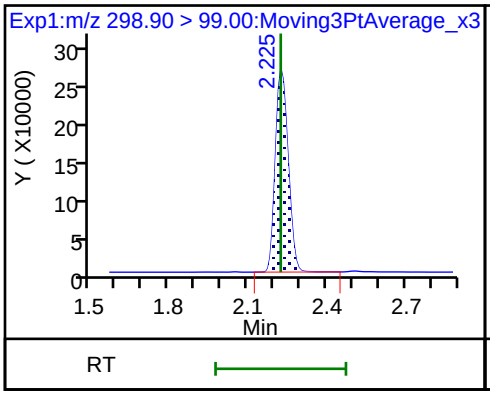
D 6 13C3 PFBS



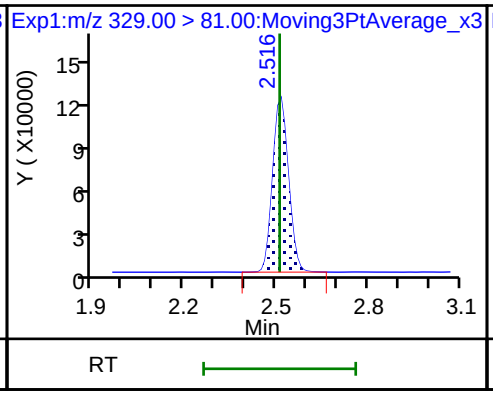
5 Perfluorobutanesulfonic acid



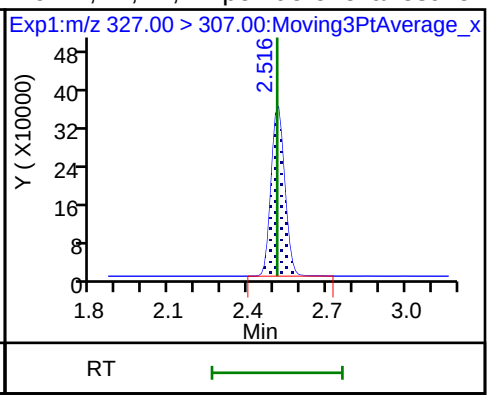
5 Perfluorobutanesulfonic acid



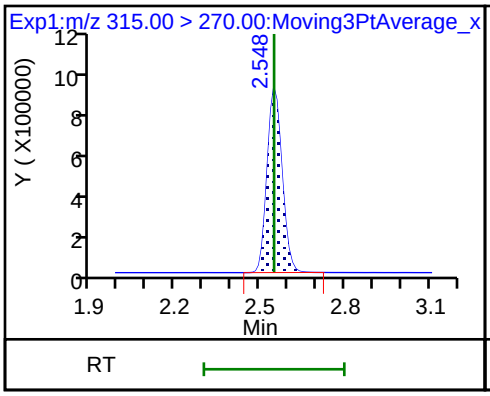
D 8 M2-4:2 FTS



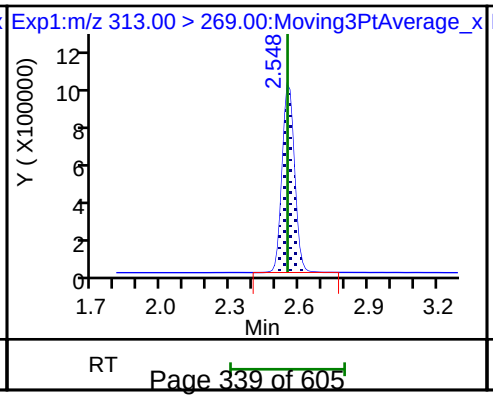
9 1H,1H,2H,2H-perfluorohexanesulfo



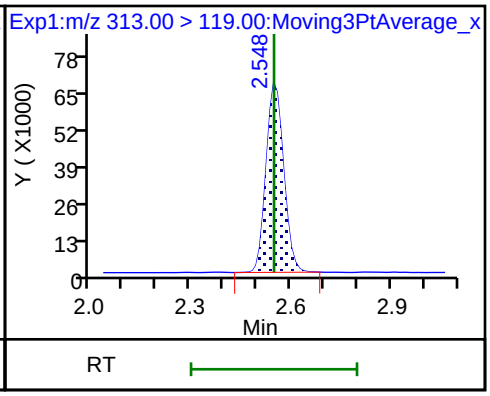
D 10 13C2 PFHxA



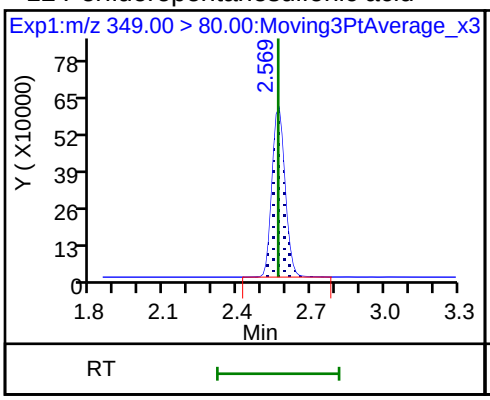
11 Perfluorohexanoic acid



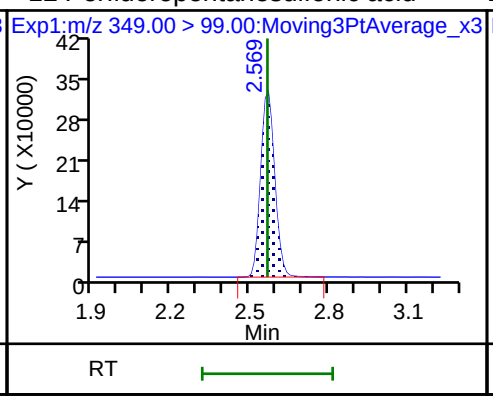
11 Perfluorohexanoic acid



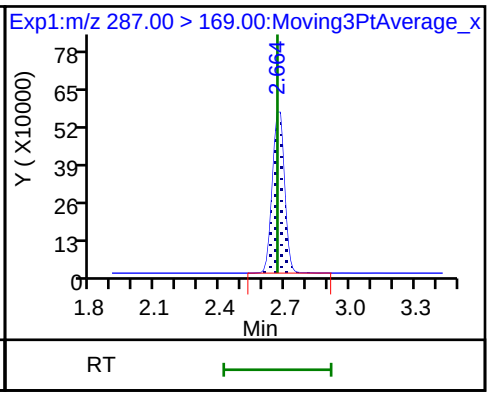
12 Perfluoropentanesulfonic acid



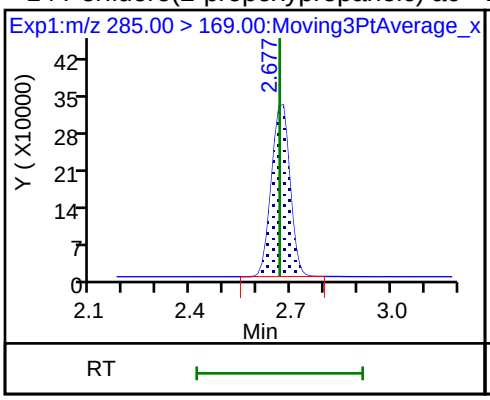
12 Perfluoropentanesulfonic acid



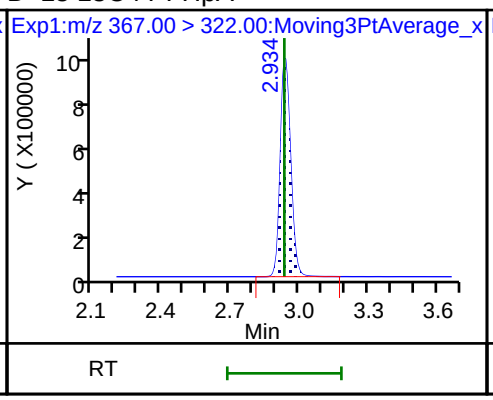
D 13 13C3 HFPO-DA



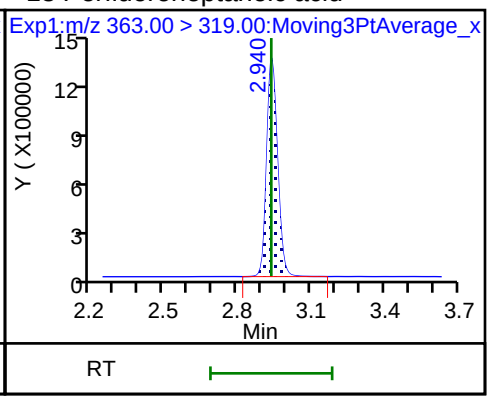
14 Perfluoro(2-propoxypropanoic) ac



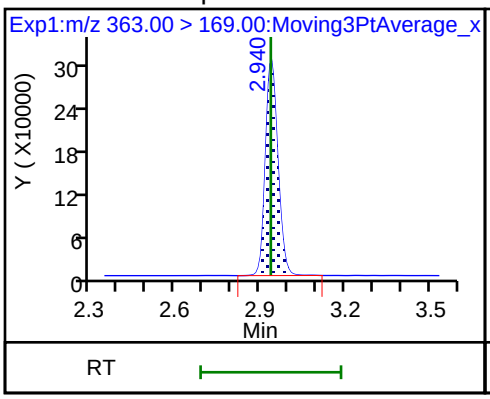
D 15 13C4 PFHpA



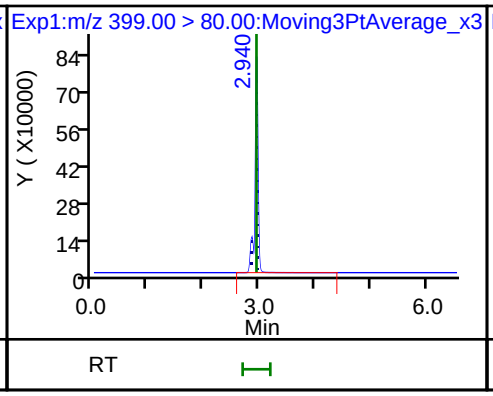
18 Perfluoroheptanoic acid



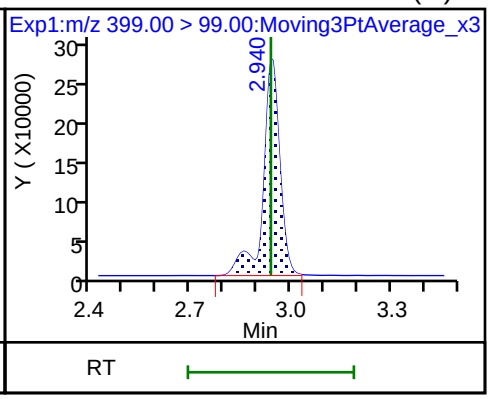
18 Perfluoroheptanoic acid



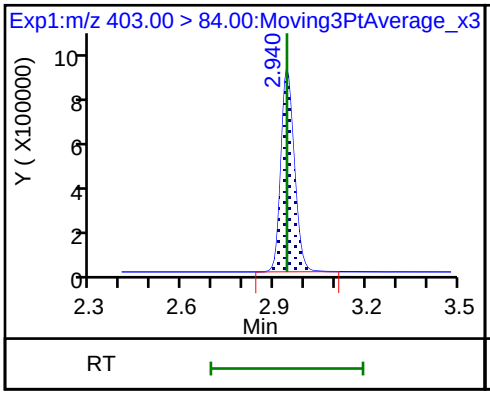
16 Perfluorohexanesulfonic acid



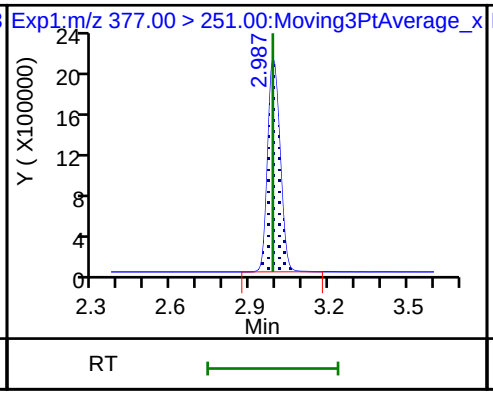
16 Perfluorohexanesulfonic acid (M)



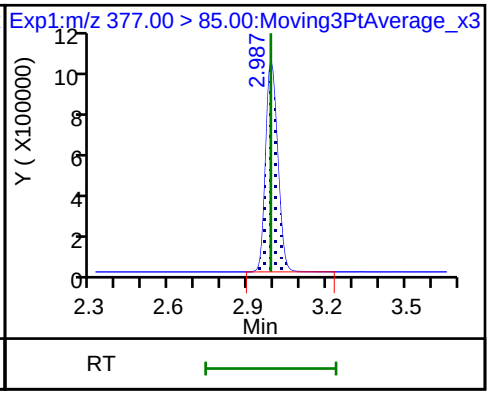
D 17 18O2 PFHxS



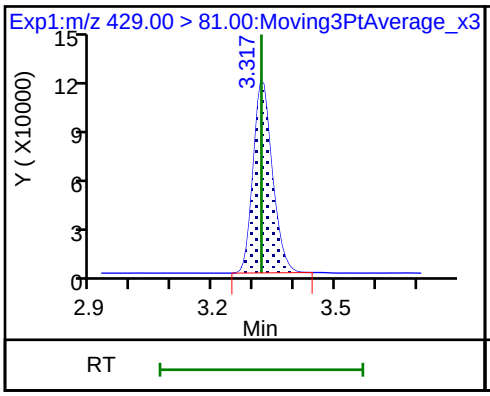
19 DONA



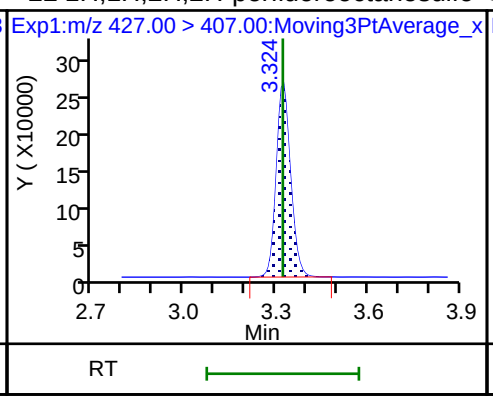
19 DONA



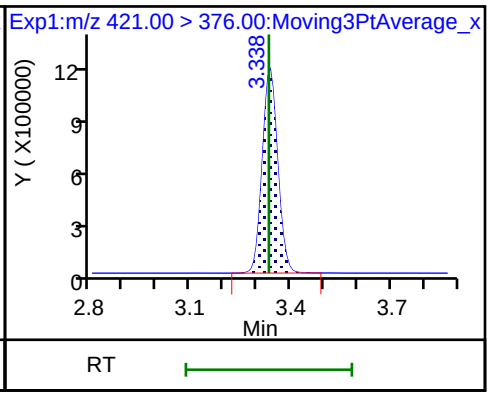
D 20 M2-6:2 FTS



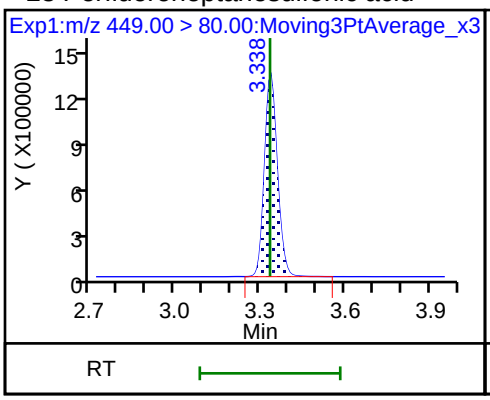
22 1H,1H,2H,2H-perfluorooctanesulfo



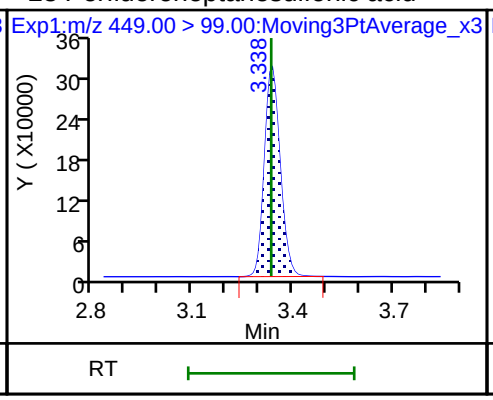
$ 21 13C8 PFOA



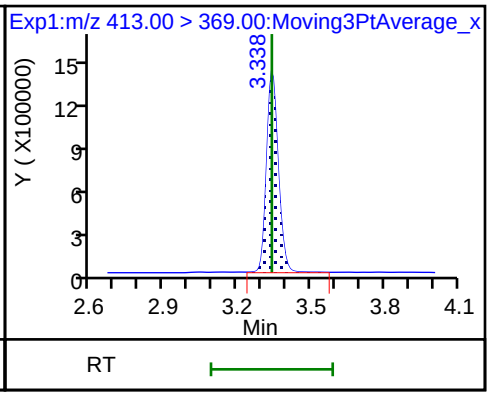
23 Perfluoroheptanesulfonic acid



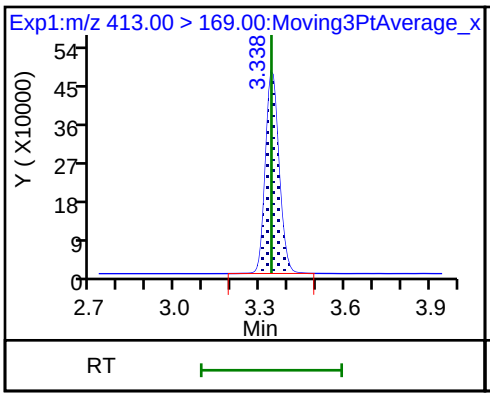
23 Perfluoroheptanesulfonic acid



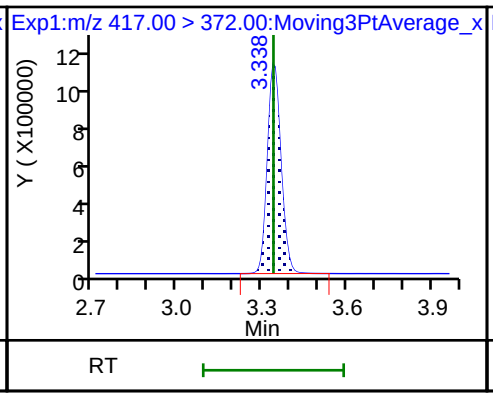
24 Perfluorooctanoic acid



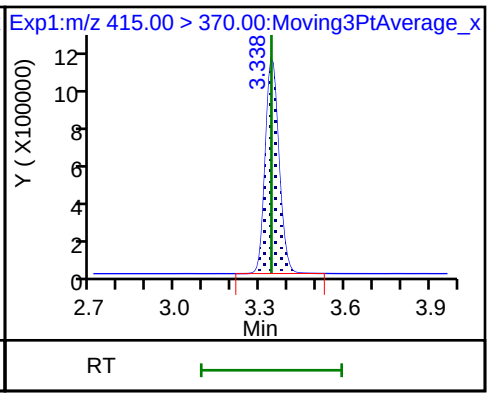
24 Perfluorooctanoic acid



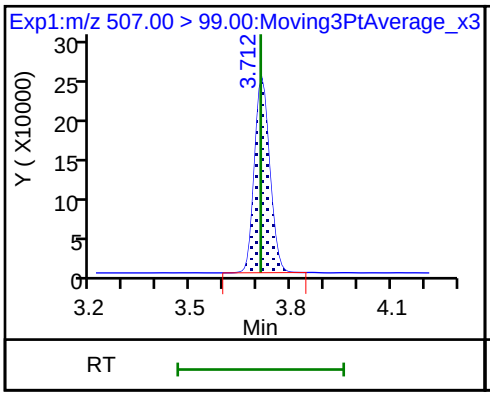
D 26 13C4 PFOA



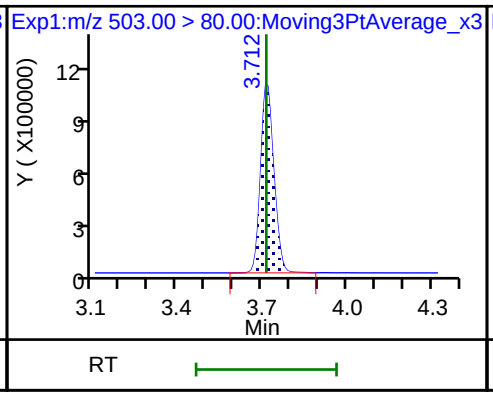
* 25 13C2 PFOA



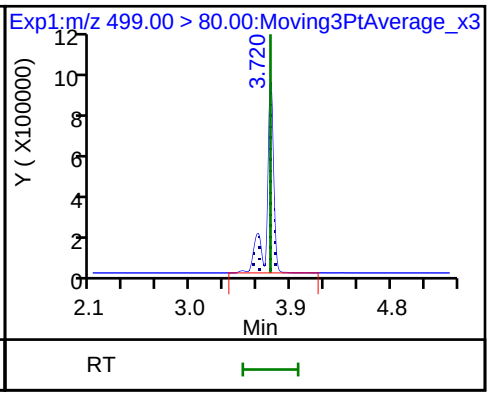
$ 27 13C8 PFOS



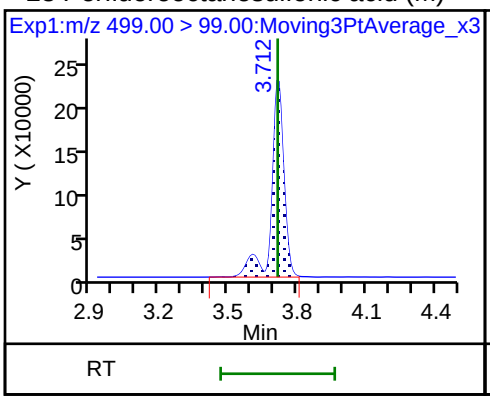
D 31 13C4 PFOS



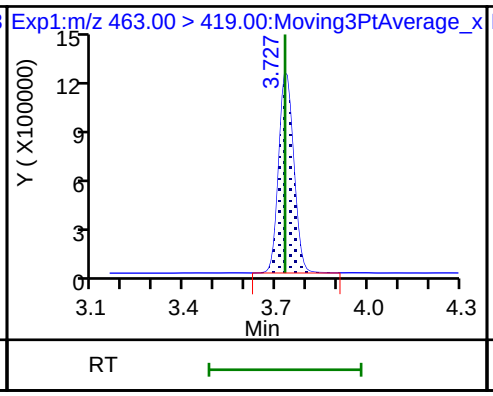
28 Perfluorooctanesulfonic acid



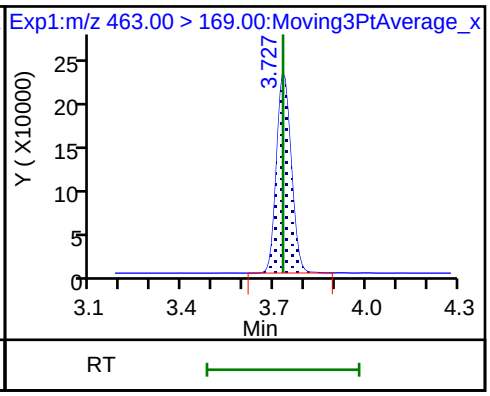
28 Perfluorooctanesulfonic acid (M)



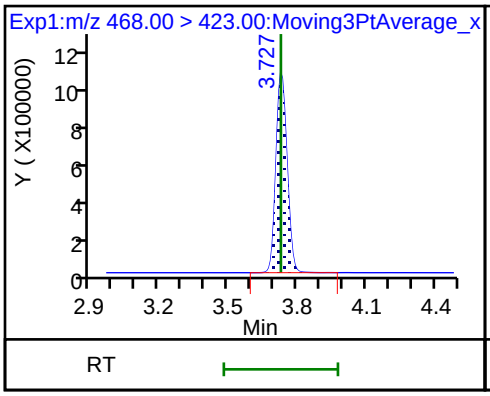
30 Perfluorononanoic acid



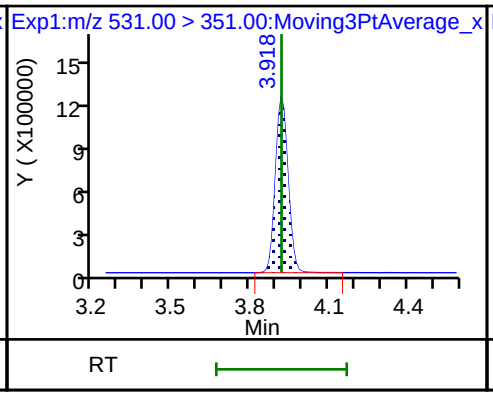
30 Perfluorononanoic acid



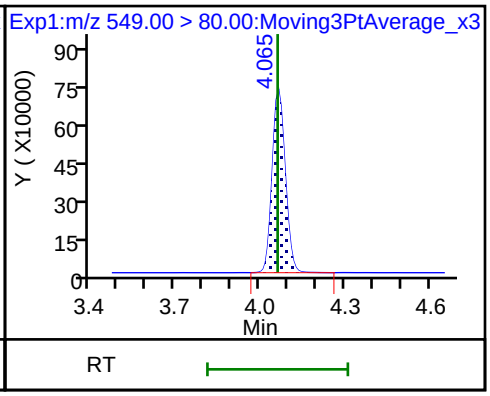
D 29 13C5 PFNA



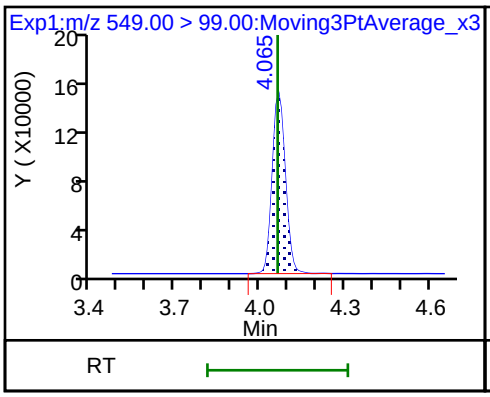
32 9-Chlorohexadecafluoro-3-oxanona



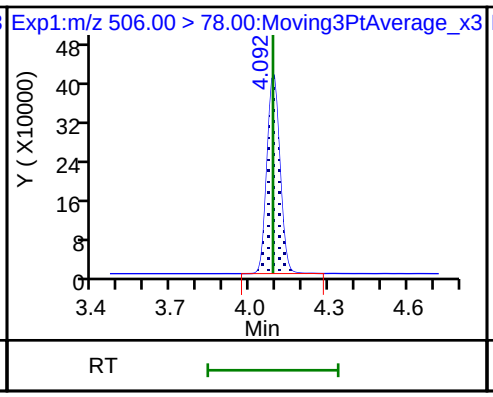
35 Perfluorononanesulfonic acid



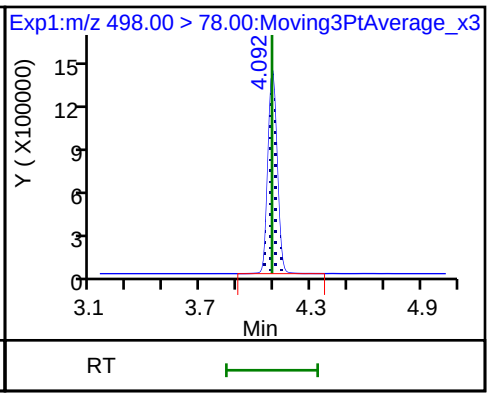
35 Perfluorononanesulfonic acid



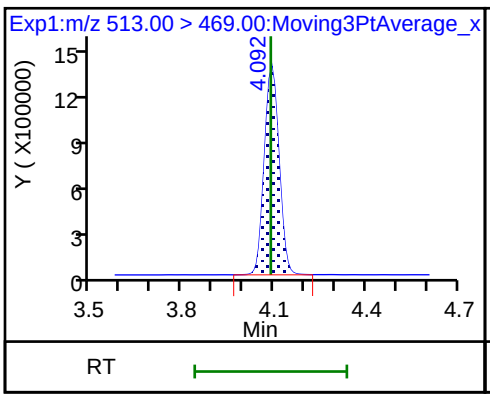
D 36 13C8 FOSA



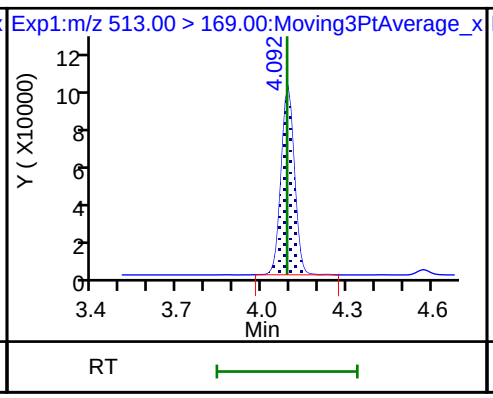
34 Perfluorooctanesulfonamide



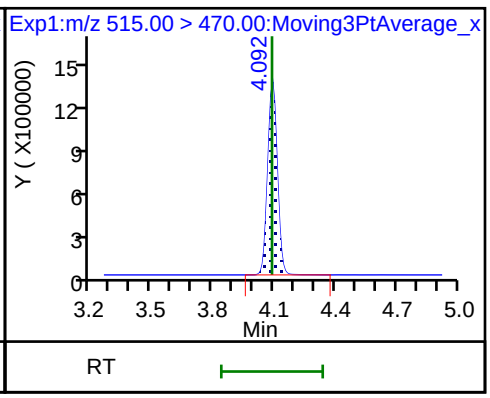
38 Perfluorodecanoic acid



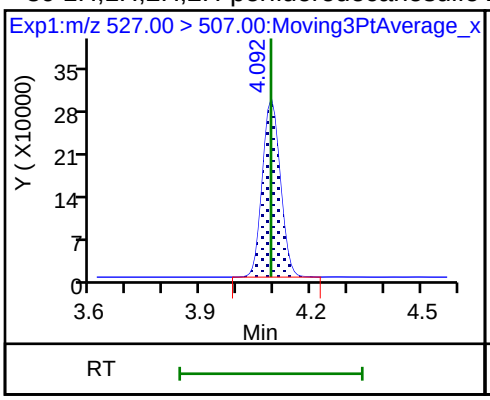
38 Perfluorodecanoic acid



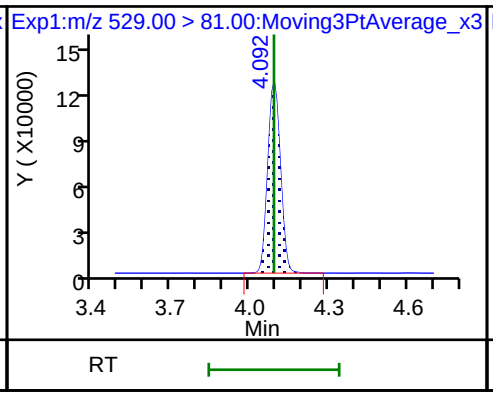
D 33 13C2 PFDA



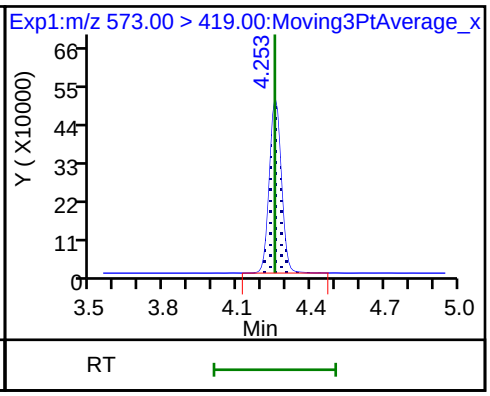
39 1H,1H,2H,2H-perfluorodecanesulfo



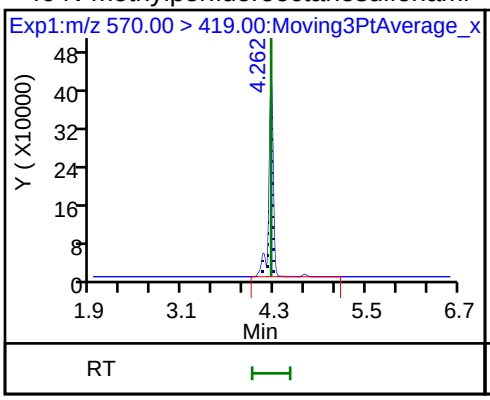
D 37 M2-8:2 FTS



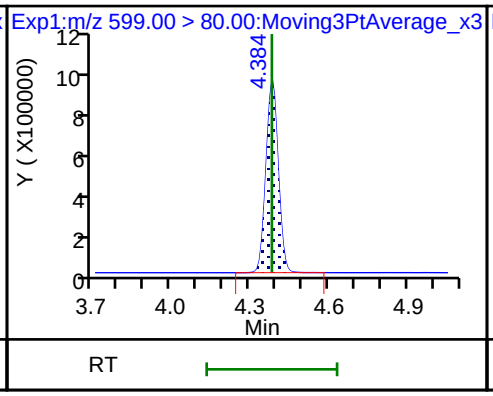
D 41 d3-NMeFOSAA



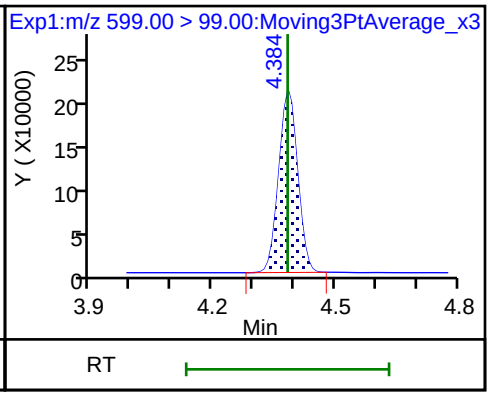
40 N-methylperfluorooctanesulfonami



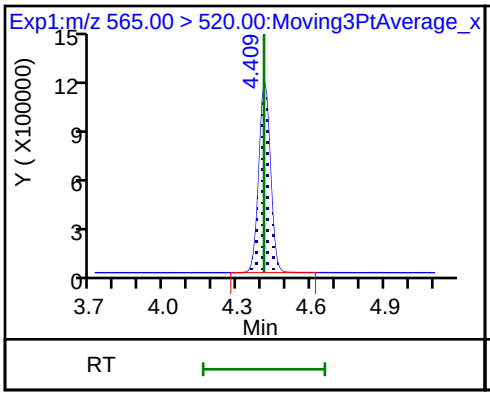
42 Perfluorodecanesulfonic acid



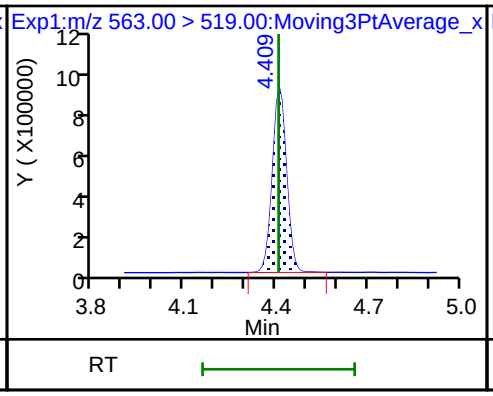
42 Perfluorodecanesulfonic acid



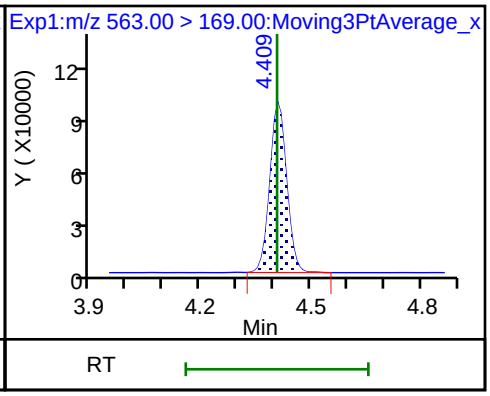
D 46 13C2 PFUnA



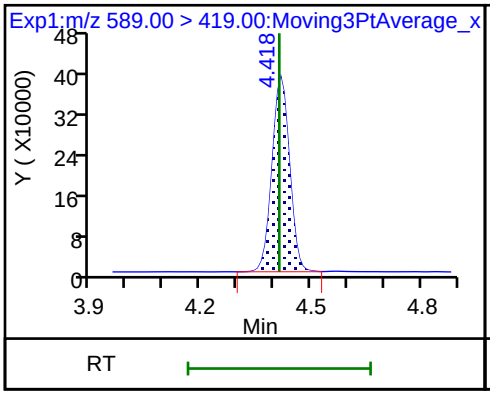
43 Perfluoroundecanoic acid



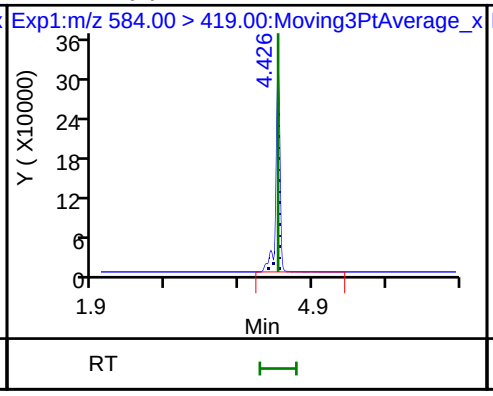
43 Perfluoroundecanoic acid



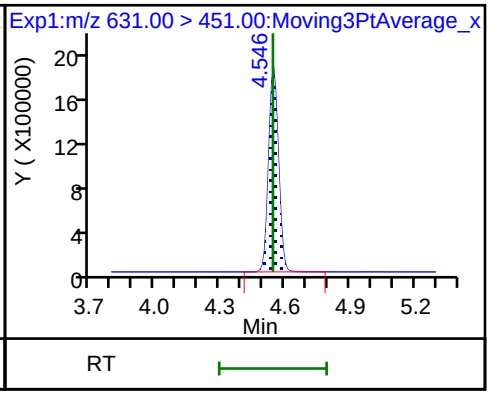
D 45 d5-NEtFOSAA



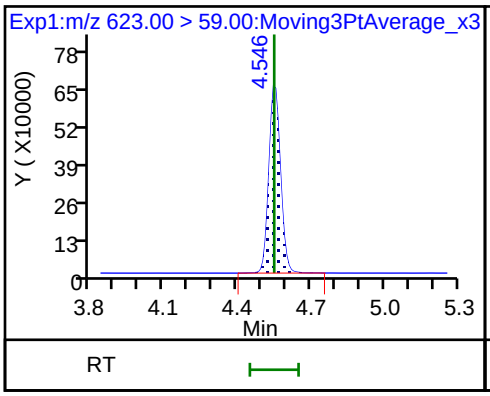
44 N-ethylperfluorooctanesulfonamid



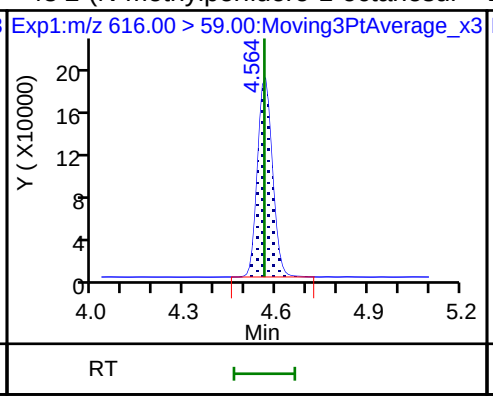
51 11-Chloroeicosafluoro-3-oxaundec



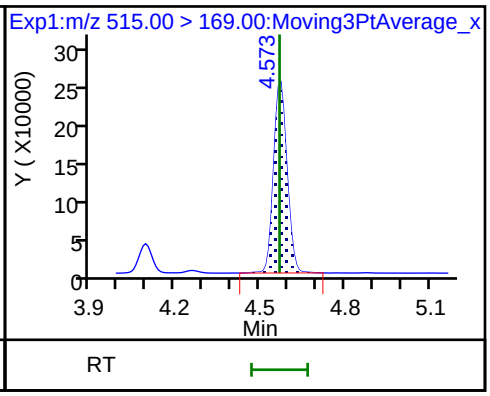
D 47 d7-N-MeFOSE-M



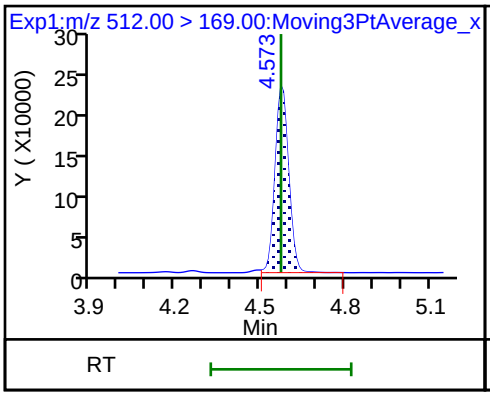
48 2-(N-methylperfluoro-1-octanesul



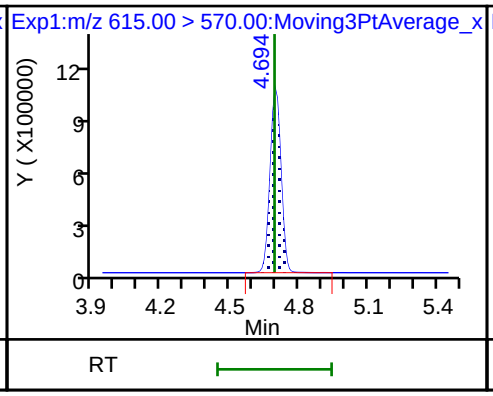
D 49 d-N-MeFOSA-M



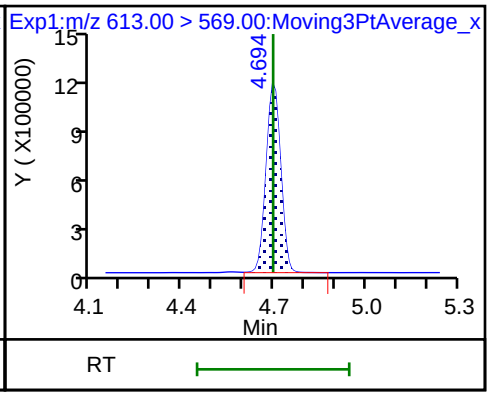
50 NMeFOSA



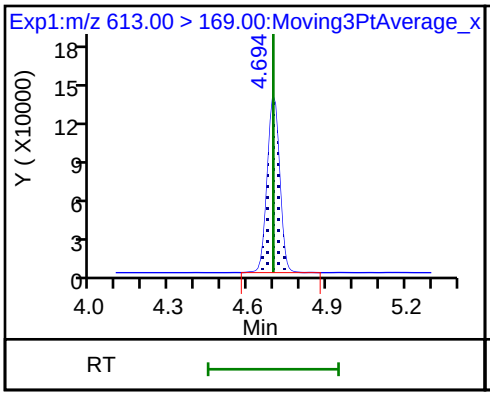
D 56 13C2 PFDoA



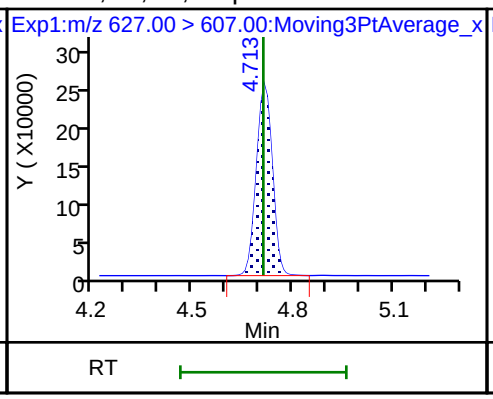
52 Perfluorododecanoic acid



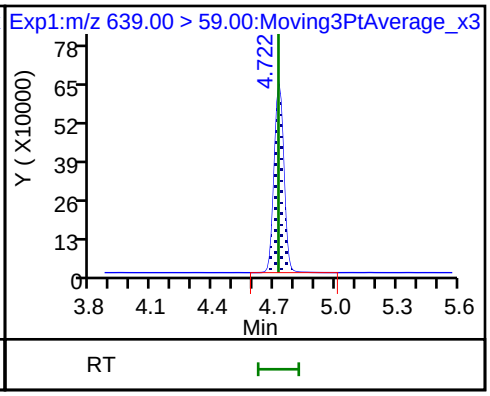
52 Perfluorododecanoic acid



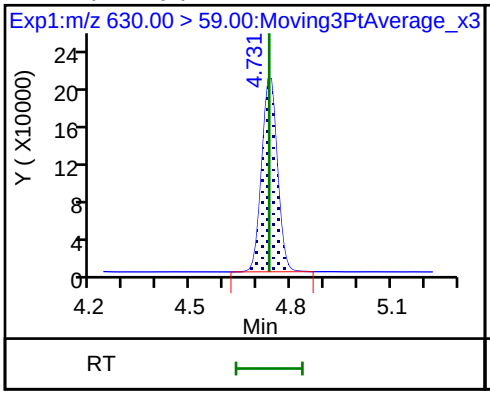
55 1H,1H,2H,2H-perfluorododecanesul



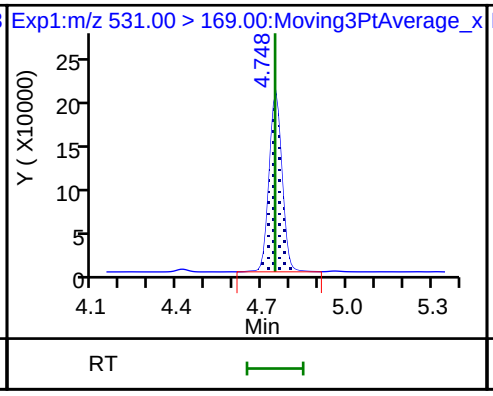
D 53 d9-N-EtFOSE-M



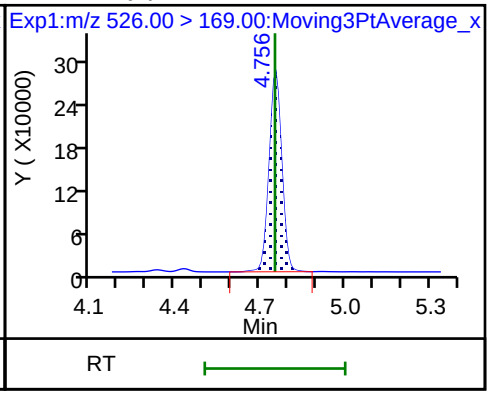
54 2-(N-ethylperfluoro-1-octanesulf



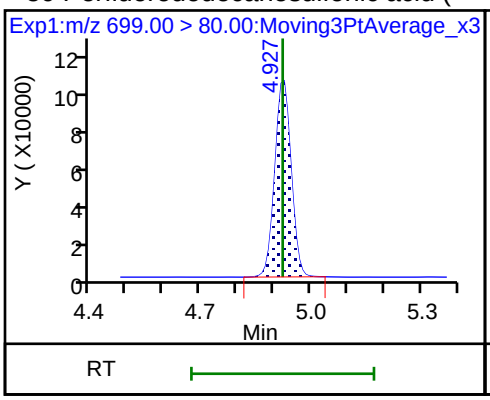
D 58 d-N-EtFOSA-M



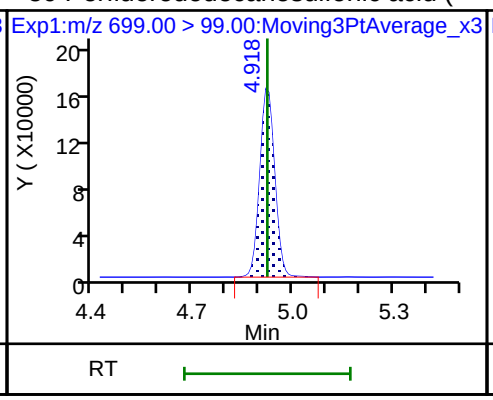
57 N-ethylperfluoro-1-octanesulfona



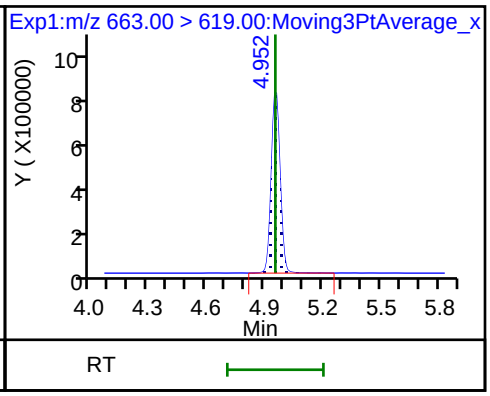
59 Perfluorododecanesulfonic acid (



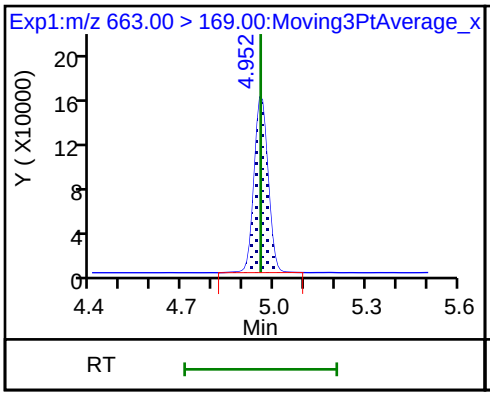
59 Perfluorododecanesulfonic acid (



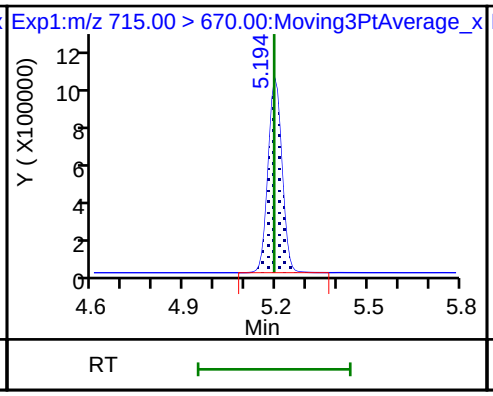
60 Perfluorotridecanoic acid



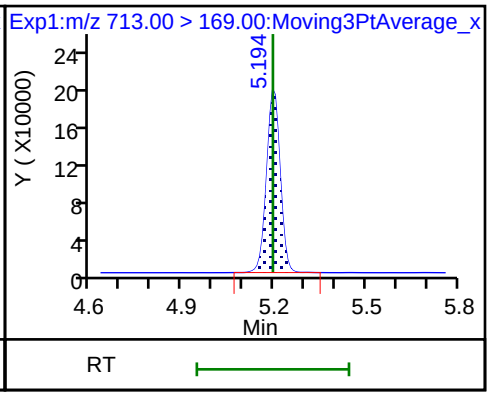
60 Perfluorotridecanoic acid



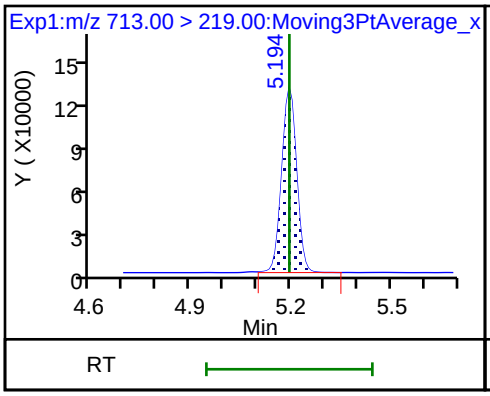
D 62 13C2 PFTeDA



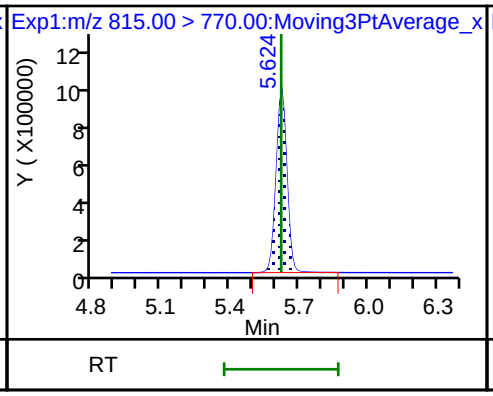
61 Perfluorotetradecanoic acid



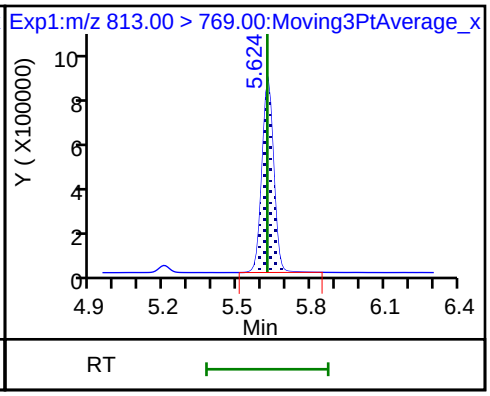
61 Perfluorotetradecanoic acid



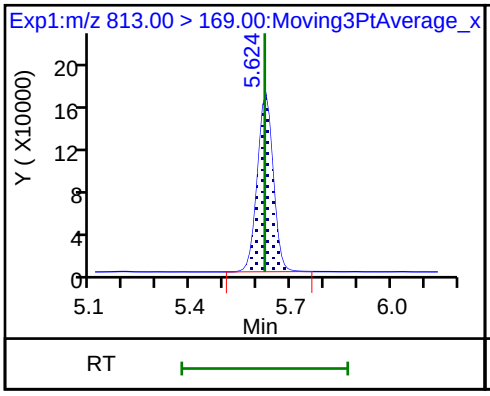
D 63 13C2 PFHxDA



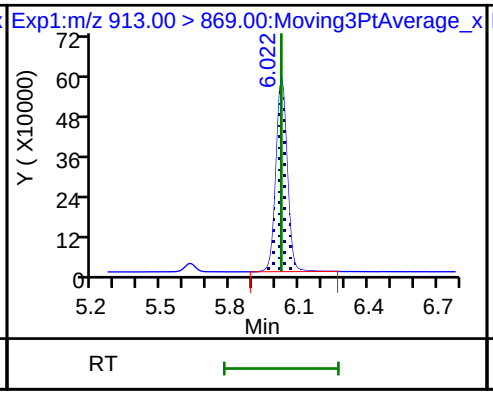
64 Perfluorohexadecanoic acid



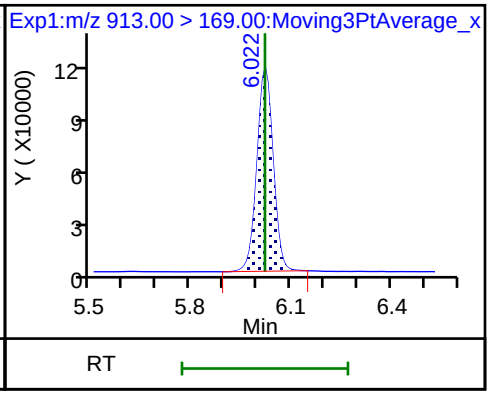
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

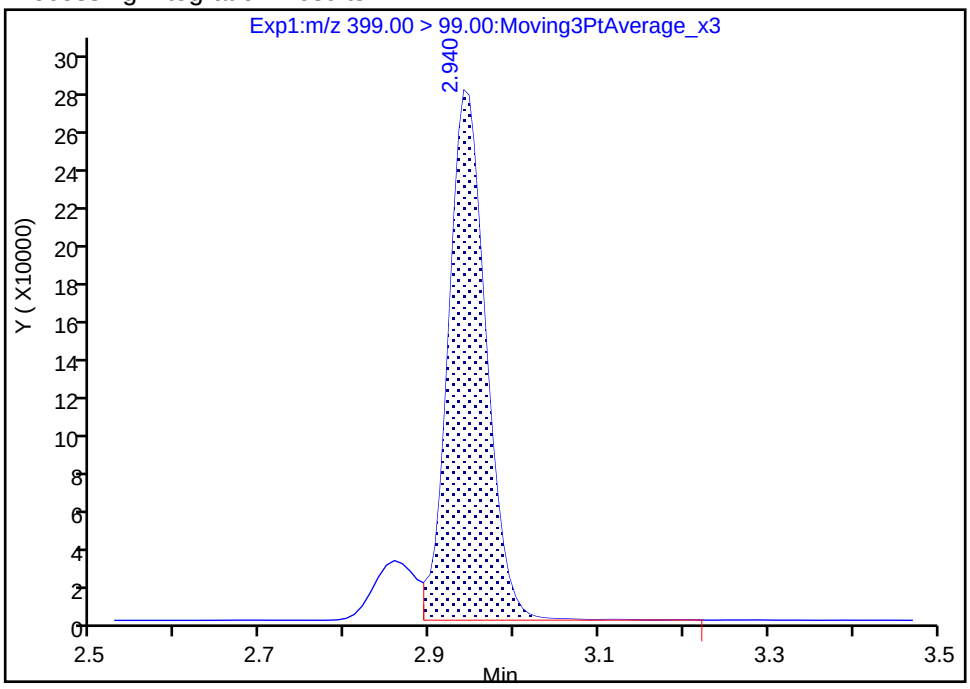
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_010.d				
Injection Date:	02-Jun-2020 16:02:01	Instrument ID:	A9		
Lims ID:	IC L5 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	5	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

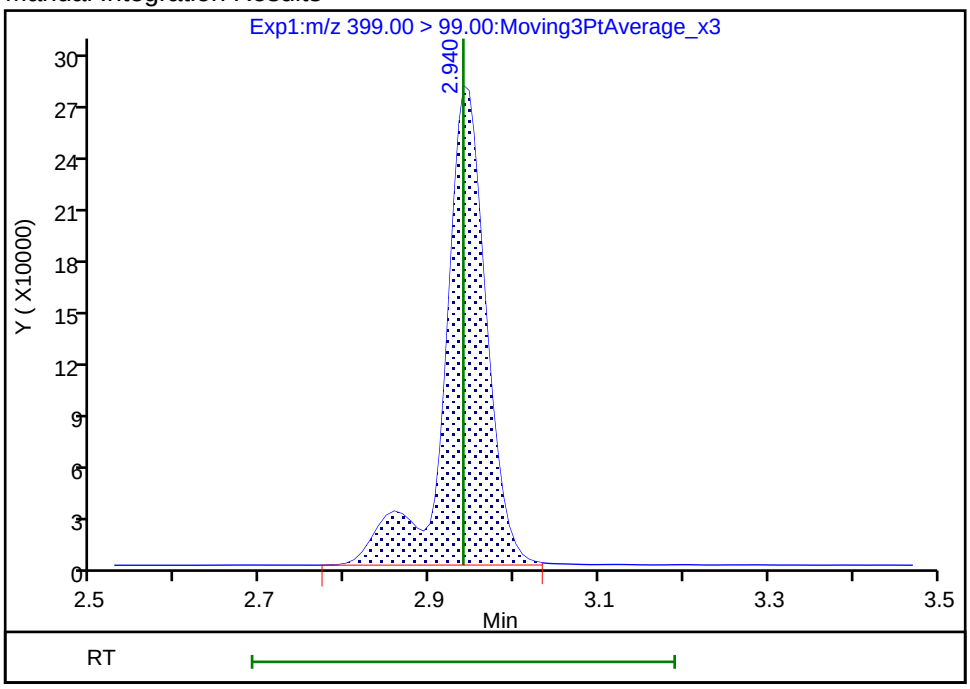
Processing Integration Results

RT: 2.94
Area: 859232
Amount: 2.236592
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 963668
Amount: 2.236592
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:52:30
Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

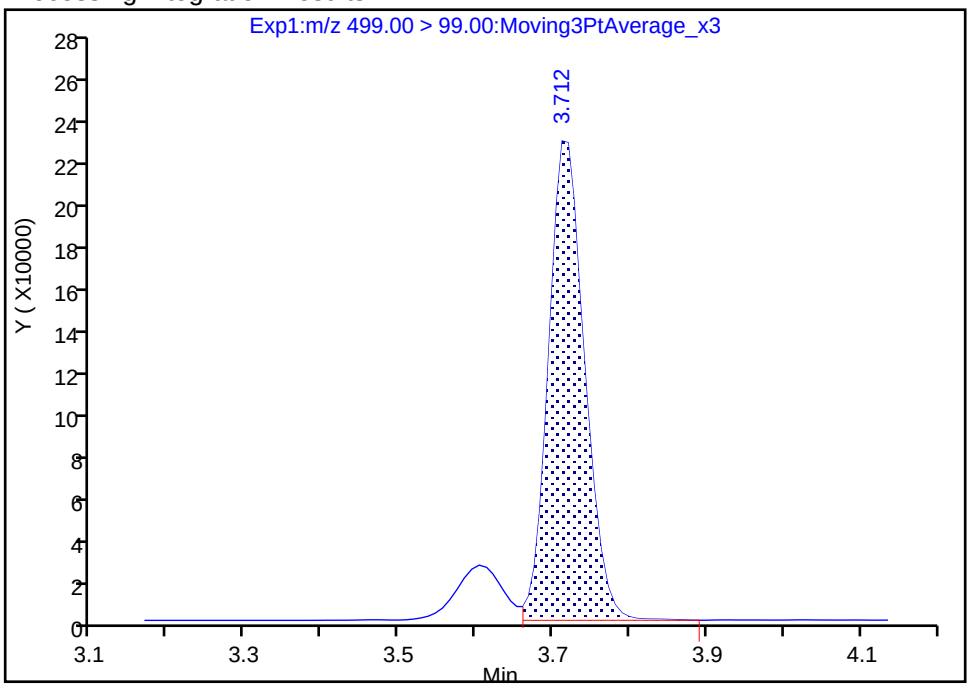
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_010.d				
Injection Date:	02-Jun-2020 16:02:01	Instrument ID:	A9		
Lims ID:	IC L5 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	5	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

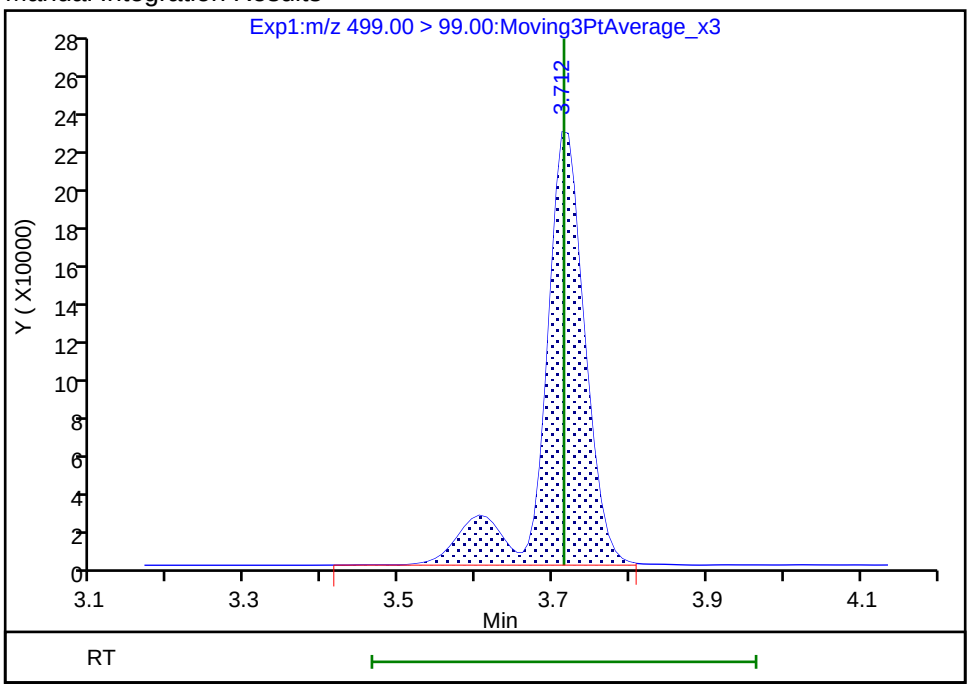
Processing Integration Results

RT: 3.71
Area: 742049
Amount: 2.511761
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 850056
Amount: 2.511761
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:52:45

Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_011.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 02-Jun-2020 16:11:23 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD6 (23)
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 02-Jun-2020 20:33:09 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1042

First Level Reviewer: adamst Date: 02-Jun-2020 19:54:52
Ratio Calibration: Average of Initial Calibration

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	1.887	1.890	-0.003	0.565	4844871	2.48		99.3	7768	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.887	1.893	-0.006	1.000	4799188	5.17		103	4605	
D 4 13C5 PFPeA										
267.90 > 223.00	2.190	2.193	-0.003	0.656	1818753	2.58		103	5666	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.190	2.196	-0.006	1.000	3568498	4.70		94.0	739	
D 6 13C3 PFBS										
301.90 > 80.00	2.223	2.224	-0.001	0.666	2359391	2.60		112	4607	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.223	2.224	-0.001	1.000	4817084	4.37	Target=2.39	98.8	2549	
298.90 > 99.00	2.223	2.224	-0.001	1.000	2021122		2.38(1.20-3.59)	98.8	2303	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.503	2.511	-0.008	0.750	438111	2.30		98.4	3351	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.503	2.511	-0.008	1.000	2639400	4.90		105	8799	
D 10 13C2 PFHxA										
315.00 > 270.00	2.546	2.549	-0.003	0.763	3466680	2.48		99.1	4448	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.546	2.549	-0.003	1.000	6992911	4.86	Target=15.64	97.3	2865	
313.00 > 119.00	2.546	2.549	-0.003	1.000	482491		14.49(7.82-23.46)	97.3	2069	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.557	2.566	-0.009	1.150	4557205	4.45	Target=1.75	94.9	4741	
349.00 > 99.00	2.557	2.566	-0.009	1.150	2613899		1.74(0.88-2.63)	94.9	2662	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.660	2.664	-0.004	0.797	2290336	2.56		102	6194	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.660	2.666	-0.006	1.000	2662980	5.02		100	5855	
D 15 13C4 PFHpA										
367.00 > 322.00	2.934	2.935	-0.001	0.879	3127177	2.48		99.2	4640	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.940	2.939	0.001	1.000	6380770	4.53	Target=3.04	99.5	2235	
399.00 > 99.00	2.940	2.939	0.001	1.000	2034029		3.14(1.52-4.56)	99.5	1432	M
D 17 18O2 PFHxS										
403.00 > 84.00	2.940	2.941	-0.001	0.881	2827430	2.37		100	4317	
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.934	2.937	-0.003	1.000	8040953	4.92	Target=4.39	98.4	2717	
363.00 > 169.00	2.934	2.937	-0.003	1.000	1919724		4.19(2.20-6.59)	98.4	3583	
19 DONA										
377.00 > 251.00	2.980	2.986	-0.006	0.803	13524285	4.61	Target=2.17	97.9	8359	
377.00 > 85.00	2.980	2.986	-0.006	0.803	6561218		2.06(1.09-3.26)	97.9	9098	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.316	3.318	-0.002	0.994	348277	2.18		91.7	1886	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.316	3.321	-0.005	1.000	1586330	4.86		102	3963	
$ 21 13C8 PFOA										
421.00 > 376.00	3.330	3.333	-0.003	0.998	3631745	2.40		98.0	8146	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.330	3.334	-0.004	0.897	7901676	4.86	Target=3.82	102	6304	
449.00 > 99.00	3.330	3.334	-0.004	0.897	2101070		3.76(1.91-5.72)	102	3889	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.338	3.339	-0.001	1.000	8718433	4.57	Target=2.82	91.3	821	
413.00 > 169.00	3.338	3.339	-0.001	1.000	3234309		2.70(1.41-4.23)	91.3	4853	
D 26 13C4 PFOA										
417.00 > 372.00	3.338	3.339	-0.001	1.000	3795149	2.45		98.2	6245	
* 25 13C2 PFOA										
415.00 > 370.00	3.338	3.339	-0.001		4049453	2.50			7937	
$ 27 13C8 PFOS										
507.00 > 99.00	3.704	3.709	-0.005	1.110	873870	2.47		103	2840	
D 31 13C4 PFOS										
503.00 > 80.00	3.711	3.714	-0.003	1.112	3677897	2.41		101	4607	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.711	3.715	-0.004	1.000	7984642	4.76	Target=4.25	103	3093	
499.00 > 99.00	3.711	3.715	-0.004	1.000	1857354		4.30(2.13-6.38)	103	1600	M
30 Perfluorononanoic acid										
463.00 > 419.00	3.727	3.728	-0.001	1.000	8406194	4.98	Target=5.46	99.6	2165	
463.00 > 169.00	3.727	3.728	-0.001	1.000	1527850		5.50(2.73-8.19)	99.6	3704	
D 29 13C5 PFNA										
468.00 > 423.00	3.727	3.728	-0.001	1.117	3875246	2.55		102	4797	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.918	3.920	-0.002	1.056	8769307	4.96		106	6019	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.056	4.061	-0.005	1.093	5363500	5.14	Target=4.97	107	6312	
549.00 > 99.00	4.056	4.061	-0.005	1.093	1070486		5.01(2.48-7.45)	107	3628	
D 36 13C8 FOSA										
506.00 > 78.00	4.082	4.087	-0.005	1.223	1490024	2.46		98.5	3254	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.082	4.087	-0.005	1.000	9676672	4.99		99.7	2800	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.082	4.088	-0.006	1.000	8876038	5.12	Target=14.66	102	2927	
513.00 > 169.00	4.082	4.088	-0.006	1.000	659240		13.46(7.33-21.99)	102	367	
D 33 13C2 PFDA										
515.00 > 470.00	4.082	4.088	-0.006	1.223	4332070	2.44		97.5	8934	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.091	4.091	0.0	1.000	1928662	4.75		99.2	4548	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.091	4.091	0.0	1.226	441511	2.32		96.8	1951	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.252	4.252	0.0	1.274	1754610	2.48		99.1	2846	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.252	4.257	-0.005	1.000	3145752	4.83		96.7	960	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.383	4.383	0.0	1.181	6348612	5.12	Target=4.49	106	4087	
599.00 > 99.00	4.383	4.383	0.0	1.181	1350869		4.70(2.25-6.74)	106	5424	
D 46 13C2 PFUnA										
565.00 > 520.00	4.409	4.407	0.002	1.321	3883747	2.50		99.9	7777	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.409	4.407	0.002	1.000	6013567	5.01	Target=10.82	100	1800	
563.00 > 169.00	4.400	4.407	-0.007	0.998	617615		9.74(5.41-16.23)	100	3340	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.409	4.413	-0.004	1.321	1319642	2.45		98.2	1546	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.417	4.423	-0.006	1.002	2346536	4.96		99.2	1889	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.537	4.543	-0.006	1.223	10669668	4.44		94.2	6596	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.546	4.549	-0.003	1.362	2207887	12.5		99.7	4987	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.554	4.560	-0.006	1.002	1280692	5.17		103	4616	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.564	4.568	-0.004	1.367	990419	2.77		111	260	
50 NMeFOSA										
512.00 > 169.00	4.573	4.573	0.0	1.002	1612923	4.61		92.3	1279	
D 56 13C2 PFDoA										
615.00 > 570.00	4.693	4.692	0.001	1.406	3619207	2.46		98.3	4646	
52 Perfluorododecanoic acid										
613.00 > 569.00	4.693	4.696	-0.003	1.000	7405311	4.88	Target=8.20	97.6	1907	
613.00 > 169.00	4.693	4.696	-0.003	1.000	933219		7.94(4.10-12.30)	97.6	2810	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.712	4.711	0.001	1.152	1779363	4.91		102	4111	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.721	4.720	0.001	1.415	2235373	12.5		100	5957	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.730	4.734	-0.004	1.002	1362226	5.18		104	5387	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.739	4.745	-0.006		738405	2.74		110	1232	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.749	4.752	-0.003	1.002	1795264	4.75		95.0	993	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.919	4.923	-0.004	1.325	662142	4.78	Target=0.67	98.9	3646	
699.00 > 99.00	4.919	4.923	-0.004	1.325	1077218		0.61(0.33-1.00)	98.9	3524	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.952	4.955	-0.003	1.055	5503711	5.32	Target=5.48	106	3096	
663.00 > 169.00	4.952	4.955	-0.003	1.055	1012105		5.44(2.74-8.23)	106	3197	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.187	5.193	-0.006	1.554	3503025	2.45		97.9	5368	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.187	5.195	-0.008	1.000	1252893	5.26	Target=1.49	105	3824	
713.00 > 219.00	5.187	5.195	-0.008	1.000	827357		1.51(0.75-2.24)	105	3935	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.617	5.621	-0.004	1.683	3741215	2.70		108	5585	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.617	5.621	-0.004	1.000	6346360	4.74	Target=5.24	94.8	954	
813.00 > 169.00	5.617	5.621	-0.004	1.000	1283893		4.94(2.62-7.87)	94.8	3028	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.016	6.021	-0.005	1.071	4143335	4.87	Target=4.86	97.5	784	
913.00 > 169.00	6.016	6.021	-0.005	1.071	848635		4.88(2.43-7.29)	97.5	1320	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL6_00023 Amount Added: 1.00 Units: mL

Report Date: 02-Jun-2020 20:33:10 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_011.d

Injection Date: 02-Jun-2020 16:11:23 Instrument ID: A9

Lims ID: IC L6 Full

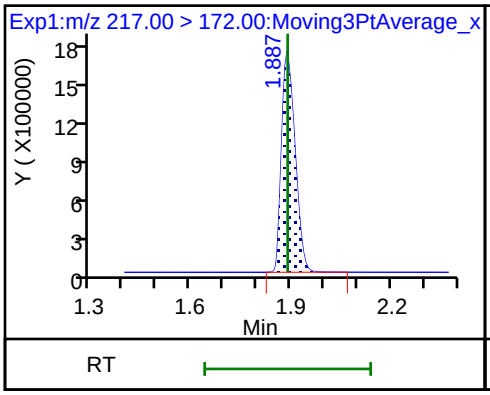
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 6 Worklist Smp#: 7

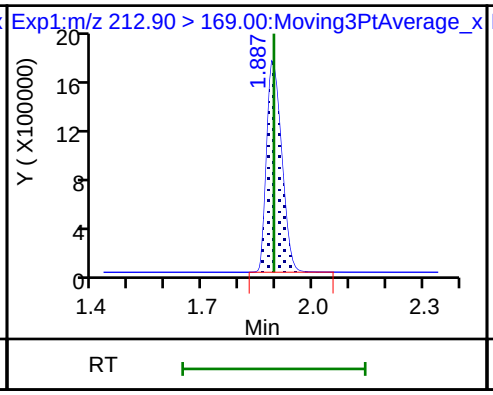
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

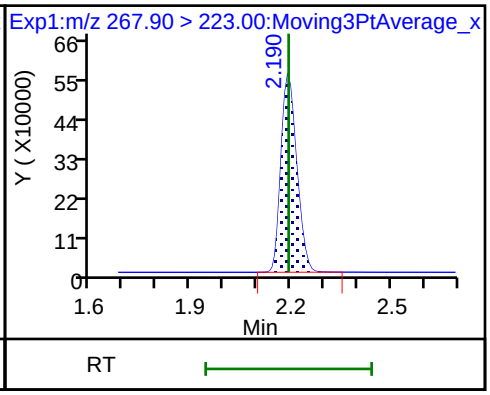
D 1 13C4 PFBA



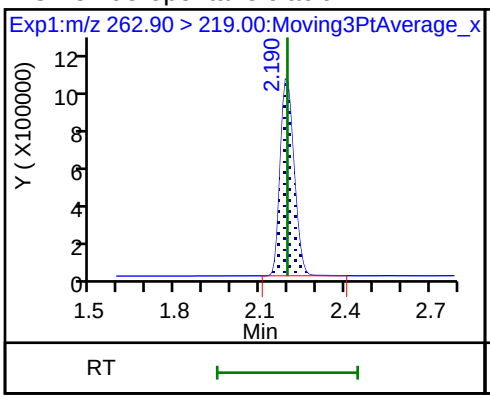
2 Perfluorobutanoic acid



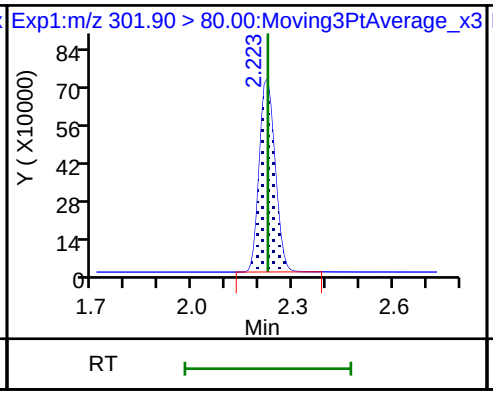
D 4 13C5 PFPeA



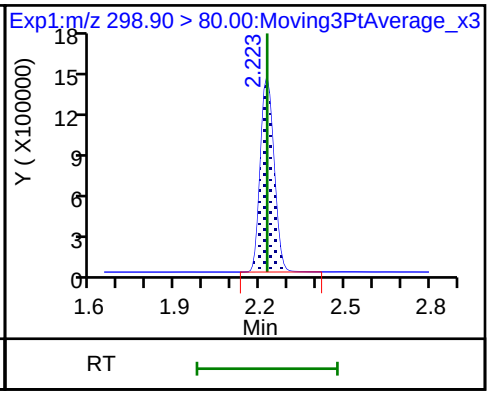
3 Perfluoropentanoic acid



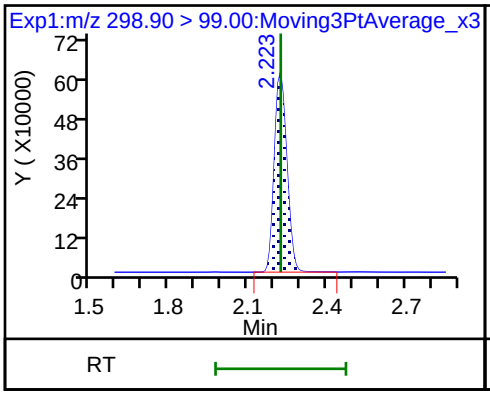
D 6 13C3 PFBS



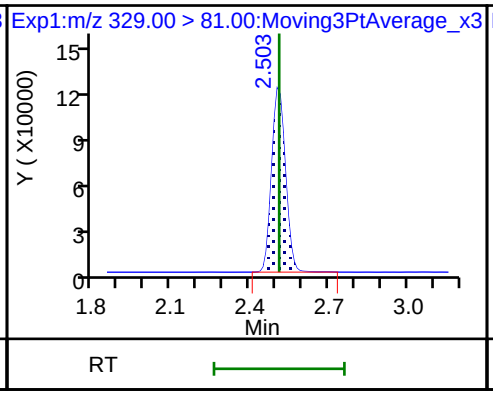
5 Perfluorobutanesulfonic acid



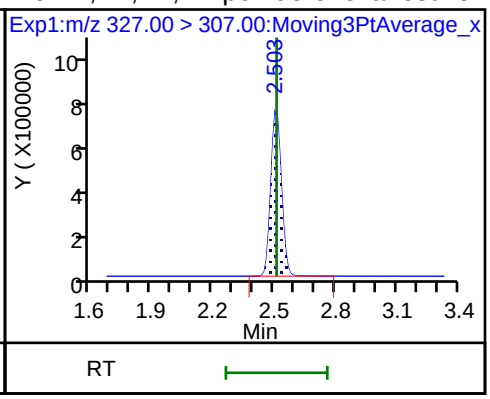
5 Perfluorobutanesulfonic acid



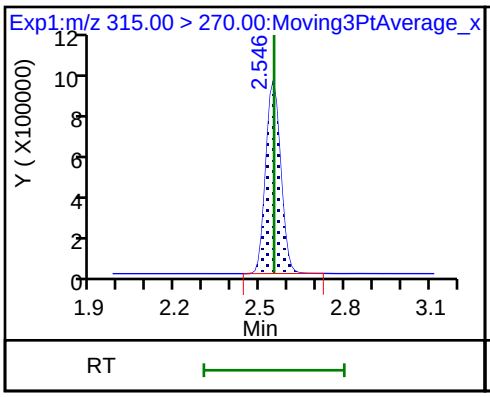
D 8 M2-4:2 FTS



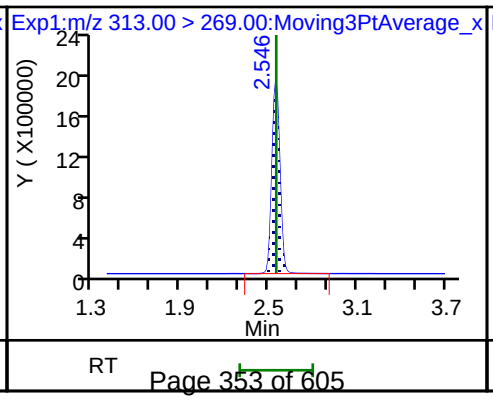
9 1H,1H,2H,2H-perfluorohexanesulfo



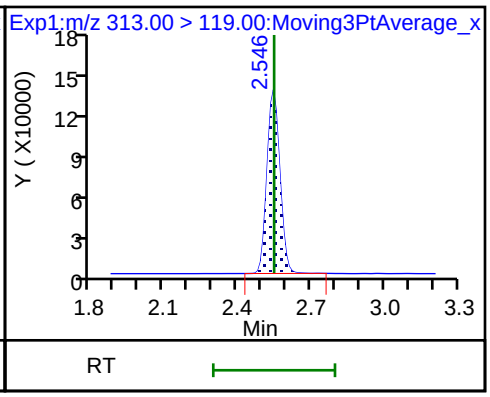
D 10 13C2 PFHxA



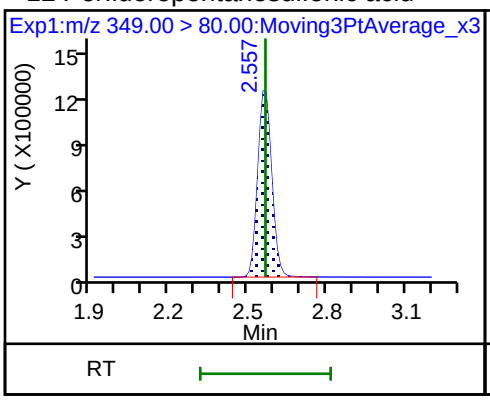
11 Perfluorohexanoic acid



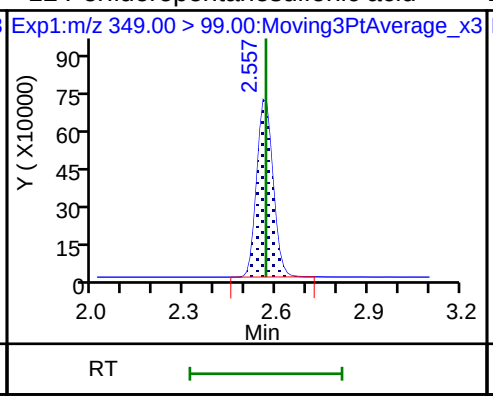
11 Perfluorohexanoic acid



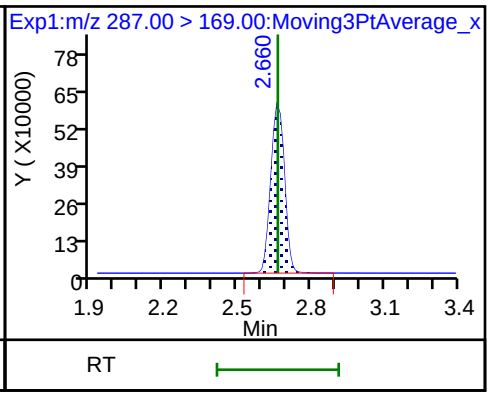
12 Perfluoropentanesulfonic acid



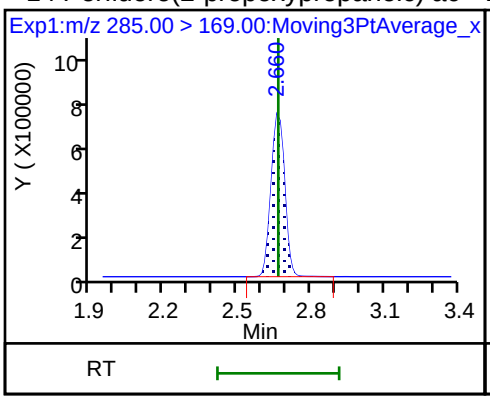
12 Perfluoropentanesulfonic acid



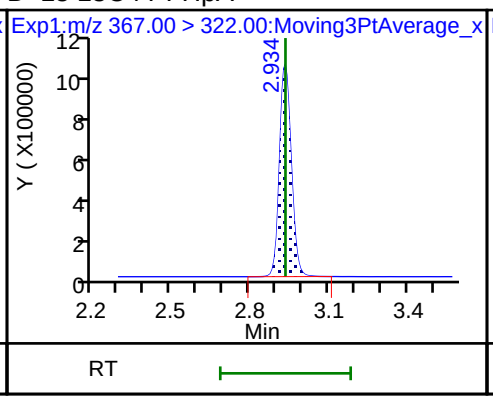
D 13 13C3 HFPO-DA



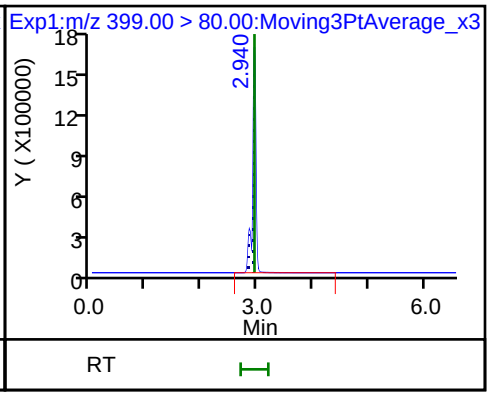
14 Perfluoro(2-propoxypropanoic) ac



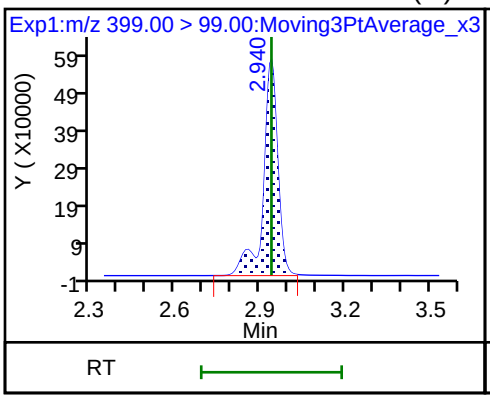
D 15 13C4 PFHpA



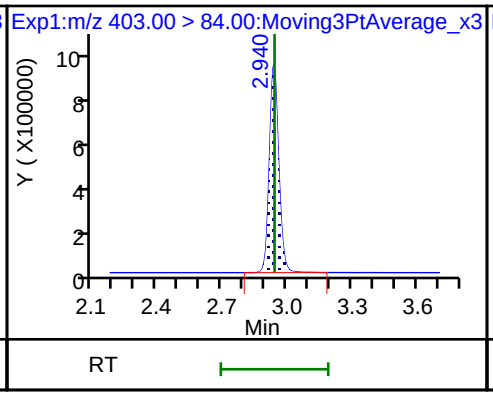
16 Perfluorohexanesulfonic acid



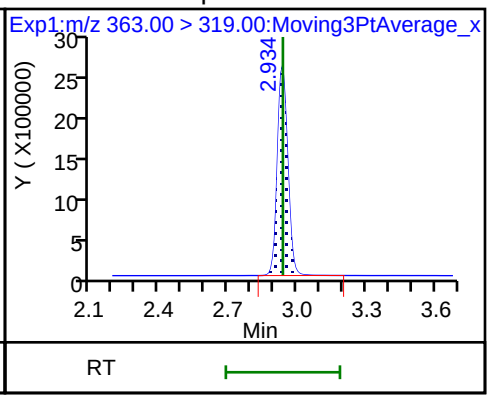
16 Perfluorohexanesulfonic acid (M)



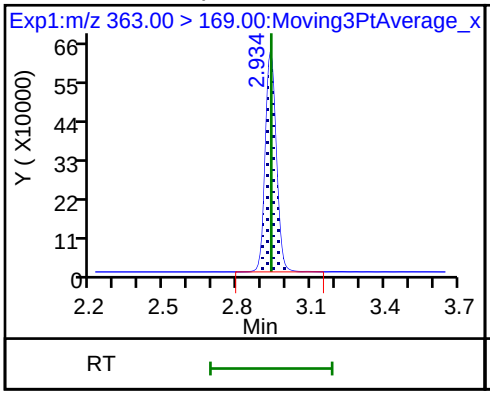
D 17 18O2 PFHxS



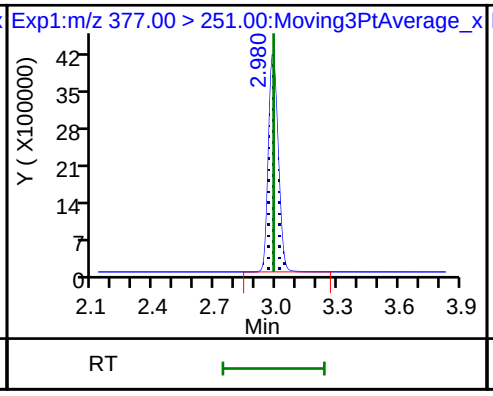
18 Perfluoroheptanoic acid



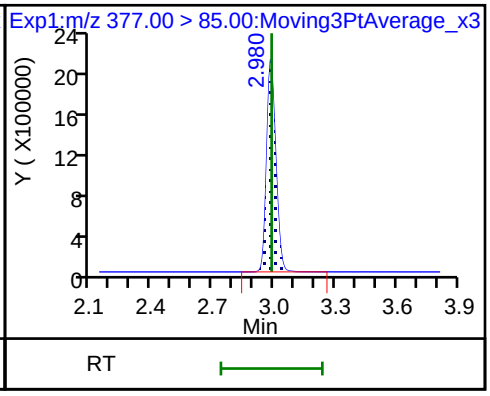
18 Perfluoroheptanoic acid



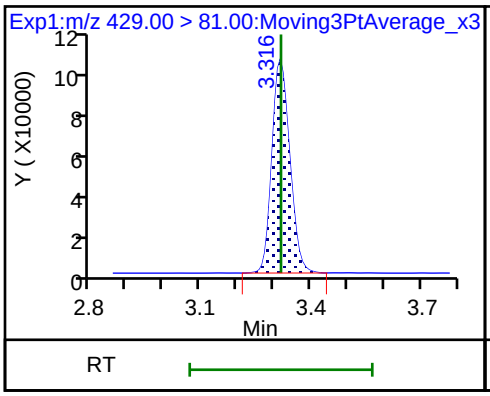
19 DONA



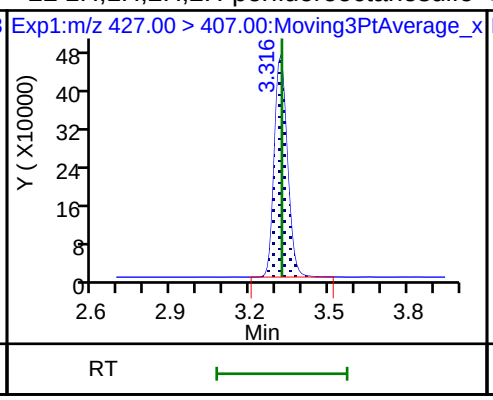
19 DONA



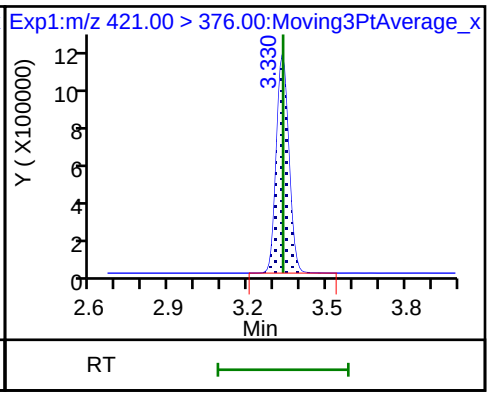
D 20 M2-6:2 FTS



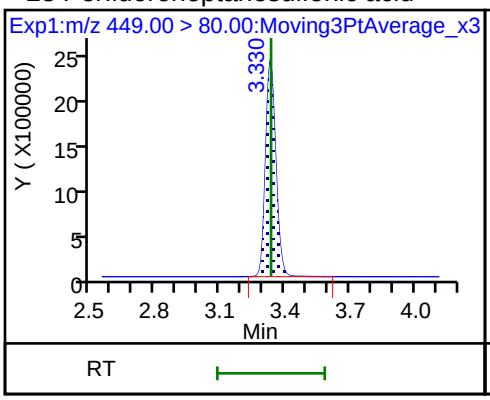
22 1H,1H,2H,2H-perfluorooctanesulfo



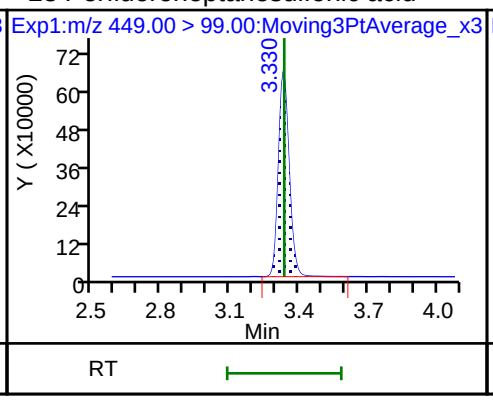
$ 21 13C8 PFOA



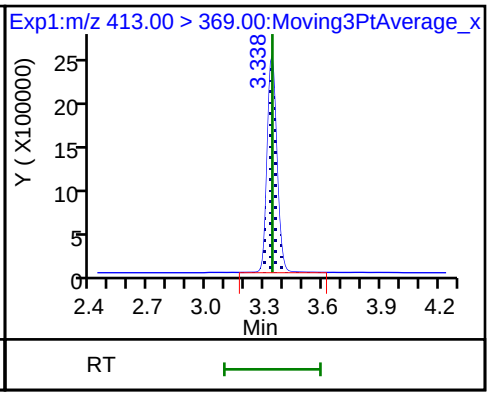
23 Perfluoroheptanesulfonic acid



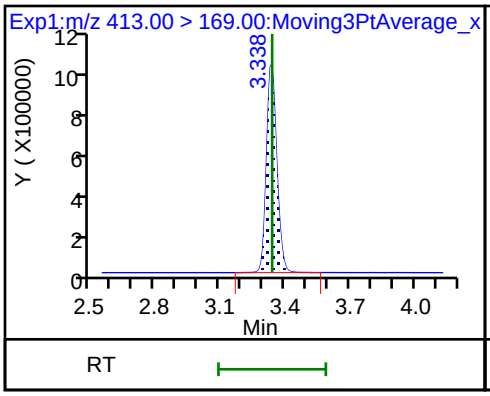
23 Perfluoroheptanesulfonic acid



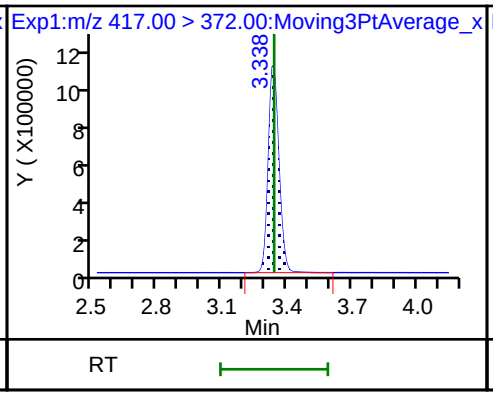
24 Perfluorooctanoic acid



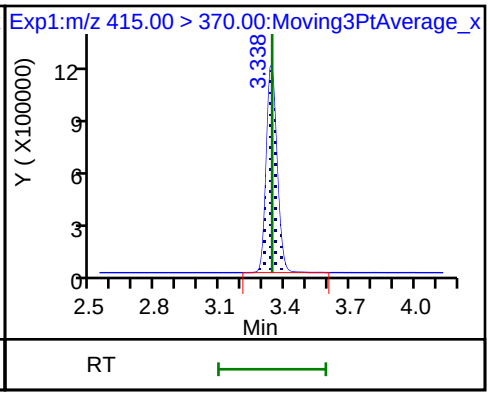
24 Perfluorooctanoic acid



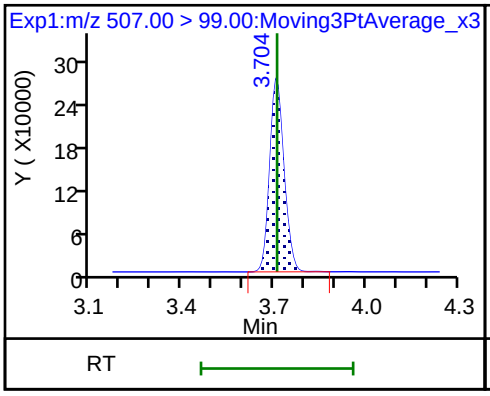
D 26 13C4 PFOA



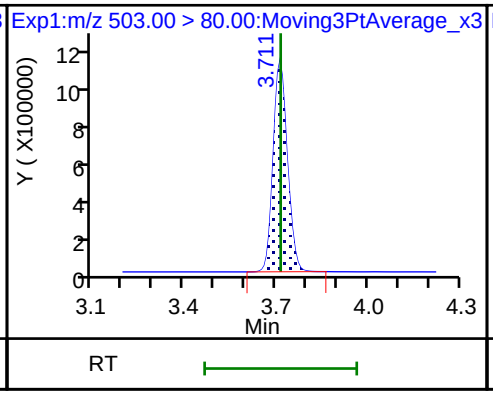
* 25 13C2 PFOA



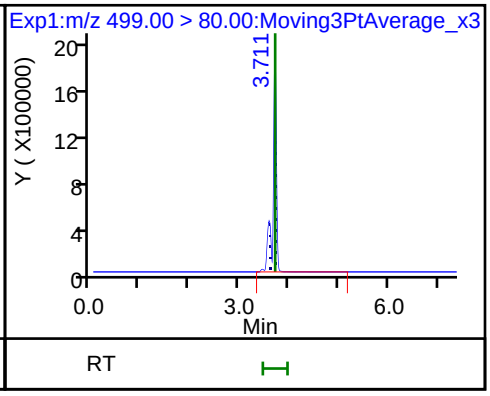
$ 27 13C8 PFOS



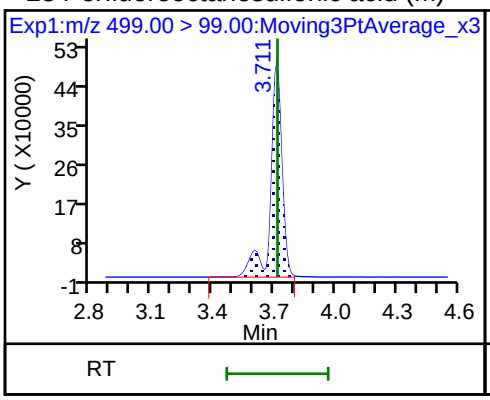
D 31 13C4 PFOS



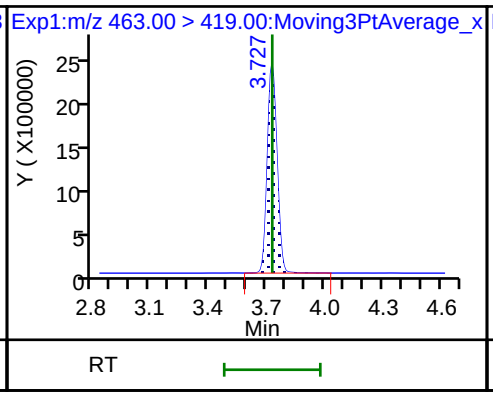
28 Perfluorooctanesulfonic acid



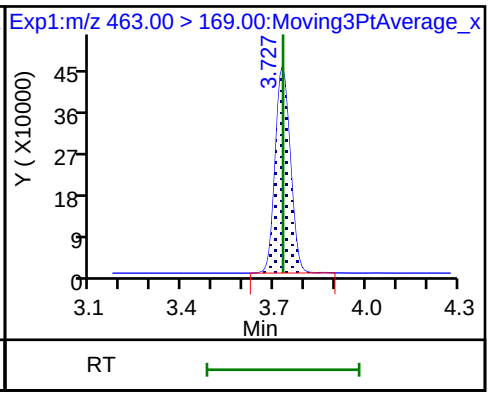
28 Perfluorooctanesulfonic acid (M)



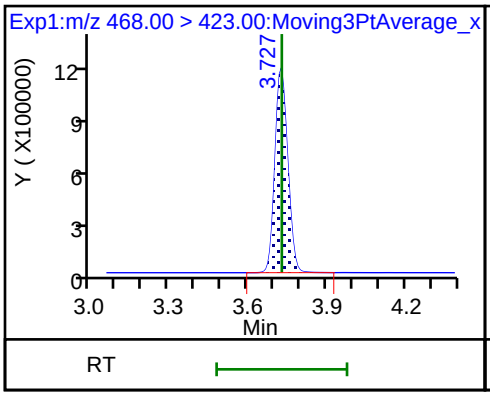
30 Perfluorononanoic acid



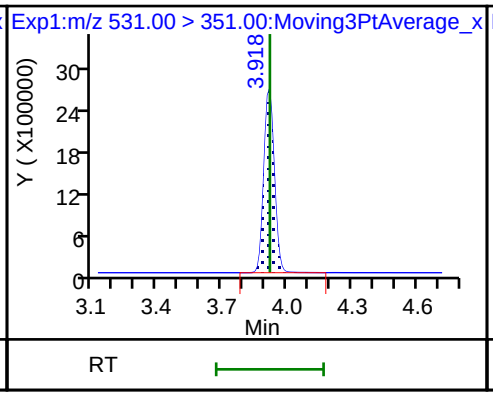
30 Perfluorononanoic acid



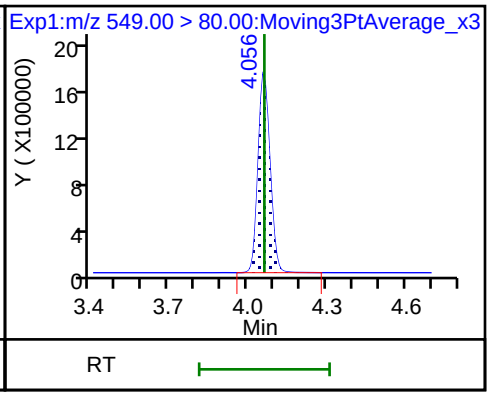
D 29 13C5 PFNA



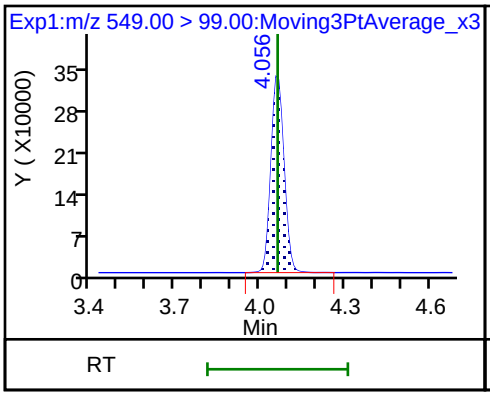
32 9-Chlorohexadecafluoro-3-oxanona



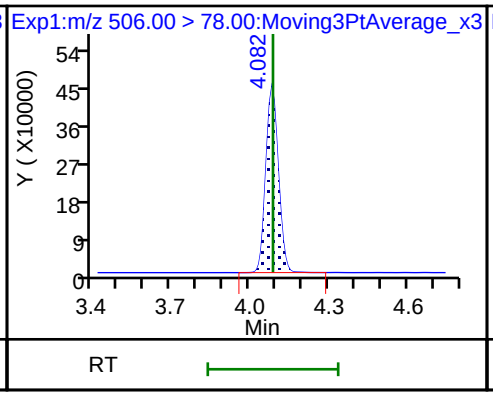
35 Perfluorononanesulfonic acid



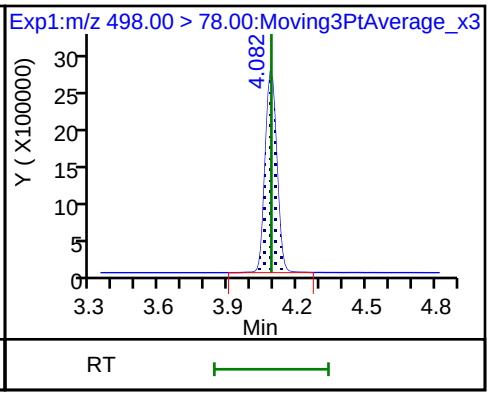
35 Perfluorononanesulfonic acid



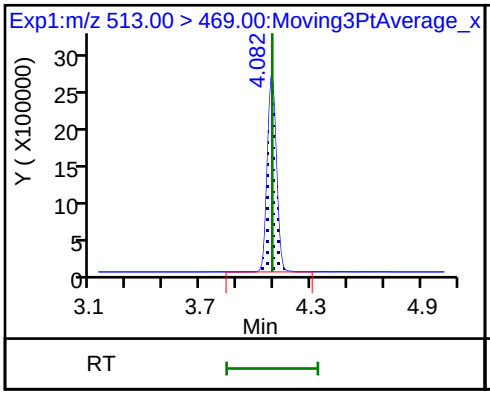
D 36 13C8 FOSA



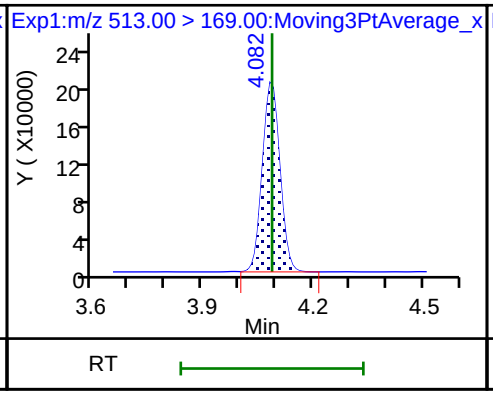
34 Perfluorooctanesulfonamide



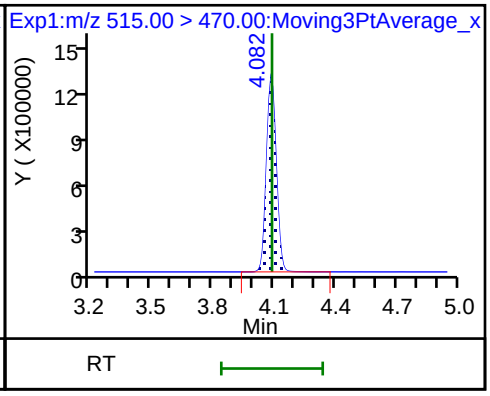
38 Perfluorodecanoic acid



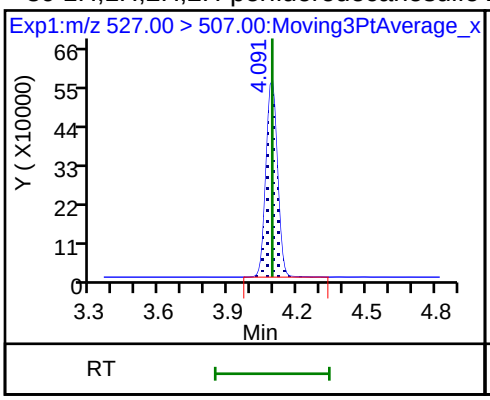
38 Perfluorodecanoic acid



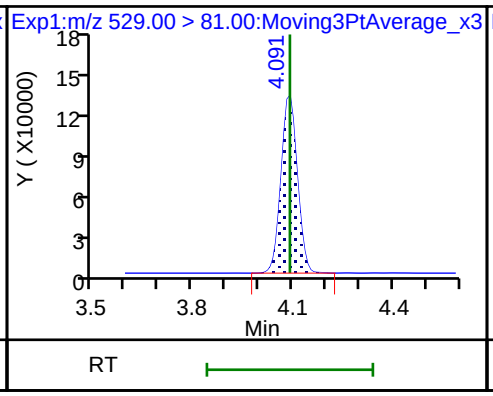
D 33 13C2 PFDA



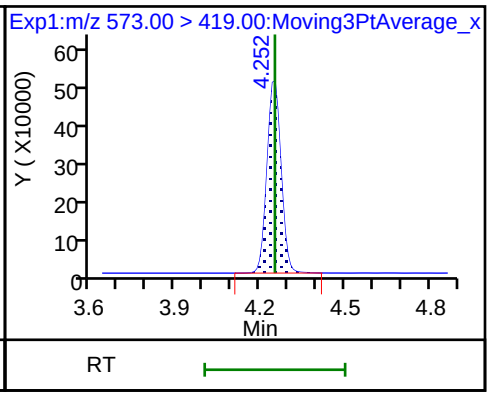
39 1H,1H,2H,2H-perfluorodecanesulfo



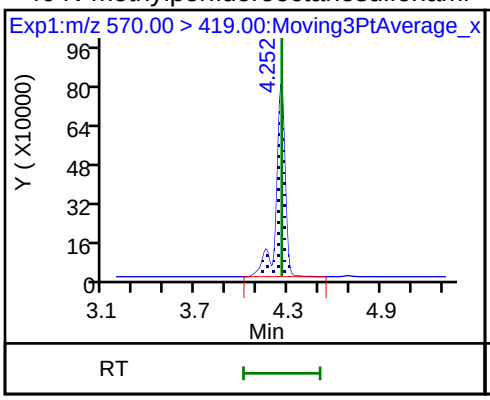
D 37 M2-8:2 FTS



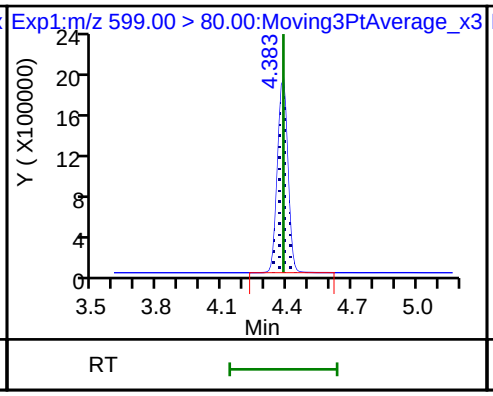
D 41 d3-NMeFOSAA



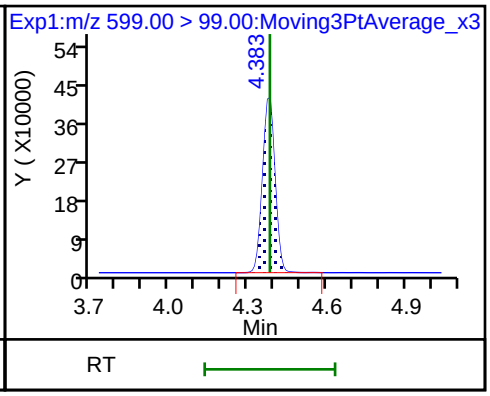
40 N-methylperfluorooctanesulfonami



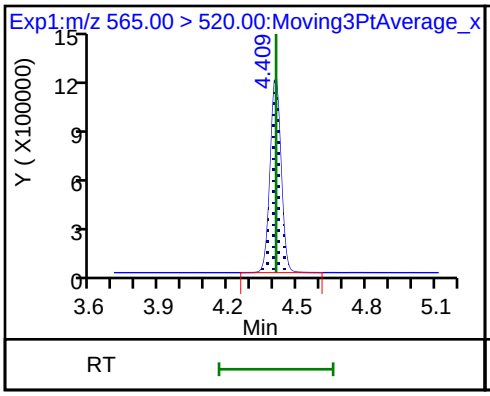
42 Perfluorodecanesulfonic acid



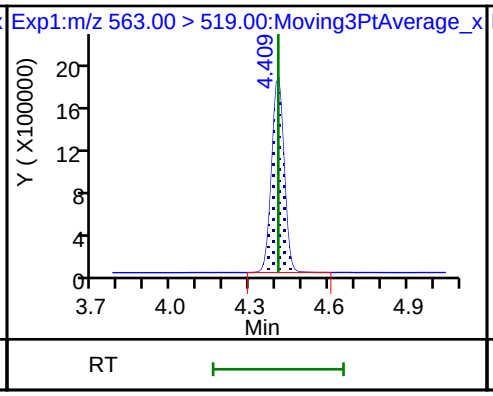
42 Perfluorodecanesulfonic acid



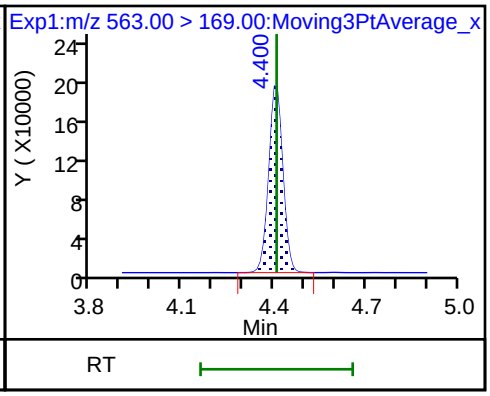
D 46 13C2 PFUnA



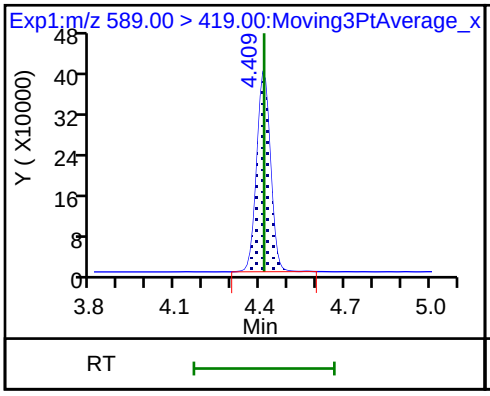
43 Perfluoroundecanoic acid



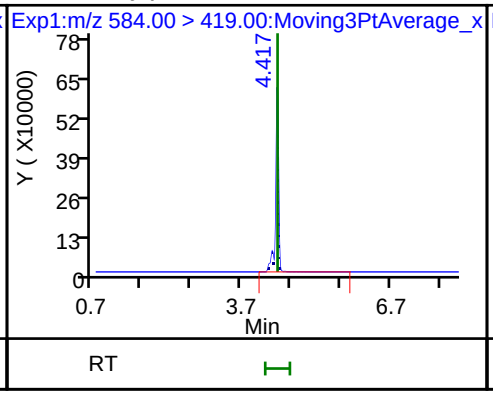
43 Perfluoroundecanoic acid



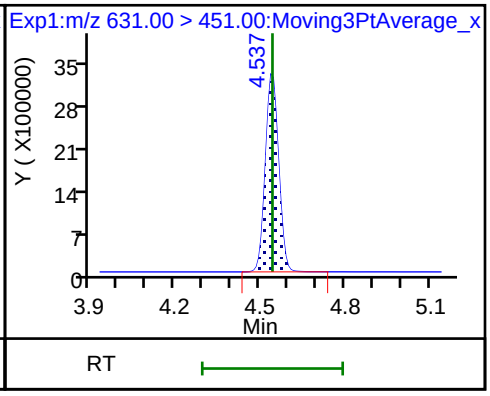
D 45 d5-NEtFOSAA



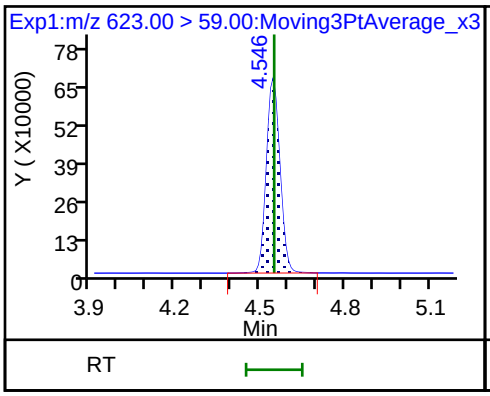
44 N-ethylperfluorooctanesulfonamid



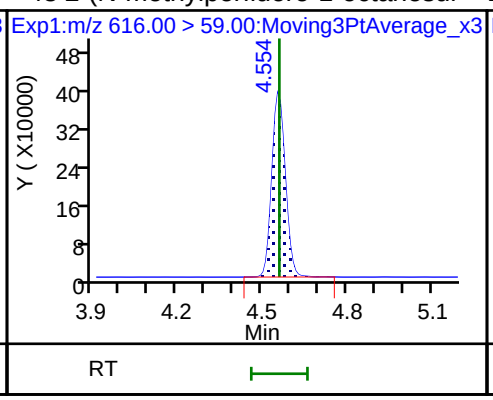
51 11-Chloroeicosafluoro-3-oxaundec



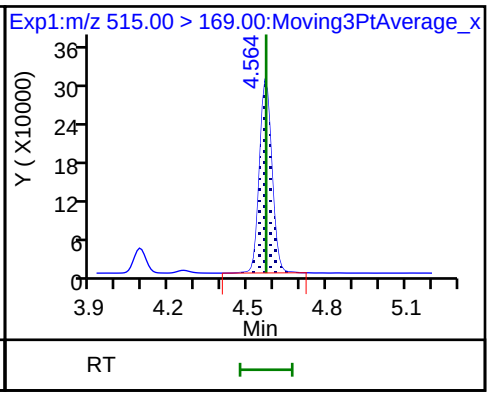
D 47 d7-N-MeFOSE-M



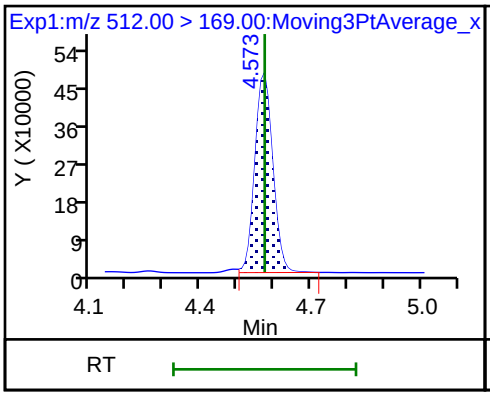
48 2-(N-methylperfluoro-1-octanesul



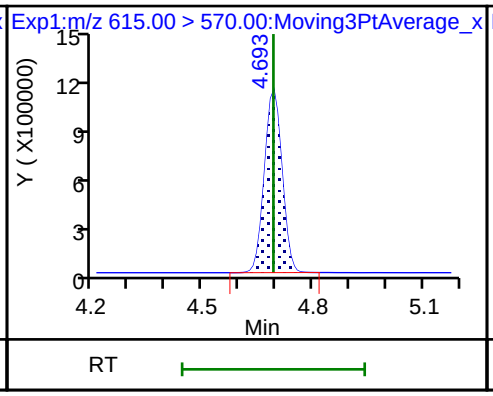
D 49 d-N-MeFOSA-M



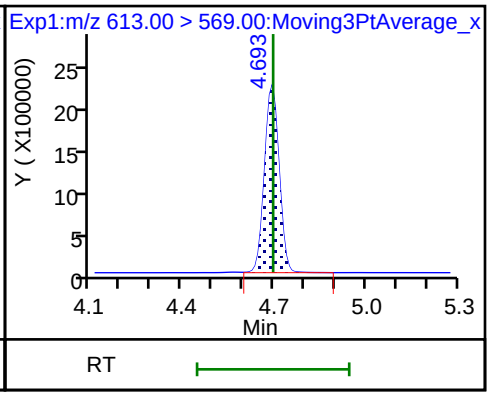
50 NMeFOSA



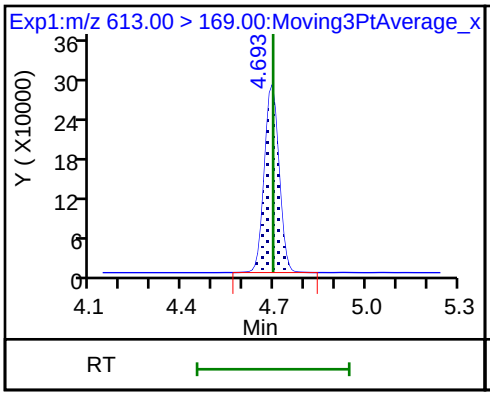
D 56 13C2 PFDoA



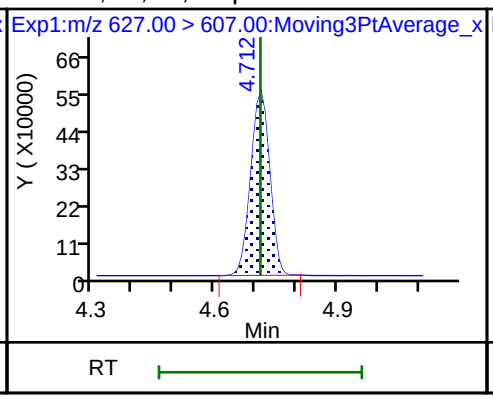
52 Perfluorododecanoic acid



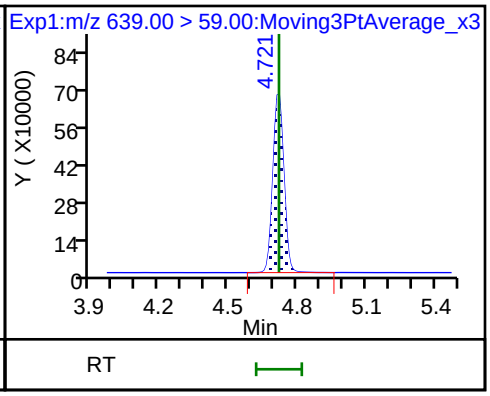
52 Perfluorododecanoic acid



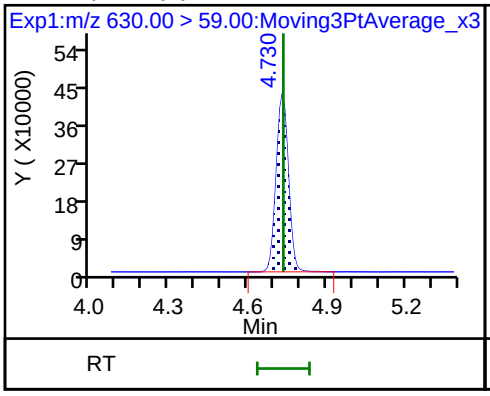
55 1H,1H,2H,2H-perfluorododecanesul



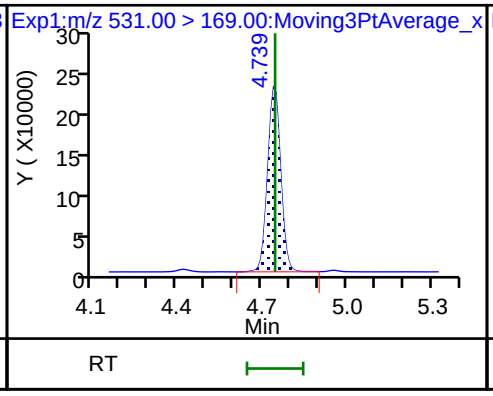
D 53 d9-N-EtFOSE-M



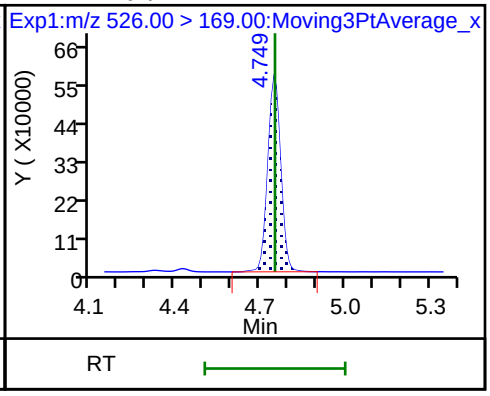
54 2-(N-ethylperfluoro-1-octanesulf



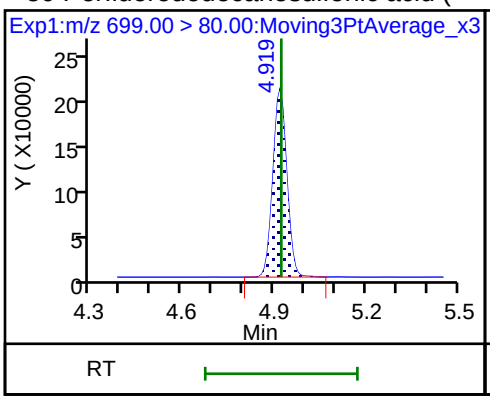
D 58 d-N-EtFOSA-M



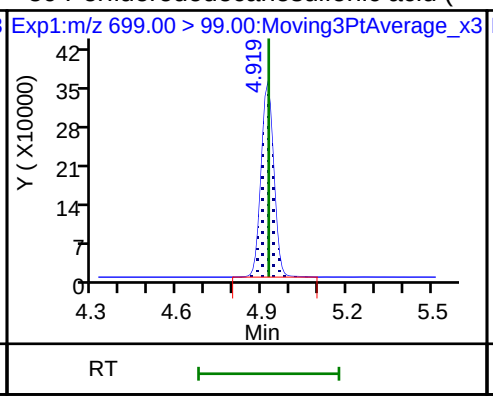
57 N-ethylperfluoro-1-octanesulfona



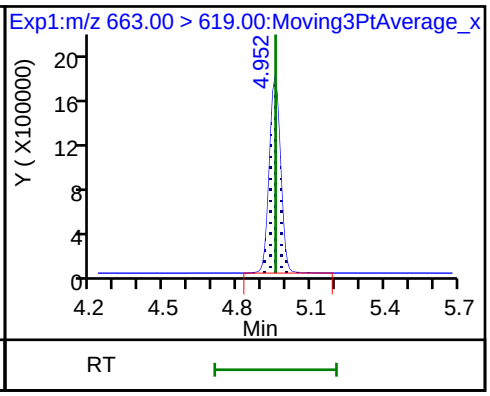
59 Perfluorododecanesulfonic acid (



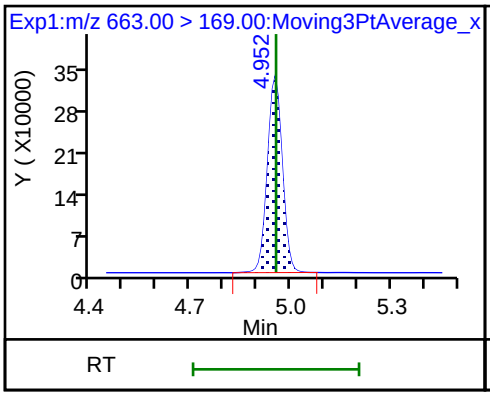
59 Perfluorododecanesulfonic acid (



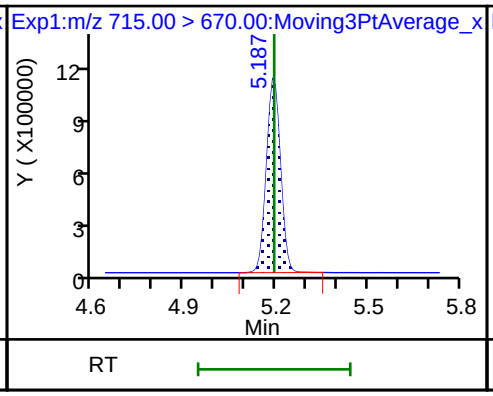
60 Perfluorotridecanoic acid



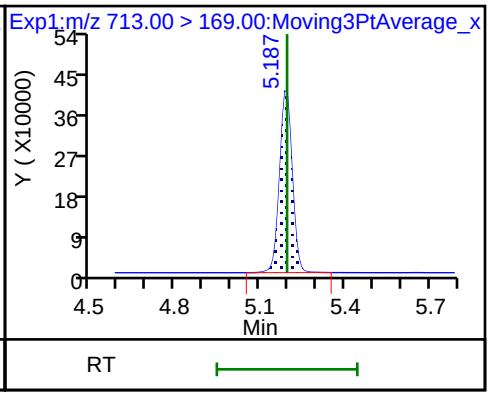
60 Perfluorotridecanoic acid



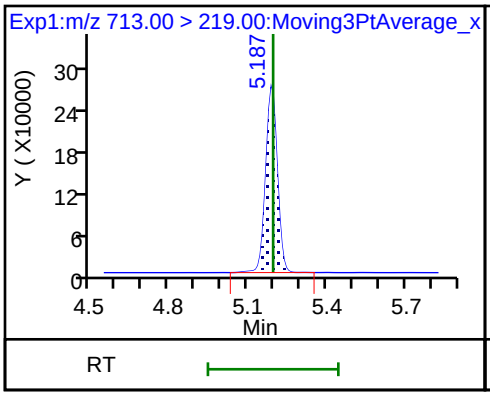
D 62 13C2 PFTeDA



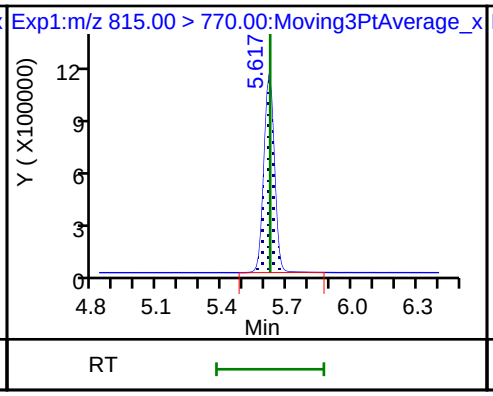
61 Perfluorotetradecanoic acid



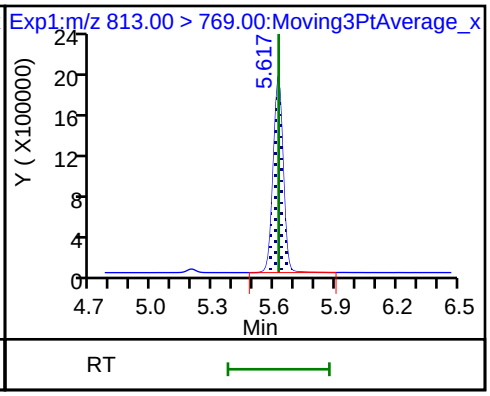
61 Perfluorotetradecanoic acid



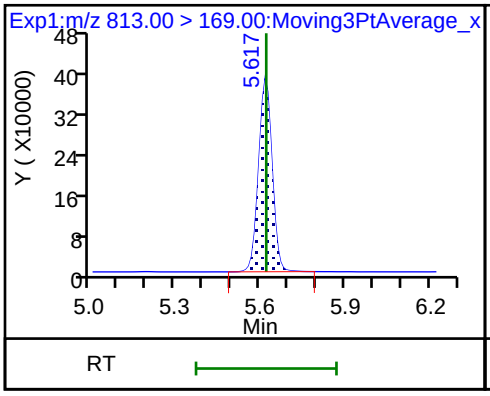
D 63 13C2 PFHxDA



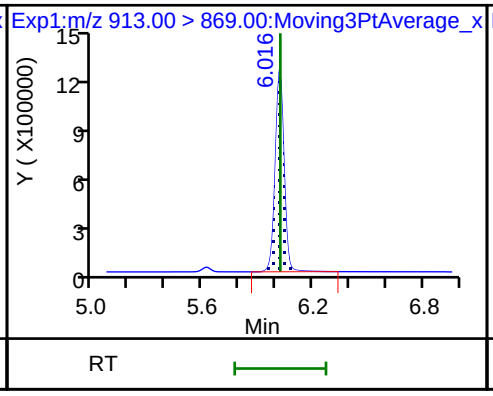
64 Perfluorohexadecanoic acid



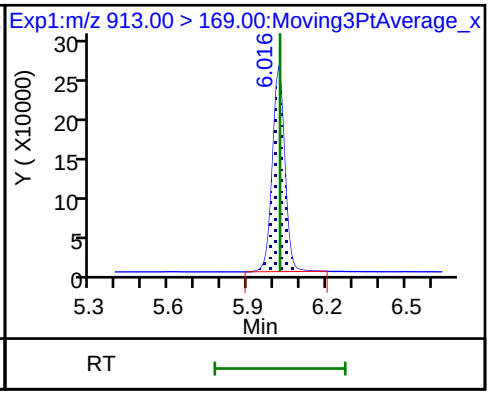
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

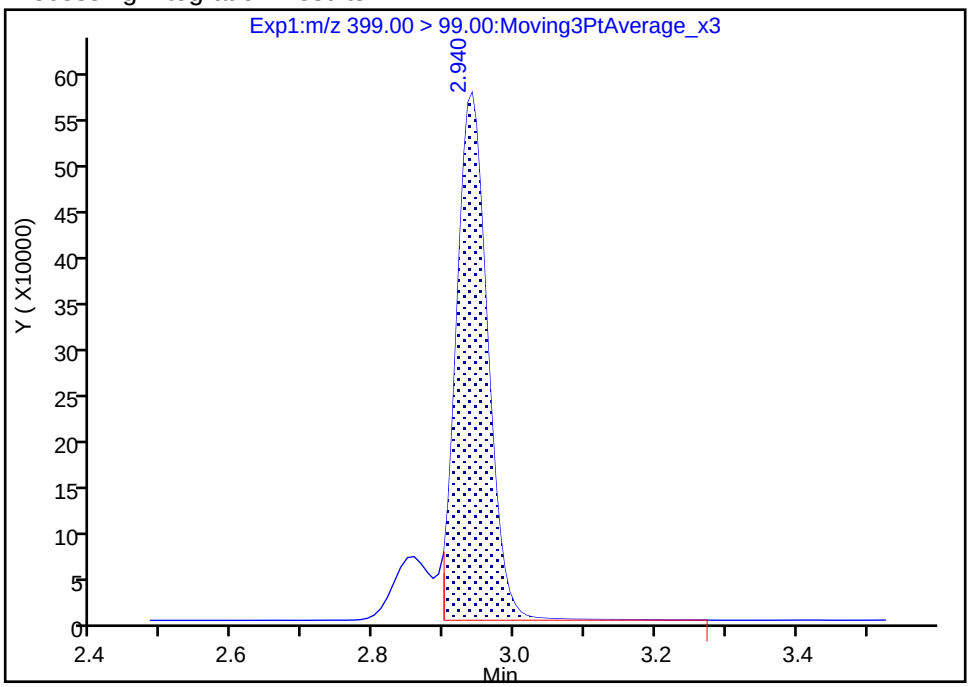
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_011.d				
Injection Date:	02-Jun-2020 16:11:23	Instrument ID:	A9		
Lims ID:	IC L6 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	6	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

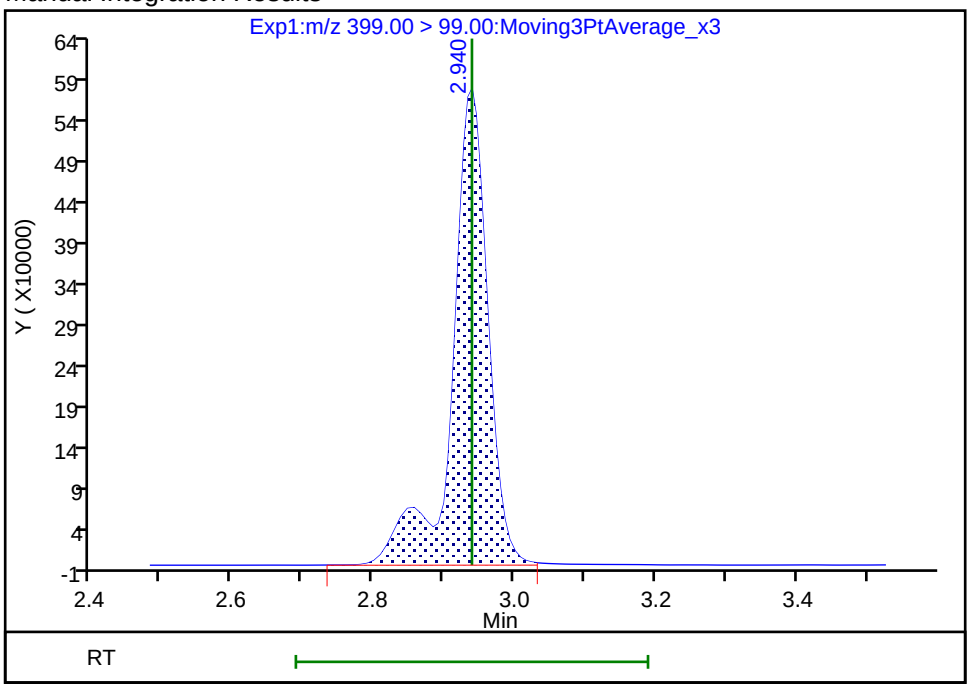
Processing Integration Results

RT: 2.94
Area: 1755827
Amount: 4.526745
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 2034029
Amount: 4.526745
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:54:19

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

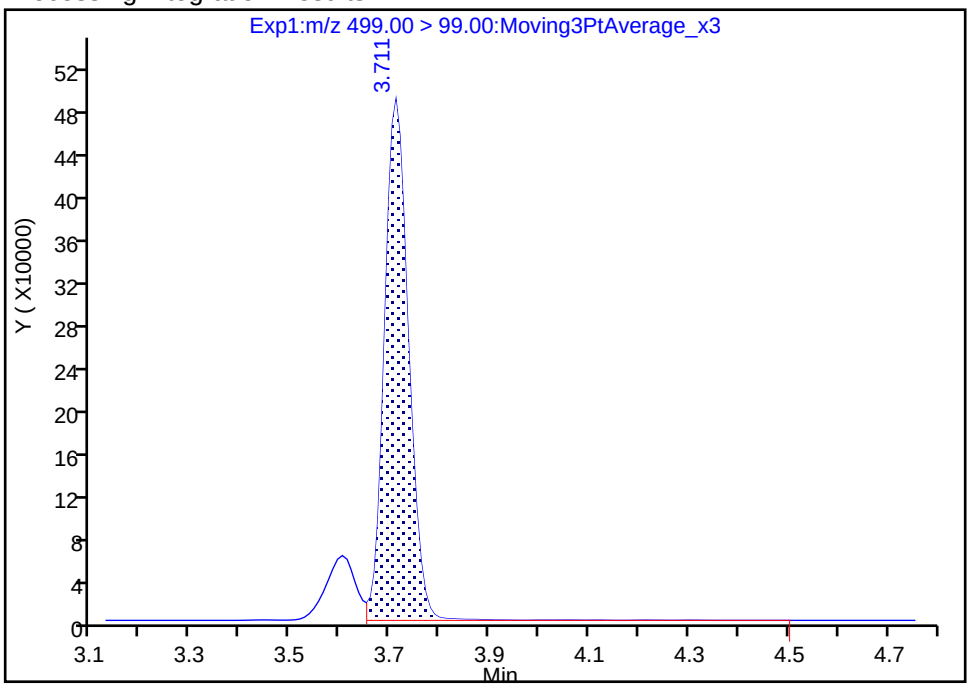
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_011.d				
Injection Date:	02-Jun-2020 16:11:23	Instrument ID:	A9		
Lims ID:	IC L6 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	6	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

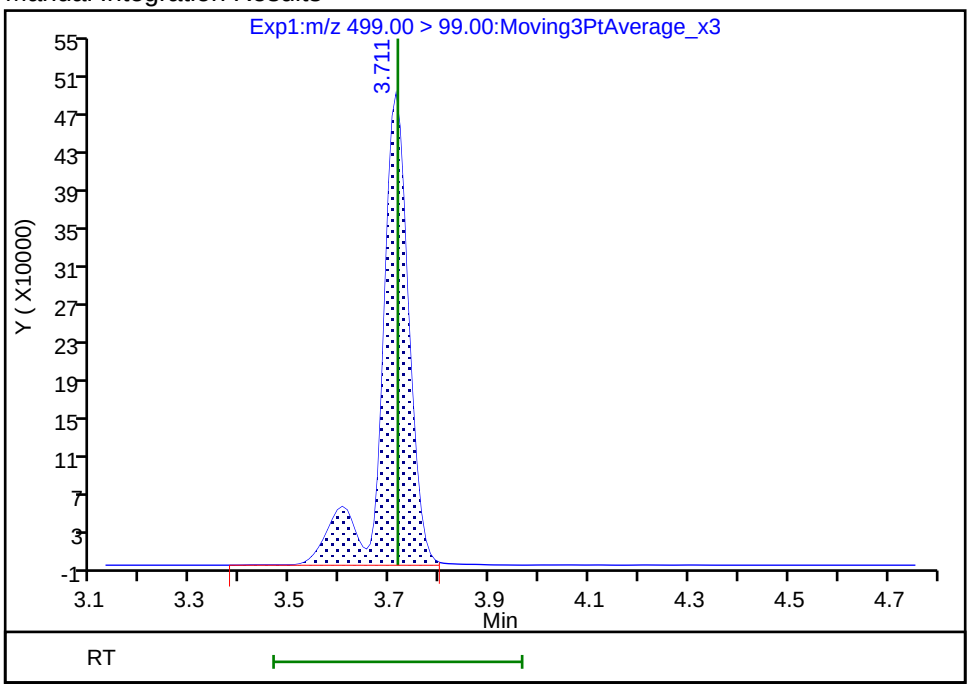
Processing Integration Results

RT: 3.71
Area: 1617536
Amount: 4.757546
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 1857354
Amount: 4.757546
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:54:36

Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 02-Jun-2020 16:30:05 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: STD7 (22)
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 02-Jun-2020 20:33:19 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1042

First Level Reviewer: adamst Date: 02-Jun-2020 19:56:13
Ratio Calibration: Average of Initial Calibration

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	1.893	1.890	0.003	0.566	4813848	2.67		107	8157	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.901	1.893	0.008	1.004	8889541	9.63		96.3	7750	
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.193	0.005	0.657	1759839	2.71		108	5298	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.198	2.196	0.002	1.000	6723391	9.15		91.5	1345	
D 6 13C3 PFBS										
301.90 > 80.00	2.233	2.224	0.009	0.667	2373281	2.84		122	5798	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.233	2.224	0.009	1.000	9011009	8.12	Target=2.39	91.9	3943	
298.90 > 99.00	2.233	2.224	0.009	1.000	4043671		2.23(1.20-3.59)	91.9	3527	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.515	2.511	0.004	0.752	402262	2.29		98.1	2166	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.515	2.511	0.004	1.000	4546283	9.20		98.5	8249	
D 10 13C2 PFHxA										
315.00 > 270.00	2.558	2.549	0.009	0.764	3244599	2.52		101	3620	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.558	2.549	0.009	1.000	12856082	9.55	Target=15.64	95.5	3811	
313.00 > 119.00	2.558	2.549	0.009	1.000	928038		13.85(7.82-23.46)	95.5	1931	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.568	2.566	0.002	1.150	8062304	7.83	Target=1.75	83.5	4985	
349.00 > 99.00	2.568	2.566	0.002	1.150	4734910		1.70(0.88-2.63)	83.5	4489	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.674	2.664	0.010	0.799	2231326	2.71		108	4354	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.674	2.666	0.008	1.000	5214005	10.1		101	7926	
D 15 13C4 PFHpA										
367.00 > 322.00	2.941	2.935	0.006	0.879	2903425	2.50		99.9	3215	
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.941	2.937	0.004	1.000	13925185	9.18	Target=4.39	91.8	3944	
363.00 > 169.00	2.941	2.937	0.004	1.000	3630832		3.84(2.20-6.59)	91.8	6384	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.946	2.940	0.006	1.000	11458601	8.63	Target=3.04	94.8	2270	
399.00 > 99.00	2.946	2.940	0.006	1.000	3785858		3.03(1.52-4.56)	94.8	1844	M
D 17 18O2 PFHxS										
403.00 > 84.00	2.946	2.941	0.005	0.881	2663312	2.42		102	7103	
19 DONA										
377.00 > 251.00	2.994	2.986	0.008	0.805	23048986	8.11	Target=2.17	86.1	6541	
377.00 > 85.00	2.994	2.986	0.008	0.805	11611304		1.99(1.09-3.26)	86.1	9412	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.324	3.318	0.006	0.994	323533	2.19		92.4	3359	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.324	3.321	0.003	1.000	2909034	9.59		101	4226	
$ 21 13C8 PFOA										
421.00 > 376.00	3.338	3.333	0.005	0.998	3352680	2.40		98.1	8014	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.338	3.334	0.004	0.897	13624145	8.64	Target=3.82	90.7	4178	
449.00 > 99.00	3.338	3.334	0.004	0.897	3933119		3.46(1.91-5.72)	90.7	4202	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.346	3.339	0.007	1.000	14873312	8.28	Target=2.82	82.8	1188	
413.00 > 169.00	3.346	3.339	0.007	1.000	5888918		2.53(1.41-4.23)	82.8	7336	
D 26 13C4 PFOA										
417.00 > 372.00	3.346	3.339	0.007	1.000	3569302	2.50		100	7016	
* 25 13C2 PFOA										
415.00 > 370.00	3.346	3.339	0.007		3732645	2.50			6008	
$ 27 13C8 PFOS										
507.00 > 99.00	3.712	3.709	0.003	1.110	820601	2.52		105	1937	
D 31 13C4 PFOS										
503.00 > 80.00	3.720	3.714	0.006	1.112	3564861	2.54		106	3694	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.720	3.715	0.005	1.000	14600785	8.98	Target=4.25	96.7	6063	
499.00 > 99.00	3.720	3.715	0.005	1.000	3572356		4.09(2.13-6.38)	96.7	4859	
D 29 13C5 PFNA										
468.00 > 423.00	3.736	3.728	0.008	1.117	3598223	2.57		103	3892	
30 Perfluorononanoic acid										
463.00 > 419.00	3.736	3.728	0.008	1.000	14452960	9.22	Target=5.46	92.2	3856	
463.00 > 169.00	3.736	3.728	0.008	1.000	2902453		4.98(2.73-8.19)	92.2	6111	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.928	3.920	0.008	1.056	15928904	9.29		99.7	5482	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.065	4.061	0.004	1.093	9358055	9.25	Target=4.97	96.4	4511	
549.00 > 99.00	4.065	4.061	0.004	1.093	1936898		4.83(2.48-7.45)	96.4	5297	
D 36 13C8 FOSA										
506.00 > 78.00	4.092	4.087	0.005	1.223	1346326	2.41		96.6	4775	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.092	4.087	0.005	1.000	16530721	9.43		94.3	3491	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.092	4.088	0.004	1.000	14071704	8.93	Target=14.66	89.3	5179	
513.00 > 169.00	4.092	4.088	0.004	1.000	1151652		12.22(7.33-21.99)	89.3	349	
D 33 13C2 PFDA										
515.00 > 470.00	4.092	4.088	0.004	1.223	3934974	2.40		96.0	9141	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.101	4.091	0.010	1.002	3363840	8.86		92.5	5891	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.092	4.091	0.001	1.223	412924	2.35		98.2	2321	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.262	4.252	0.010	1.274	1771047	2.71		109	2132	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.262	4.257	0.005	1.000	6204744	9.44		94.4	1719	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.384	4.383	0.001	1.178	10958518	9.12	Target=4.49	94.6	7435	
599.00 > 99.00	4.384	4.383	0.001	1.178	2589024		4.23(2.25-6.74)	94.6	6741	
D 46 13C2 PFUnA										
565.00 > 520.00	4.410	4.407	0.003	1.318	3567256	2.49		99.6	7059	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.418	4.407	0.011	1.002	10611802	9.63	Target=10.82	96.3	2811	
563.00 > 169.00	4.418	4.407	0.011	1.002	1077850		9.85(5.41-16.23)	96.3	3963	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.418	4.413	0.005	1.321	1146353	2.31		92.5	1326	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.427	4.423	0.004	1.002	4220711	10.3		103	2222	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.547	4.543	0.004	1.222	19125030	8.20		87.1	12253	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.555	4.549	0.006	1.362	2088901	12.8		102	4371	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.564	4.560	0.004	1.002	2443750	10.4		104	6049	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.573	4.568	0.005	1.367	938220	2.84		114	257	
50 NMeFOSA										
512.00 > 169.00	4.582	4.573	0.009	1.002	3148948	9.51		95.1	1875	
D 56 13C2 PFDoA										
615.00 > 570.00	4.695	4.692	0.003	1.403	3473179	2.56		102	6042	
52 Perfluorododecanoic acid										
613.00 > 569.00	4.704	4.696	0.008	1.002	12395346	8.51	Target=8.20	85.1	3131	
613.00 > 169.00	4.695	4.696	-0.001	1.000	1720496		7.20(4.10-12.30)	85.1	4921	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.723	4.711	0.012	1.154	3197439	9.44		98.0	10734	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.723	4.720	0.003	1.412	2197723	13.4		107	5527	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.741	4.734	0.007	1.004	2606115	10.1		101	7637	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.748	4.745	0.003		732749	2.95		118	1093	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.756	4.752	0.004	1.002	3510456	9.36		93.6	1185	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.927	4.923	0.004	1.324	1217252	9.08	Target=0.67	93.8	6403	
699.00 > 99.00	4.927	4.923	0.004	1.324	1965227		0.62(0.33-1.00)	93.8	5841	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.961	4.955	0.006	1.057	8951554	9.02	Target=5.48	90.2	4332	
663.00 > 169.00	4.961	4.955	0.006	1.057	1767618		5.06(2.74-8.23)	90.2	5596	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.195	5.193	0.002	1.553	3474918	2.63		105	7290	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.203	5.195	0.008	1.002	2320667	9.83	Target=1.49	98.3	7946	
713.00 > 219.00	5.195	5.195	0.0	1.000	1575472		1.47(0.75-2.24)	98.3	4253	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.625	5.621	0.004	1.681	3420581	2.68		107	6325	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.625	5.621	0.004	1.000	11474706	9.40	Target=5.24	94.0	1569	
813.00 > 169.00	5.625	5.621	0.004	1.000	2401743		4.78(2.62-7.87)	94.0	4012	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.023	6.021	0.002	1.071	7766763	10.0	Target=4.86	99.9	1097	
913.00 > 169.00	6.023	6.021	0.002	1.071	1730230		4.49(2.43-7.29)	99.9	1593	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00022 Amount Added: 1.00 Units: mL

Report Date: 02-Jun-2020 20:33:19 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Injection Date: 02-Jun-2020 16:30:05 Instrument ID: A9

Lims ID: IC L7 Full

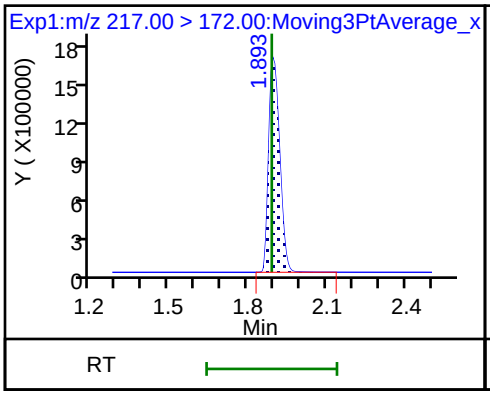
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 8 Worklist Smp#: 9

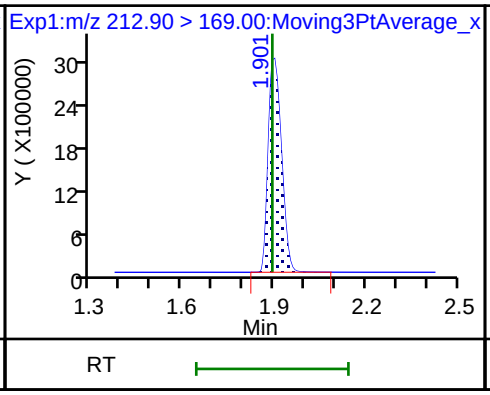
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

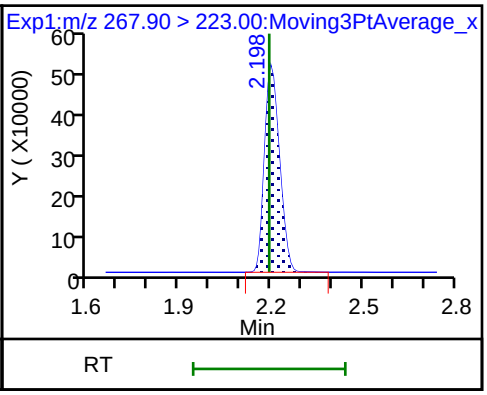
D 1 13C4 PFBA



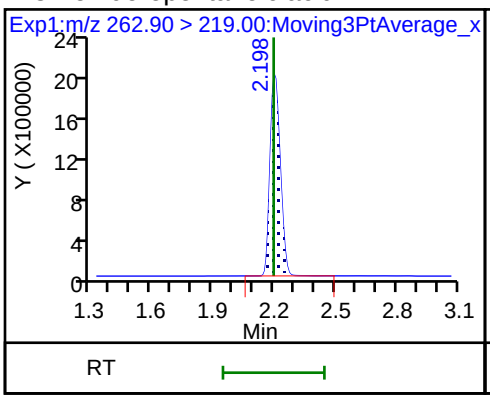
2 Perfluorobutanoic acid



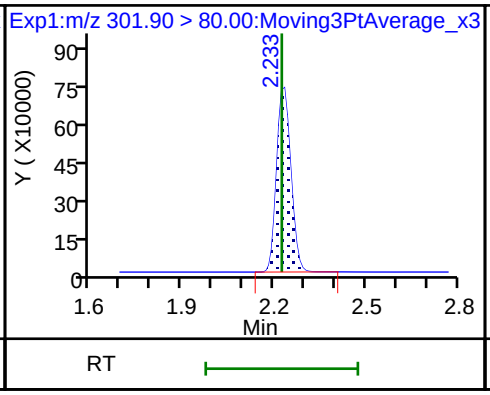
D 4 13C5 PFPeA



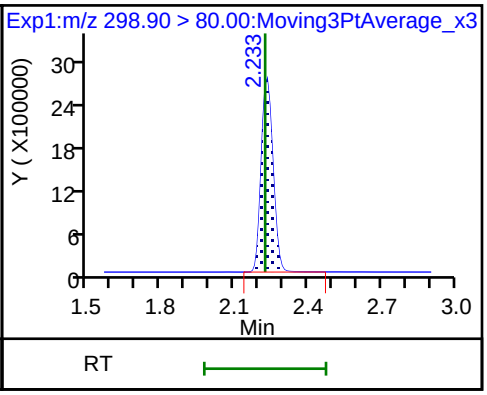
3 Perfluoropentanoic acid



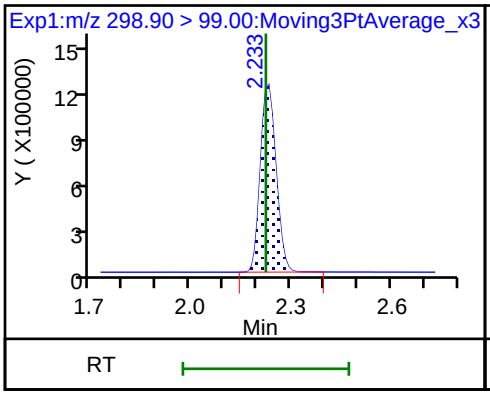
D 6 13C3 PFBS



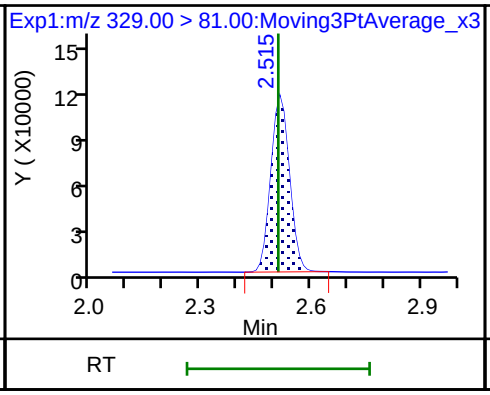
5 Perfluorobutanesulfonic acid



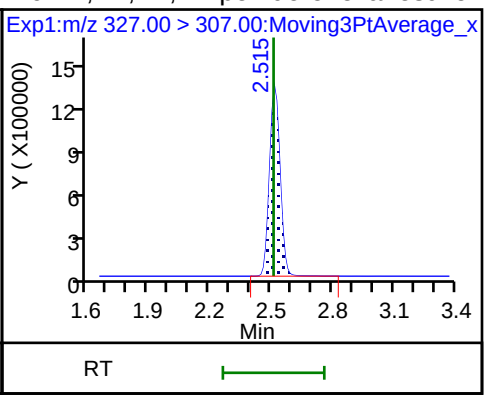
5 Perfluorobutanesulfonic acid



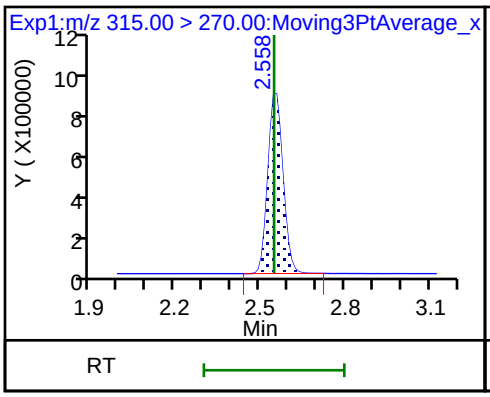
D 8 M2-4:2 FTS



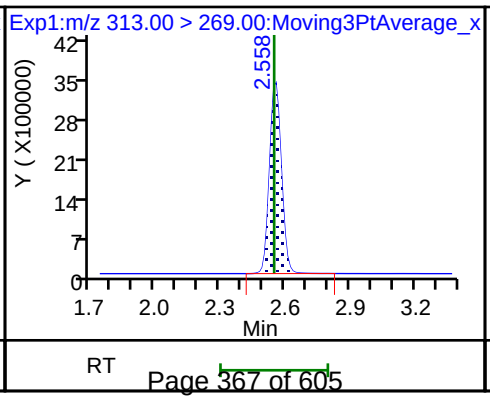
9 1H,1H,2H,2H-perfluorohexanesulfo



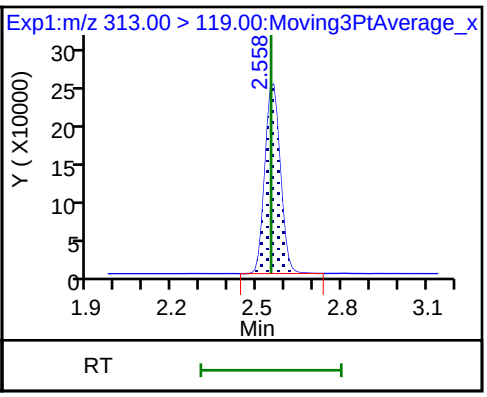
D 10 13C2 PFHxA



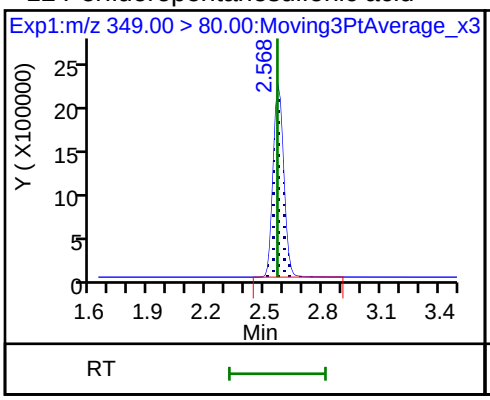
11 Perfluorohexanoic acid



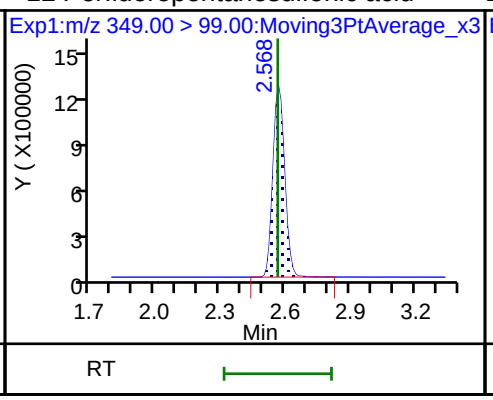
11 Perfluorohexanoic acid



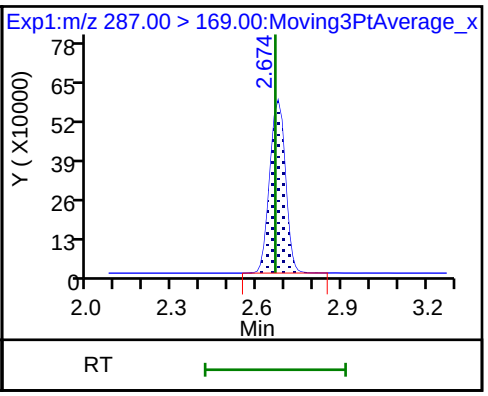
12 Perfluoropentanesulfonic acid



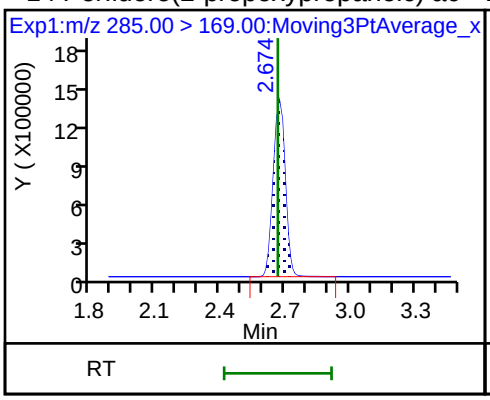
12 Perfluoropentanesulfonic acid



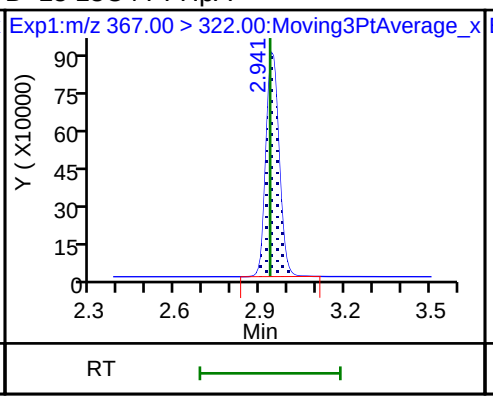
D 13 13C3 HFPO-DA



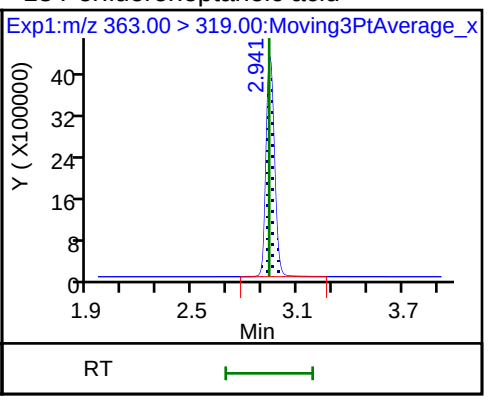
14 Perfluoro(2-propoxypropanoic) ac



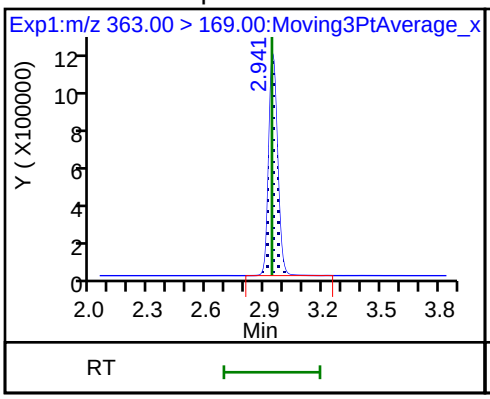
D 15 13C4 PFHpA



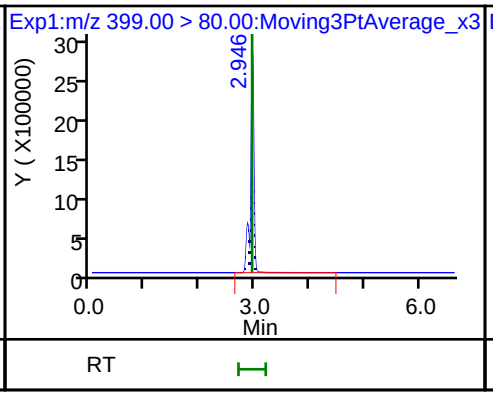
18 Perfluoroheptanoic acid



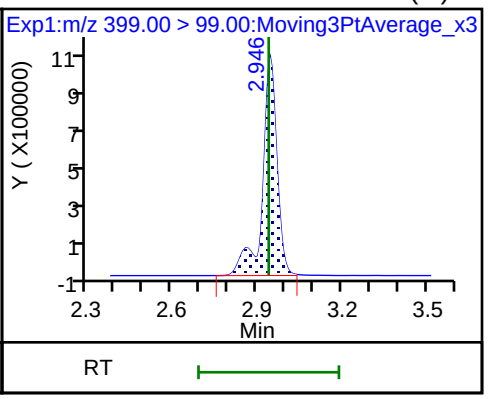
18 Perfluoroheptanoic acid



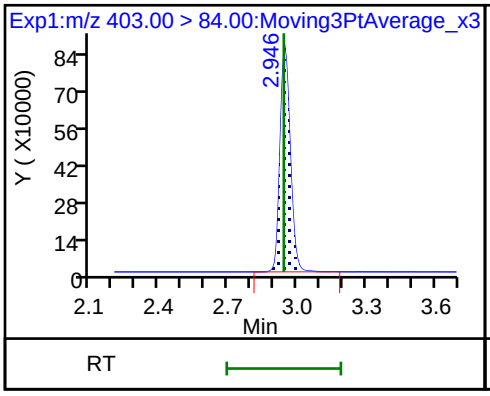
16 Perfluorohexanesulfonic acid



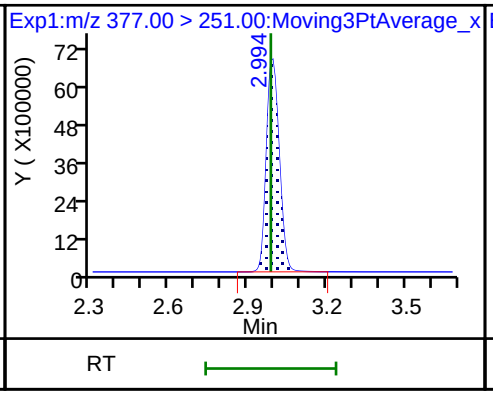
16 Perfluorohexanesulfonic acid (M)



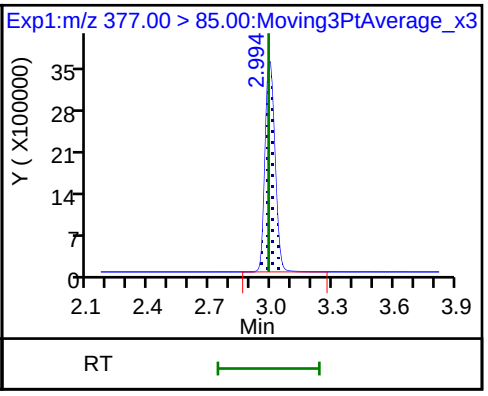
D 17 18O2 PFHxS



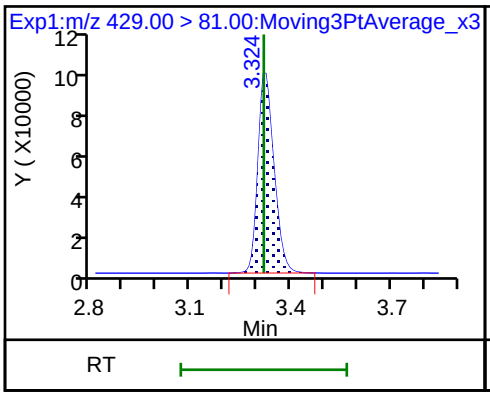
19 DONA



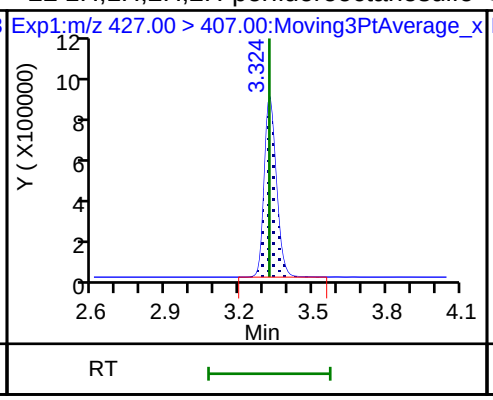
19 DONA



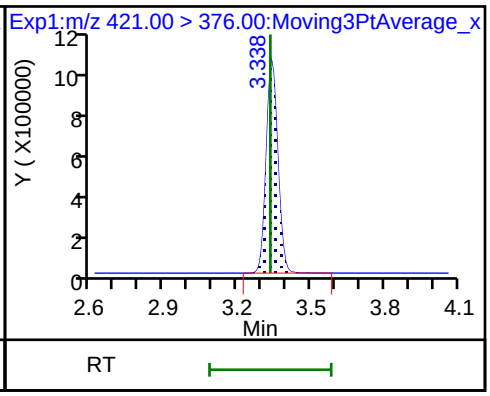
D 20 M2-6:2 FTS



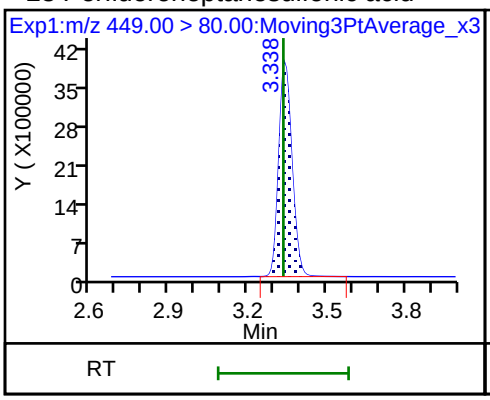
22 1H,1H,2H,2H-perfluorooctanesulfo



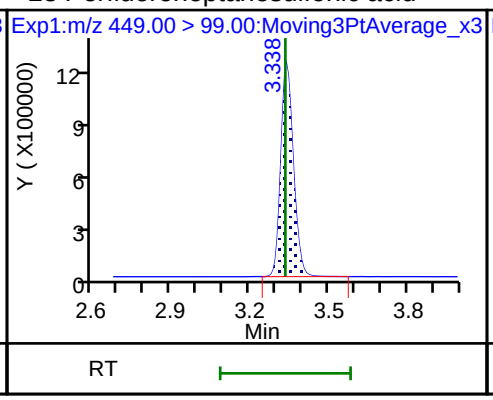
$ 21 13C8 PFOA



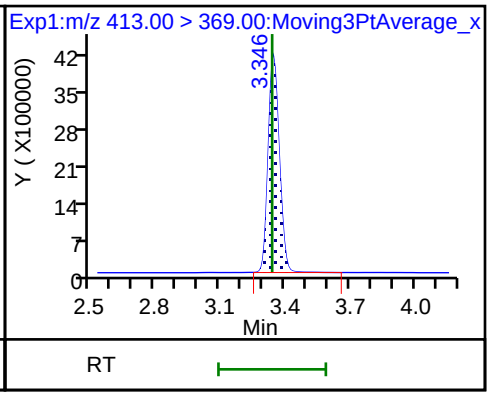
23 Perfluoroheptanesulfonic acid



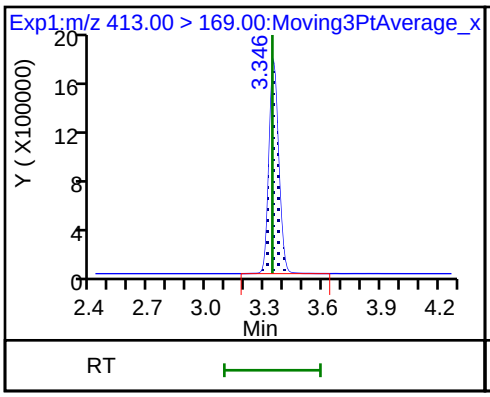
23 Perfluoroheptanesulfonic acid



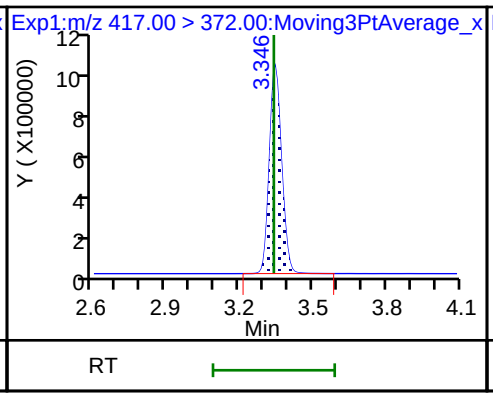
24 Perfluorooctanoic acid



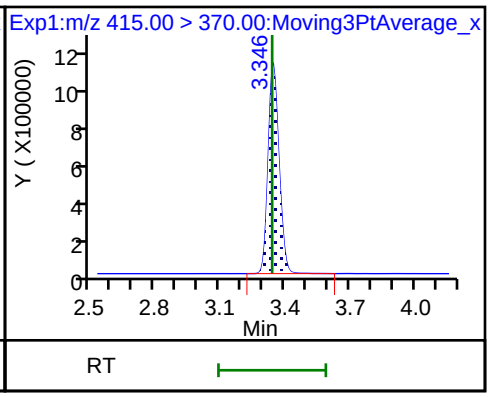
24 Perfluorooctanoic acid



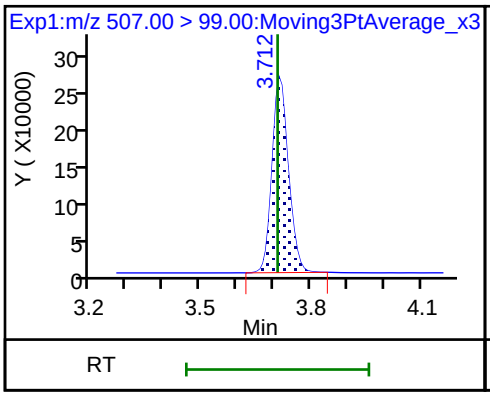
D 26 13C4 PFOA



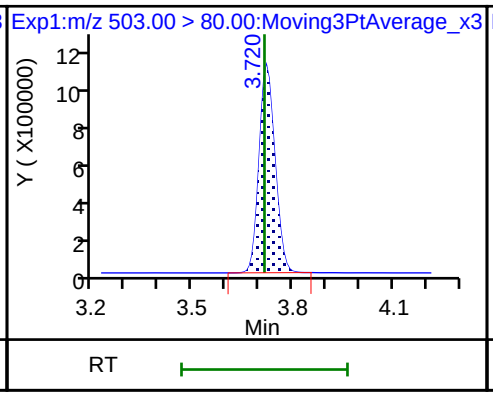
* 25 13C2 PFOA



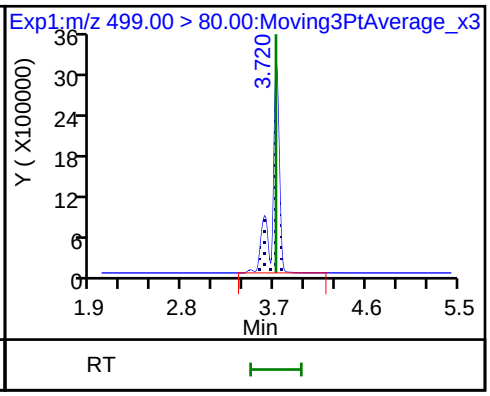
$ 27 13C8 PFOS



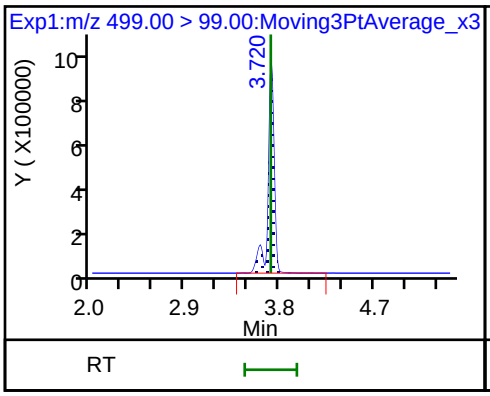
D 31 13C4 PFOS



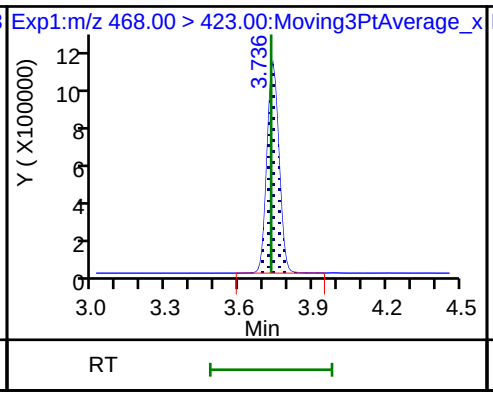
28 Perfluorooctanesulfonic acid



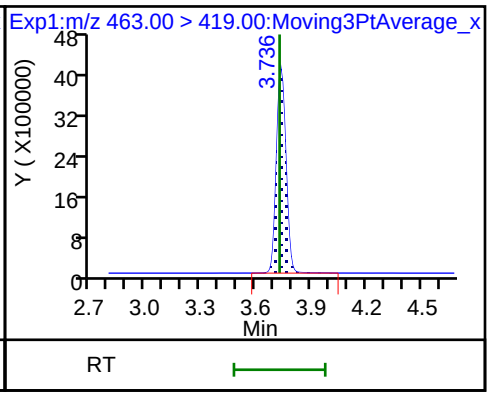
28 Perfluorooctanesulfonic acid



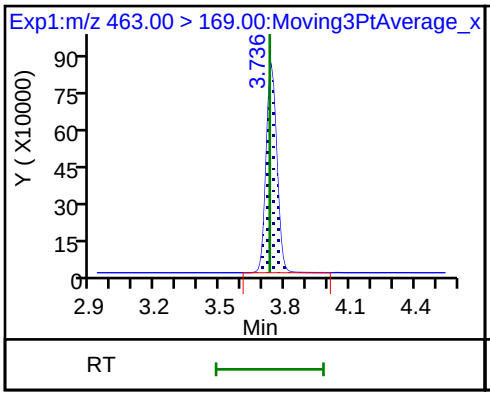
D 29 13C5 PFNA



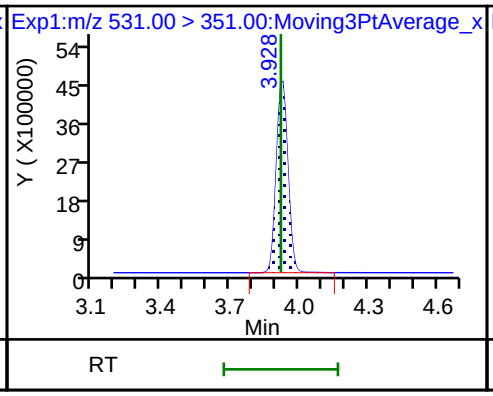
30 Perfluorononanoic acid



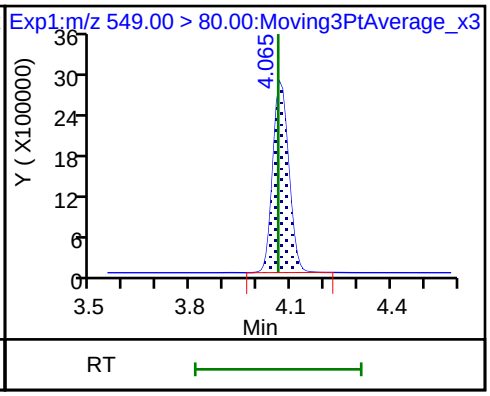
30 Perfluorononanoic acid



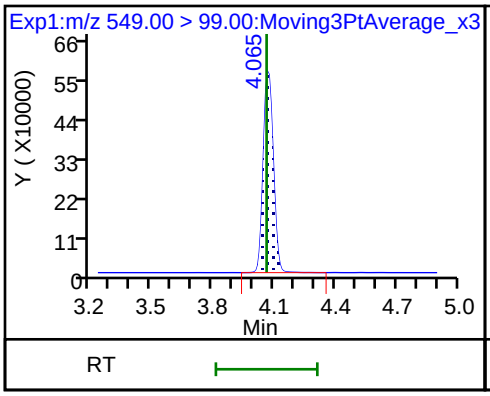
32 9-Chlorohexadecafluoro-3-oxanona



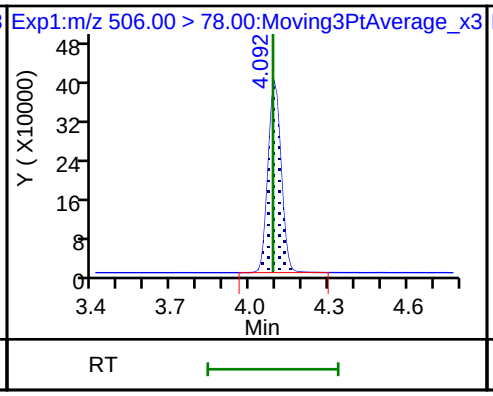
35 Perfluorononanesulfonic acid



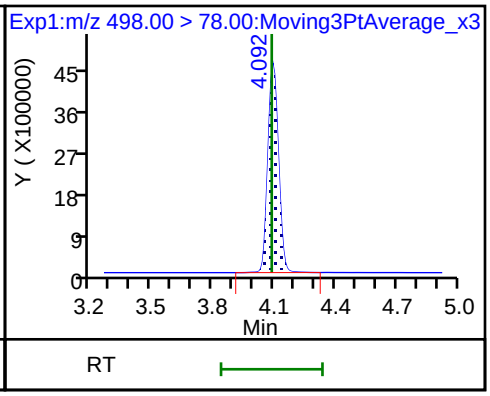
35 Perfluorononanesulfonic acid



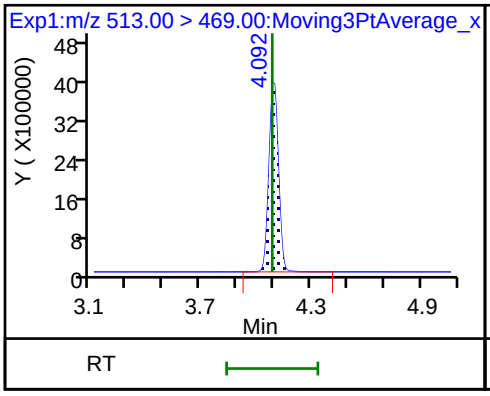
D 36 13C8 FOSA



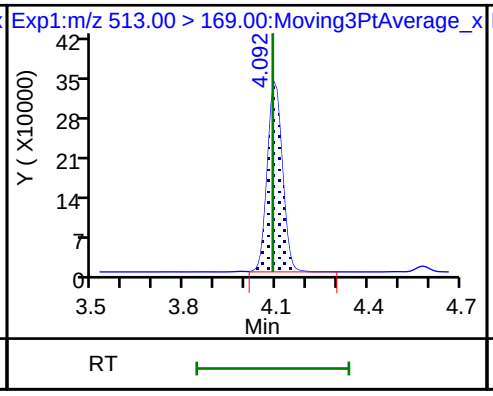
34 Perfluorooctanesulfonamide



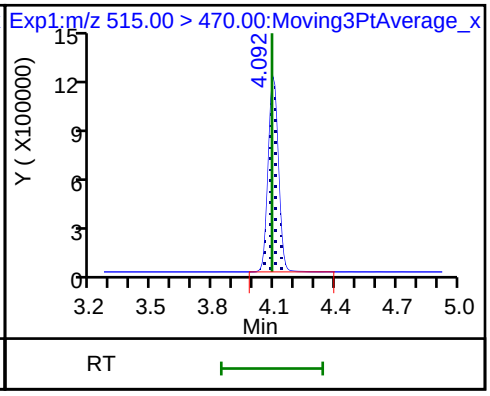
38 Perfluorodecanoic acid



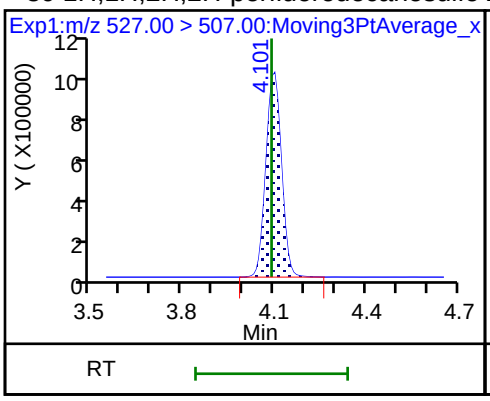
38 Perfluorodecanoic acid



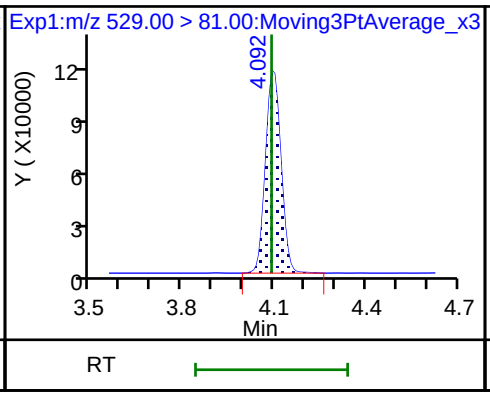
D 33 13C2 PFDA



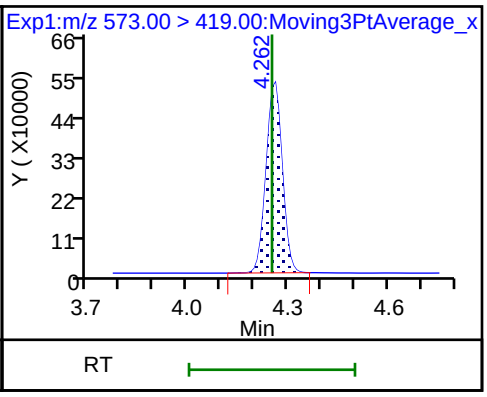
39 1H,1H,2H,2H-perfluorodecanesulfo



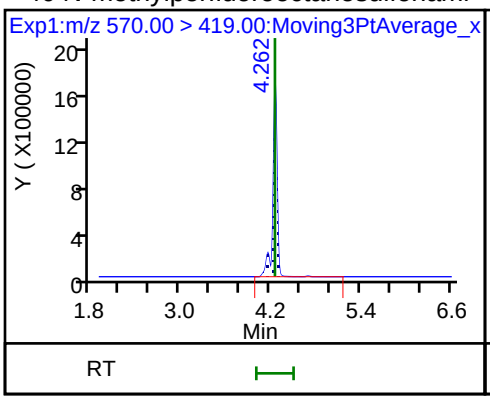
D 37 M2-8:2 FTS



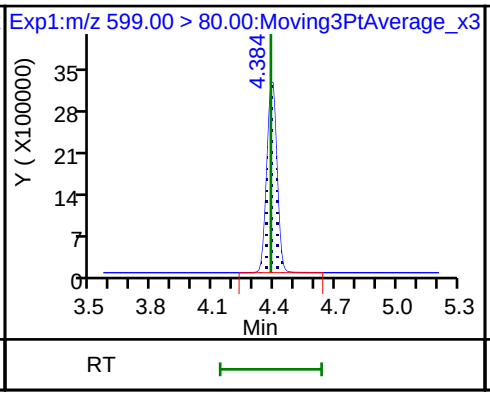
D 41 d3-NMeFOSAA



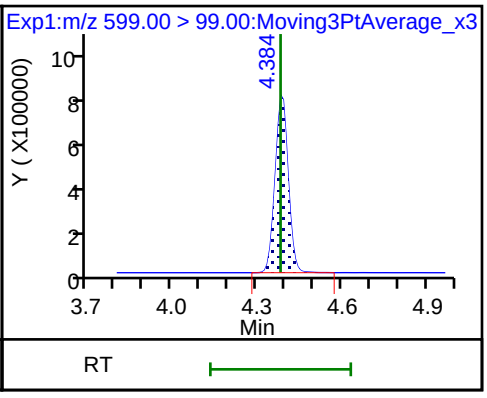
40 N-methylperfluorooctanesulfonami



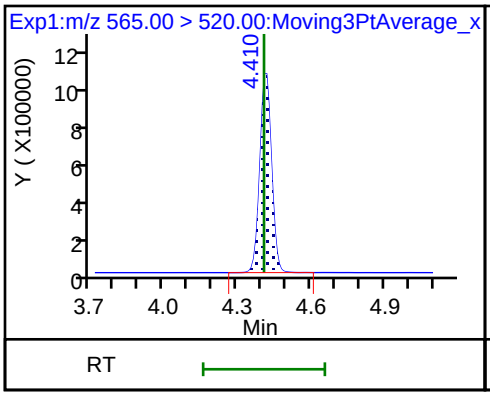
42 Perfluorodecanesulfonic acid



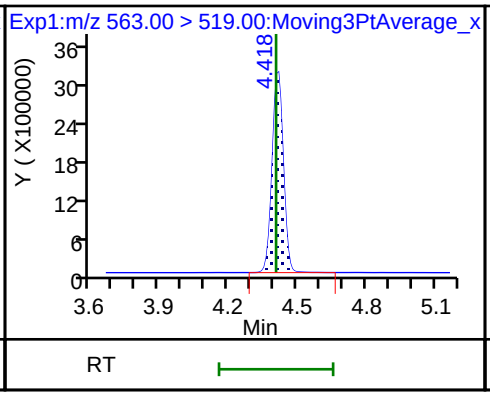
42 Perfluorodecanesulfonic acid



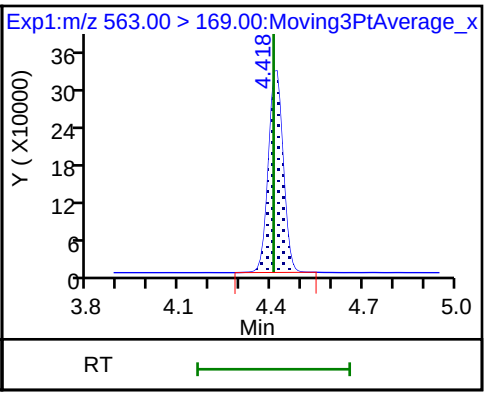
D 46 13C2 PFUnA



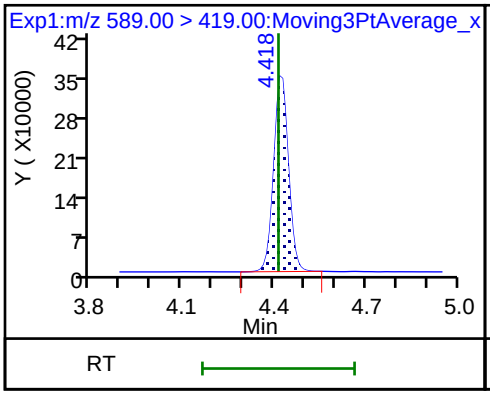
43 Perfluoroundecanoic acid



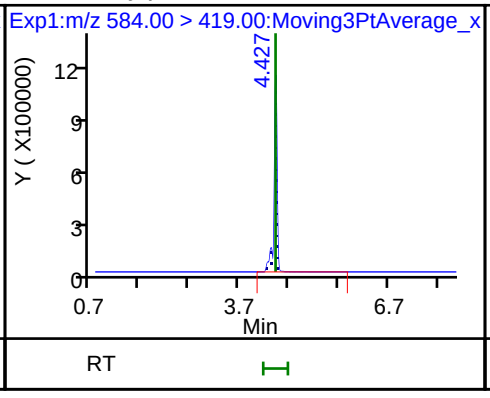
43 Perfluoroundecanoic acid



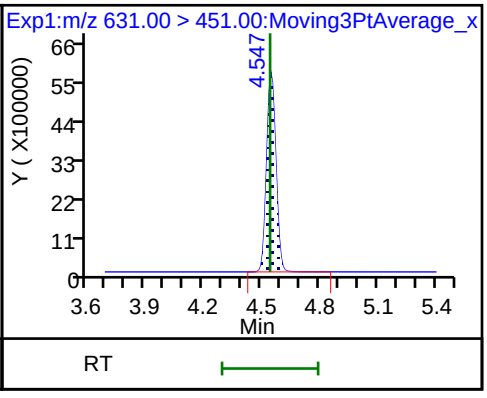
D 45 d5-NEtFOSAA



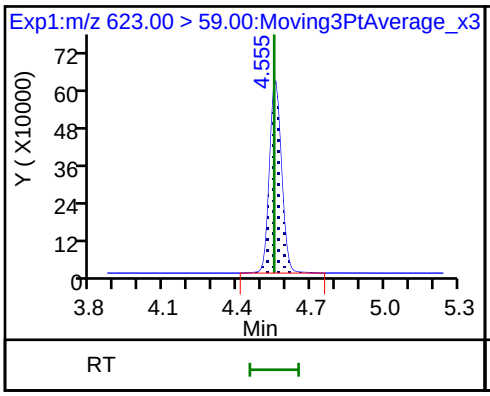
44 N-ethylperfluorooctanesulfonamid



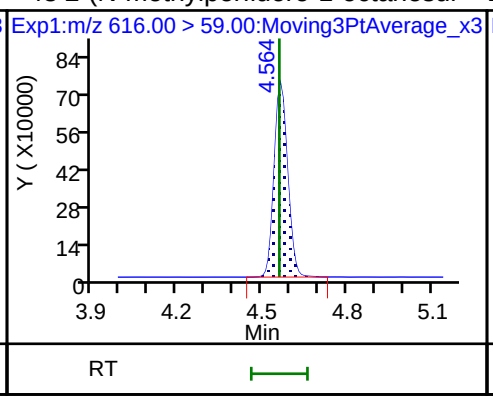
51 11-Chloroeicosafluoro-3-oxaundec



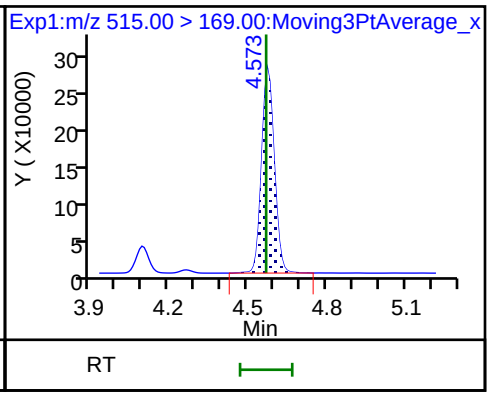
D 47 d7-N-MeFOSE-M



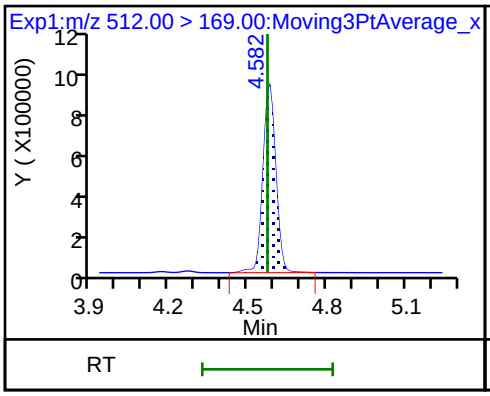
48 2-(N-methylperfluoro-1-octanesul



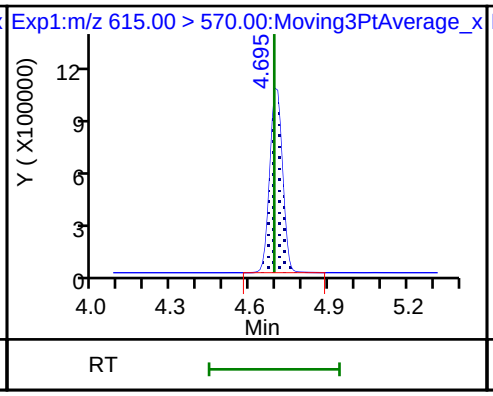
D 49 d-N-MeFOSA-M



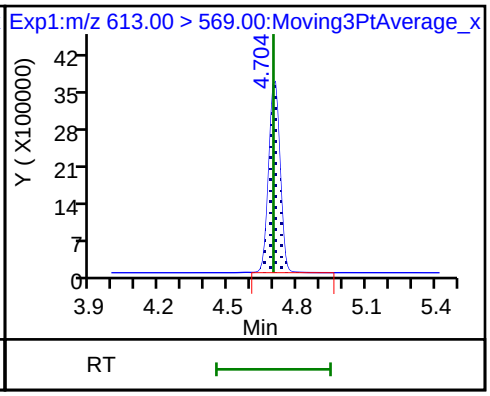
50 NMeFOSA



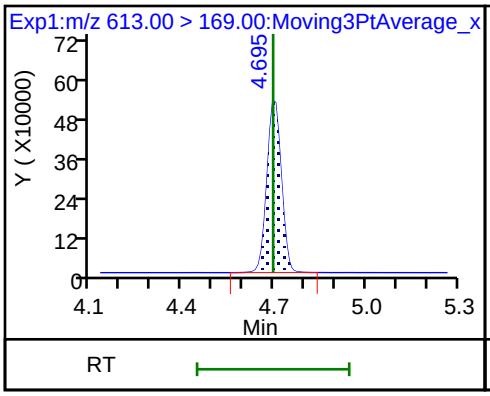
D 56 13C2 PFDoA



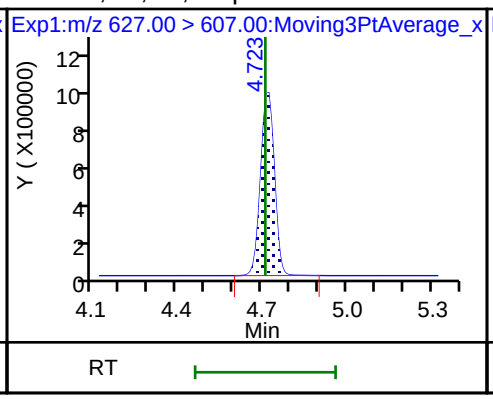
52 Perfluorododecanoic acid



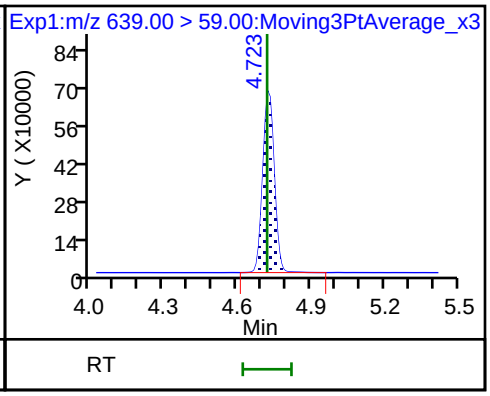
52 Perfluorododecanoic acid



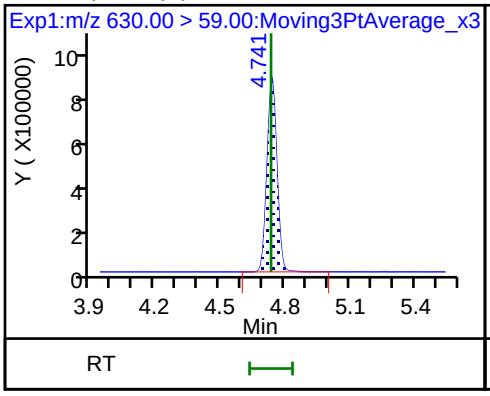
55 1H,1H,2H,2H-perfluorododecanesul



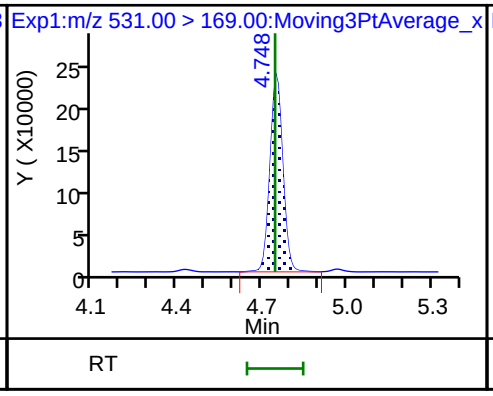
D 53 d9-N-EtFOSE-M



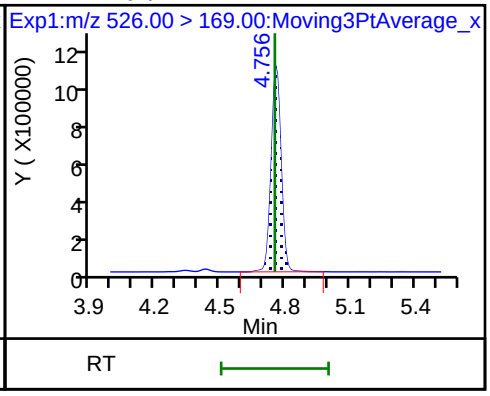
54 2-(N-ethylperfluoro-1-octanesulf



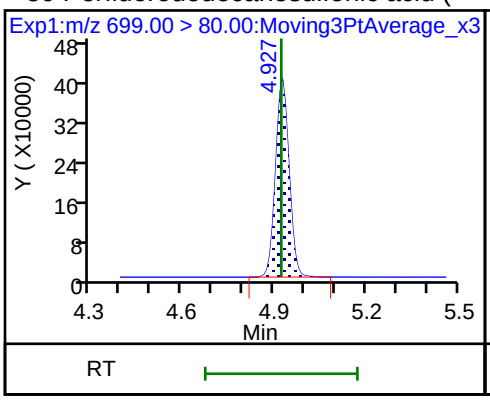
D 58 d-N-EtFOSA-M



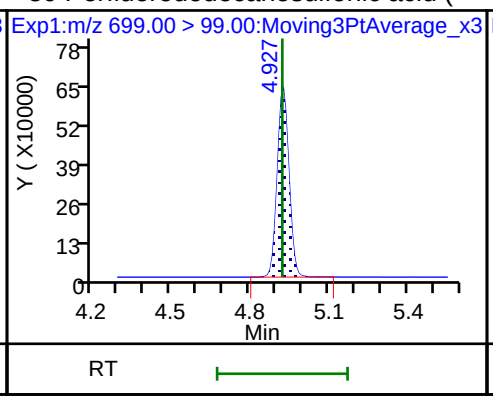
57 N-ethylperfluoro-1-octanesulfona



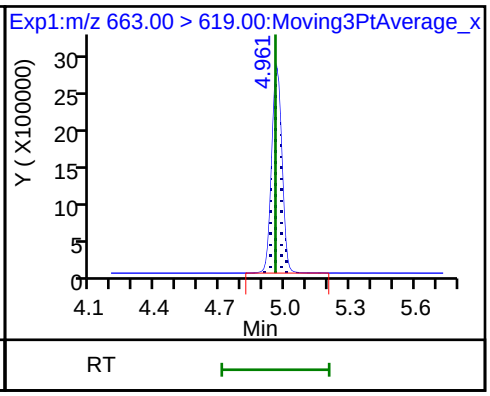
59 Perfluorododecanesulfonic acid (



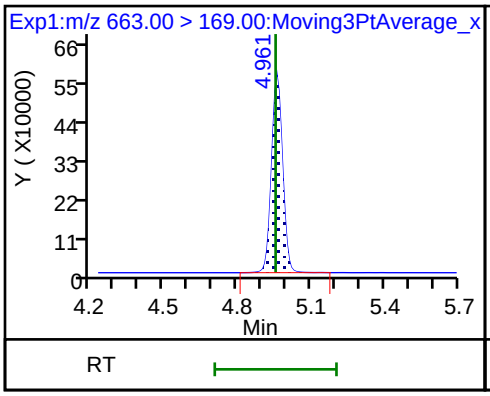
59 Perfluorododecanesulfonic acid (



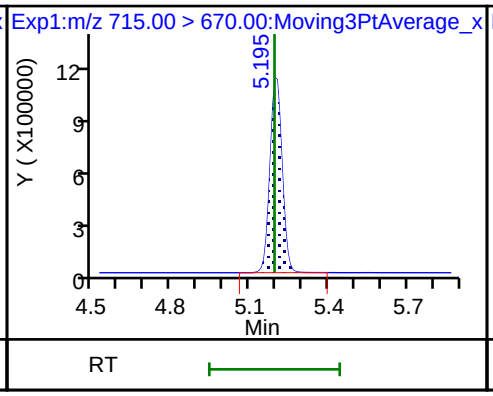
60 Perfluorotridecanoic acid



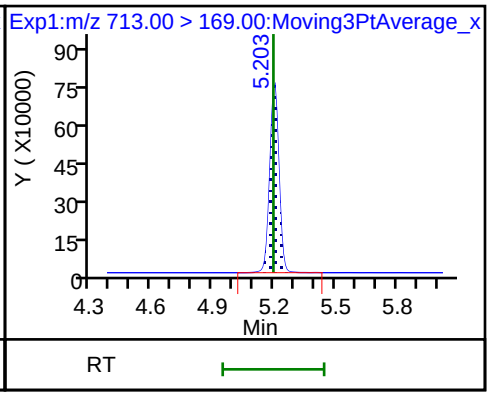
60 Perfluorotridecanoic acid



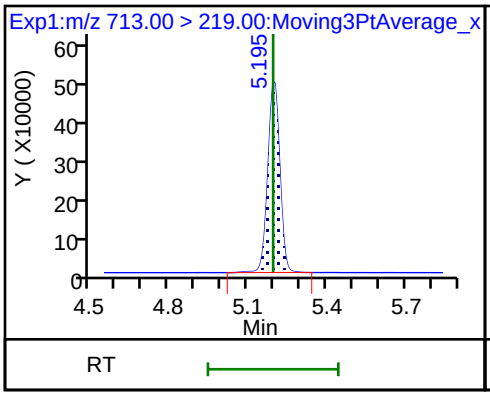
D 62 13C2 PFTeDA



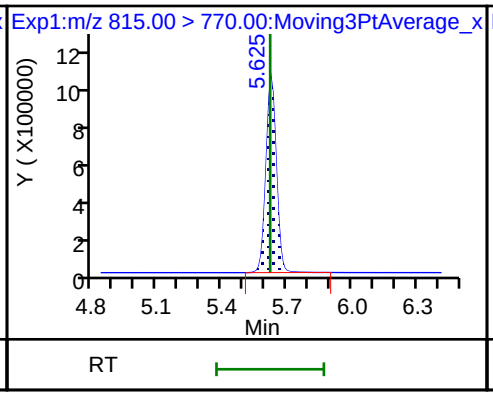
61 Perfluorotetradecanoic acid



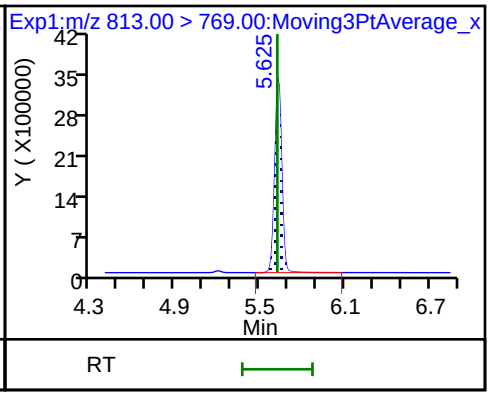
61 Perfluorotetradecanoic acid



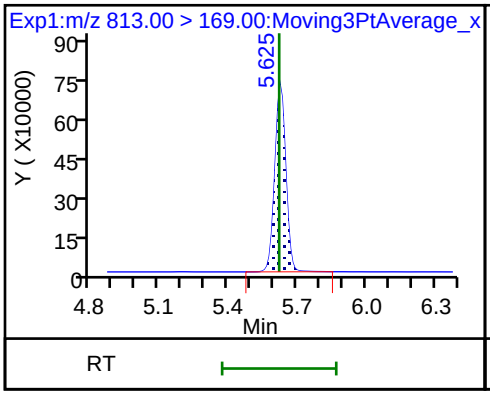
D 63 13C2 PFHxDA



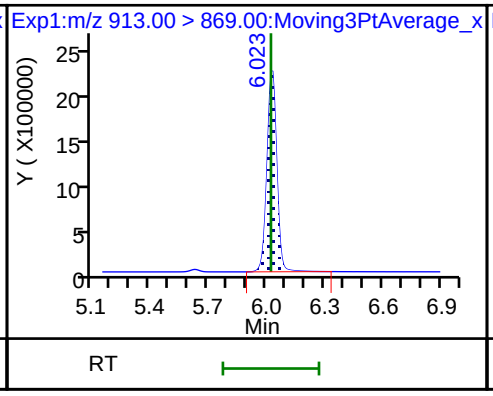
64 Perfluorohexadecanoic acid



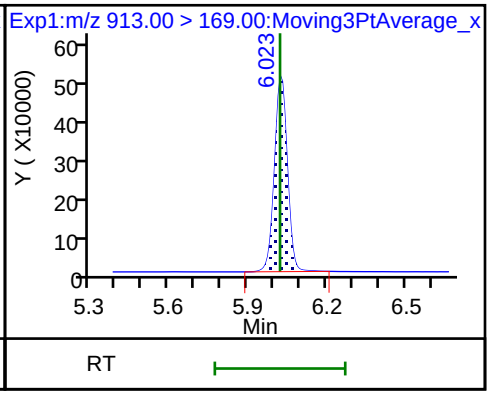
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

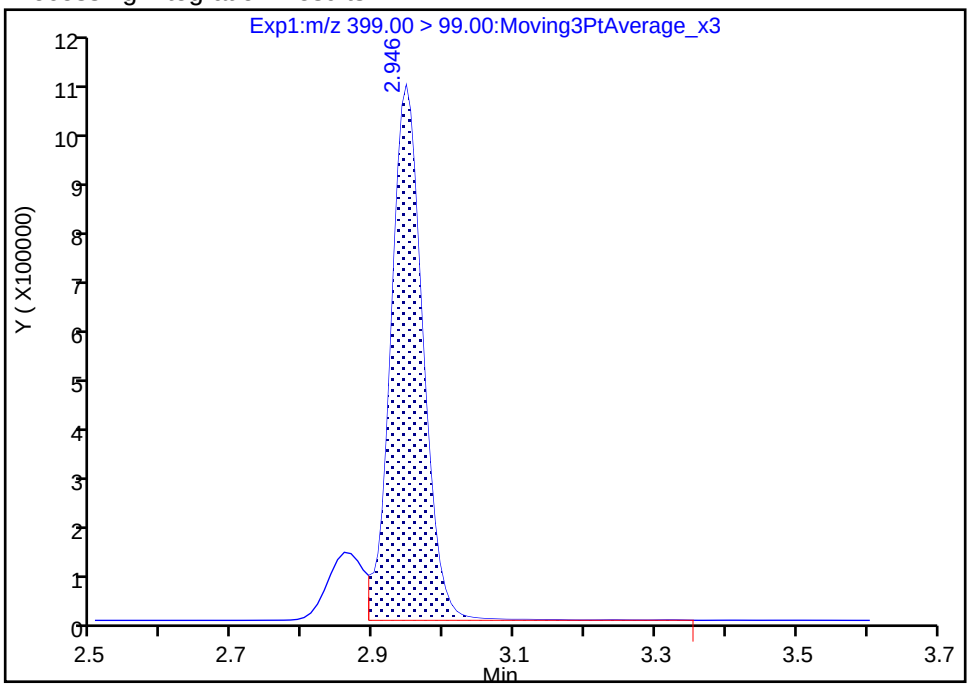
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d				
Injection Date:	02-Jun-2020 16:30:05	Instrument ID:	A9		
Lims ID:	IC L7 Full				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

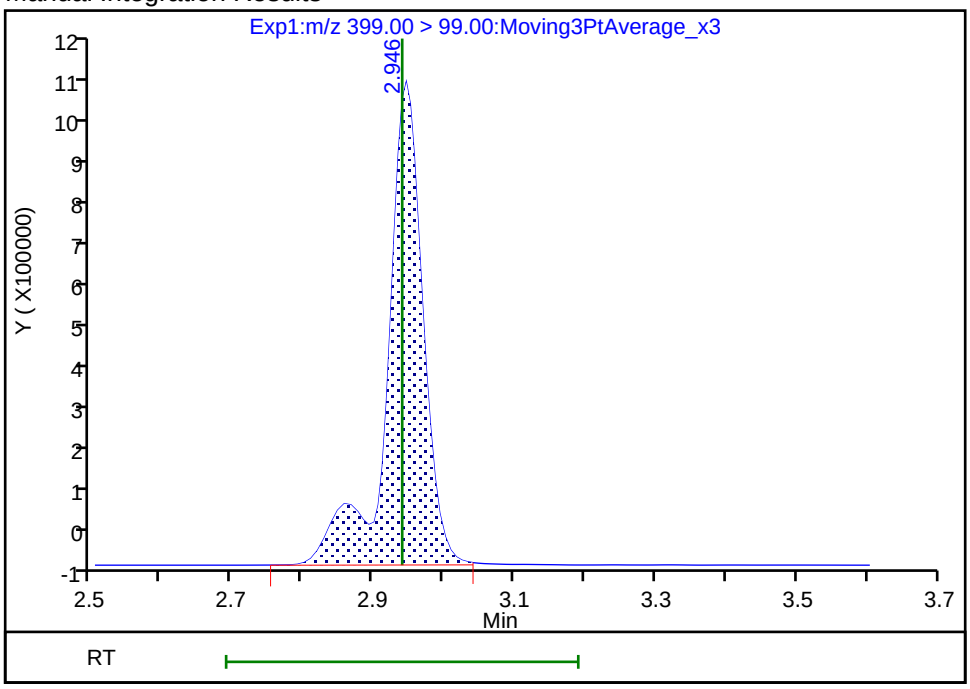
Processing Integration Results

RT: 2.95
Area: 3336968
Amount: 8.630070
Amount Units: ng/ml



Manual Integration Results

RT: 2.95
Area: 3785858
Amount: 8.630070
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:55:58

Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: ICV 320-383313/10 Calibration Date: 06/04/2020 13:09

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_ICAL_A_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.9260	0.9740		2.63	2.50	5.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.007	0.9613		2.39	2.50	-4.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9749	1.056		2.71	2.50	8.3	50.0
4:2 FTS	AveID	2.255	2.459		2.55	2.34	9.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9375	1.046		2.79	2.50	11.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7335	0.7115		2.27	2.35	-3.0	50.0
HFPO-DA (GenX)	AveID	0.9134	0.999		2.73	2.50	9.4	40.0
Perfluoroheptanoic acid	AveID	1.011	0.9846		2.44	2.50	-2.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.123	1.081		2.41	2.50	-3.8	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	7.331	8.277		2.82	2.50	12.9	50.0
6:2 FTS	AveID	1.966	2.202		2.66	2.37	12.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.091	1.057		2.31	2.38	-3.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.057	1.040		2.46	2.50	-1.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9894	0.9761		2.47	2.50	-1.3	40.0
Perfluorononanoic acid (PFNA)	AveID	1.014	1.085		2.68	2.50	7.0	40.0
F-53B Major	AveID	2.729	2.882		2.64	2.50	5.6	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7987	0.7619		2.29	2.40	-4.6	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.8783	0.8377		2.38	2.50	-4.6	40.0
8:2 FTS	AveID	1.631	1.721		2.53	2.40	5.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9658	1.042		2.70	2.50	7.9	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7297	0.7824		2.68	2.50	7.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7009	0.6703		2.30	2.41	-4.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7214	0.8447		2.93	2.50	17.1	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.7067	0.7447		2.63	2.50	5.4	40.0
F-53B Minor	AveID	2.579	2.753		2.67	2.50	6.7	50.0
NMeFOSE	AveID	1.047	1.060		2.53	2.50	1.2	40.0
NMeFOSA	AveID	0.9416	1.023		2.72	2.50	8.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9816	0.8977		2.29	2.50	-8.5	40.0
10:2 FTS	AveID	1.287	1.408		2.64	2.41	9.4	50.0
NEtFOSE	AveID	1.024	0.9307		2.27	2.50	-9.1	40.0
NEtFOSA	AveID	1.002	1.050		2.62	2.50	4.8	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2435	0.2471		2.46	2.42	1.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

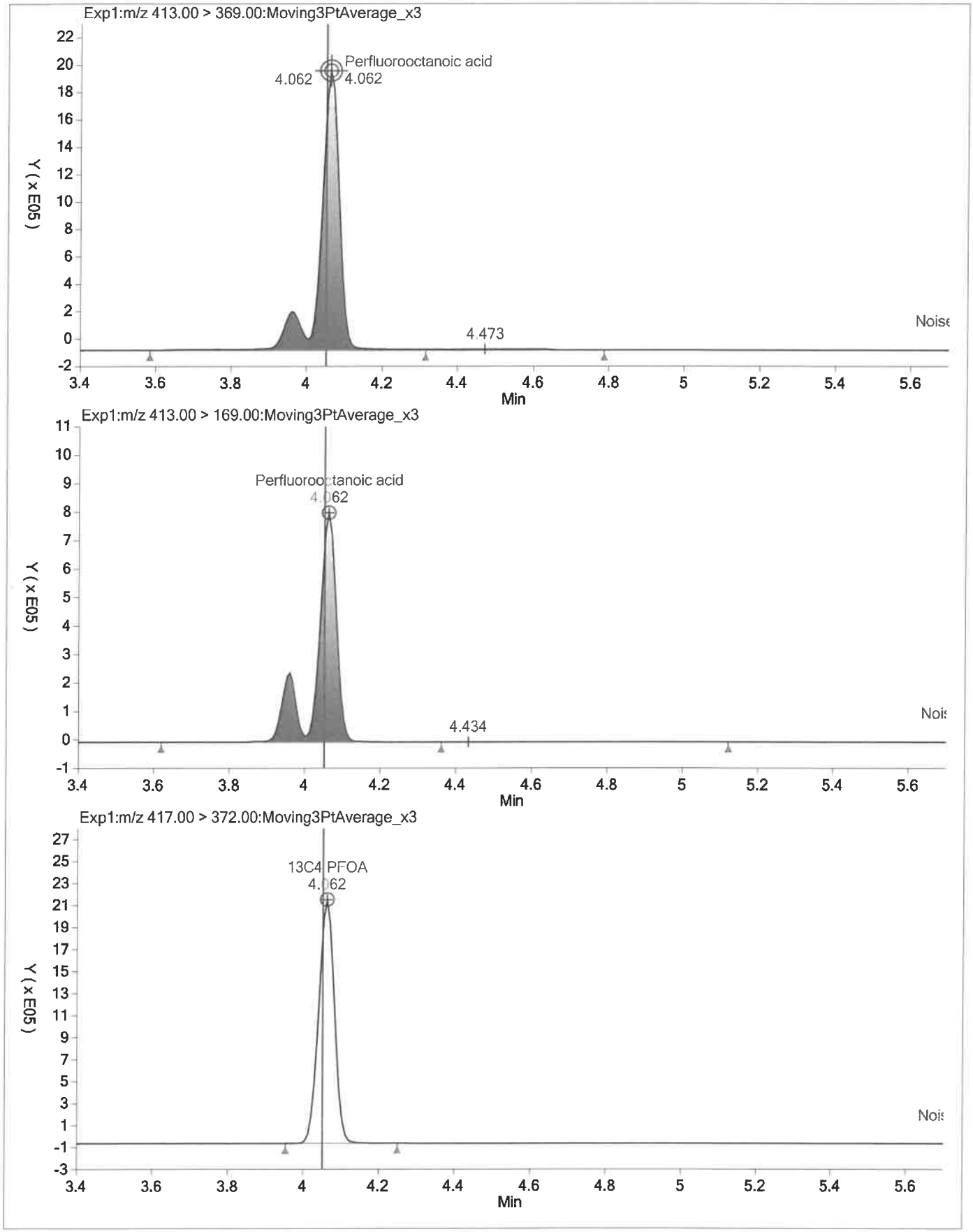
Lab Sample ID: ICV 320-383313/10 Calibration Date: 06/04/2020 13:09

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_ICAL_A_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7891	0.7630		2.42	2.50	-3.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.000	1.039		2.60	2.50	3.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8009		2.33	2.50	-6.9	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4920	0.4512		2.29	2.50	-8.3	50.0
13C4 PFBA	Ave	1.583	1.607		2.54	2.50	1.5	50.0
13C5 PFPeA	Ave	1.414	1.432		2.53	2.50	1.3	50.0
13C3 PFBS	Ave	0.9803	1.004		2.38	2.33	2.4	50.0
M2-4:2 FTS	Ave	0.1305	0.1300		2.33	2.34	-0.4	50.0
13C2 PFHxA	Ave	1.374	1.372		2.50	2.50	-0.1	50.0
13C3 HFPO-DA	Ave	0.3145	0.3361		2.67	2.50	6.9	50.0
13C4 PFHpA	Ave	1.090	1.133		2.60	2.50	4.0	50.0
18O2 PFHxS	Ave	0.4715	0.4933		2.47	2.37	4.6	50.0
M2-6:2 FTS	Ave	0.1440	0.1492		2.46	2.38	3.6	50.0
13C4 PFOA	Ave	0.9856	1.067		2.71	2.50	8.2	50.0
13C4 PFOS	Ave	0.3660	0.3750		2.45	2.39	2.5	50.0
13C5 PFNA	Ave	0.7544	0.8415		2.79	2.50	11.6	50.0
13C8 FOSA	Ave	0.7278	0.7315		2.51	2.50	0.5	50.0
13C2 PFDA	Ave	0.7192	0.7442		2.59	2.50	3.5	50.0
M2-8:2 FTS	Ave	0.1717	0.1705		2.38	2.40	-0.7	50.0
d3-NMeFOSAA	Ave	0.2685	0.2702		2.52	2.50	0.6	50.0
13C2 PFUnA	Ave	0.6132	0.6177		2.52	2.50	0.7	50.0
d5-NEtFOSAA	Ave	0.2733	0.2778		2.54	2.50	1.6	50.0
d7-N-MeFOSE-M	Ave	0.1833	0.1918		13.1	12.5	4.6	50.0
d-N-MeFOSA-M	Ave	0.2300	0.2455		2.67	2.50	6.8	50.0
13C2 PFDoA	Ave	0.5432	0.5431		2.50	2.50	-0.0	50.0
d9-N-EtFOSE-M	Ave	0.2246	0.2544		14.2	12.5	13.3	50.0
d-N-EtFOSA-M	Ave	0.2334	0.2524		2.70	2.50	8.1	50.0
13C2 PFTeDA	Ave	0.3551	0.3313		2.33	2.50	-6.7	50.0
13C2 PFHxDA	Ave	0.2944	0.3366		2.86	2.50	14.3	50.0


Exp1:m/z 413.00 > 369.00:Moving3PtAverage_x3
Perfluorooctanoic acid
4.062
4.062
4.473
Y (x E05)
Min
Exp1:m/z 413.00 > 169.00:Moving3PtAverage_x3
Perfluorooctanoic acid
4.062
4.434
Y (x E05)
Min
Exp1:m/z 417.00 > 372.00:Moving3PtAverage_x3
13C4 PFOA
4.062
Y (x E05)
Min

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_012.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 04-Jun-2020 13:09:51 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: ICV (36)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist:

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:53:10 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:12:27
Ratio Calibration: Average of Initial Calibration

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	2.555	2.538	0.017	0.630	9125803	2.54		102	17323	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.555	2.538	0.017	1.000	8888762	2.63			2287	
D 4 13C5 PFPeA										
267.90 > 223.00	2.895	2.876	0.019	0.714	8133658	2.53		101	12387	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.905	2.886	0.019	1.004	7818703	2.39			591	
D 9 13C3 PFBS										
301.90 > 80.00	2.936	2.917	0.019	0.724	5301307	2.38		102	14496	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.936	2.917	0.019	1.000	6017687	2.71	Target=2.14		2767	
298.90 > 99.00	2.936	2.917	0.019	1.000	2783022		2.16(1.07-3.21)		1865	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.227	3.212	0.015	0.796	689355	2.33		99.6	1500	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.234	3.212	0.022	1.002	1695194	2.55			15435	
D 11 13C2 PFHxA										
315.00 > 270.00	3.274	3.246	0.028	0.808	7792344	2.50		99.9	14524	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.274	3.246	0.028	1.000	8150913	2.79	Target=15.73		3208	
313.00 > 119.00	3.274	3.246	0.028	1.000	544996		14.96(7.86-23.59)		1360	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.295	3.265	0.030	1.122	3804305	2.27	Target=2.69		8135	
349.00 > 99.00	3.284	3.265	0.019	1.118	1432739		2.66(1.35-4.04)		5429	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.390	3.370	0.020	0.836	1908657	2.67		107	10032	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.390	3.370	0.020	1.000	1906500	2.73			10645	
D 18 13C4 PFHpA										
367.00 > 322.00	3.665	3.647	0.018	0.904	6436303	2.60		104	15078	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.665	3.647	0.018	1.000	6337336	2.44	Target=3.80		2393	
363.00 > 169.00	3.665	3.647	0.018	1.000	1672642		3.79(1.90-5.71)		5880	
D 17 18O2 PFHxS										
403.00 > 84.00	3.675	3.647	0.028	0.907	2650038	2.47		105	9072	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.675	3.657	0.018	1.000	3027307	2.41	Target=2.99		7688	
399.00 > 99.00	3.675	3.657	0.018	1.000	998671		3.03(1.50-4.49)		2257	
19 DONA										
377.00 > 251.00	3.714	3.696	0.018	0.844	17627030	2.82	Target=2.14		15961	
377.00 > 85.00	3.714	3.696	0.018	0.844	8205666		2.15(1.07-3.21)		10979	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.037	4.014	0.023	0.996	804721	2.46		104	4402	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.037	4.023	0.014	1.000	1768509	2.66			8697	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.054	4.039	0.015	0.921	2143974	2.31	Target=3.77		3376	
449.00 > 99.00	4.054	4.039	0.015	0.921	564590		3.80(1.89-5.66)		2620	
D 25 13C4 PFOA										
417.00 > 372.00	4.054	4.039	0.015	1.000	6058925	2.71		108	14700	
* 23 13C2 PFOA										
415.00 > 370.00	4.054	4.039	0.015		5679046	2.50			12526	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.054	4.039	0.015	1.000	6298618	2.46	Target=2.88		425	
413.00 > 169.00	4.054	4.039	0.015	1.000	2308216		2.73(1.44-4.31)		15731	
D 27 13C4 PFOS										
503.00 > 80.00	4.402	4.396	0.006	1.086	2035977	2.45		102	5780	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.410	4.396	0.014	1.002	2078803	2.47	Target=4.89		5012	
499.00 > 99.00	4.402	4.396	0.006	1.000	401383		5.18(2.44-7.33)		1706	M
D 30 13C5 PFNA										
468.00 > 423.00	4.418	4.412	0.006	1.090	4779019	2.79		112	10191	
31 Perfluorononanoic acid										
463.00 > 419.00	4.418	4.412	0.006	1.000	5187010	2.68	Target=7.00		917	
463.00 > 169.00	4.418	4.412	0.006	1.000	739417		7.01(3.50-10.51)		2829	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.596	4.589	0.007	1.044	6137983	2.64			8253	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.733	4.728	0.005	1.075	1557639	2.29	Target=2.77		2980	
549.00 > 99.00	4.733	4.728	0.005	1.075	557986		2.79(1.38-4.15)		3547	
D 33 13C8 FOSA										
506.00 > 78.00	4.747	4.750	-0.003	1.171	4154474	2.51		101	6527	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.747	4.750	-0.003	1.000	3480367	2.38			3157	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.755	4.750	0.005	1.000	4402493	2.70	Target=10.36		1176	
513.00 > 169.00	4.755	4.750	0.005	1.000	392915		11.20(5.18-15.54)		227	
D 39 13C2 PFDA										
515.00 > 470.00	4.755	4.758	-0.003	1.173	4226506	2.59		103	10107	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.755	4.758	-0.003	1.000	1595826	2.53			5727	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.755	4.758	-0.003	1.173	927517	2.38		99.3	4105	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.911	4.914	-0.003	1.211	1534367	2.52		101	2529	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.920	4.914	0.006	1.002	1200500	2.68			1122	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.032	5.037	-0.005	1.143	1376027	2.30	Target=2.97		4992	
599.00 > 99.00	5.032	5.037	-0.005	1.143	474034		2.90(1.49-4.46)		2482	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.059	5.064	-0.005	1.000	2963294	2.93	Target=7.56		1360	
563.00 > 169.00	5.068	5.064	0.004	1.002	385155		7.69(3.78-11.34)		513	
D 43 13C2 PFUnA										
565.00 > 520.00	5.059	5.064	-0.005	1.248	3508146	2.52		101	6522	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.068	5.073	-0.005	1.250	1577508	2.54		102	1633	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.077	5.073	0.004	1.002	1174752	2.63			1355	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.186	5.191	-0.005	1.178	5862951	2.67			9707	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.195	5.200	-0.005	1.282	5447345	13.1		105	4683	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.204	5.209	-0.005	1.002	1154402	2.53			2195	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.213	5.218	-0.005	1.286	1394222	2.67		107	231	
50 NMeFOSA										
512.00 > 169.00	5.223	5.227	-0.005	1.002	1426658	2.72			753	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.343	5.338	0.005	1.000	2768618	2.29	Target=7.18		396	
613.00 > 169.00	5.343	5.338	0.005	1.000	380562		7.28(3.59-10.76)		477	
D 56 13C2 PFDoA										
615.00 > 570.00	5.343	5.347	-0.004	1.318	3084084	2.50		100.0	8538	
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.361	5.366	-0.005	1.127	1314325	2.64			7360	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.361	5.366	-0.005	1.322	7223873	14.2		113	7108	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.377	5.382	-0.005	1.003	1344637	2.27			2241	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.385	5.393	-0.007	1.328	1433272	2.70		108	445	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.395	5.403	-0.008	1.002	1504458	2.62			755	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.558	5.566	-0.008	1.263	509295	2.46	Target=0.79		3928	
699.00 > 99.00	5.558	5.566	-0.008	1.263	630937		0.81(0.39-1.18)		2981	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.595	5.603	-0.008	1.047	2353271	2.42	Target=6.63		380	
663.00 > 169.00	5.595	5.603	-0.008	1.047	347232		6.78(3.32-9.95)		629	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.833	5.839	-0.006	1.439	1881184	2.33		93.3	8252	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.833	5.839	-0.006	1.000	1953720	2.60	Target=8.46		492	
713.00 > 219.00	5.824	5.839	-0.015	0.998	271337		7.20(4.23-12.69)		393	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.248	6.263	-0.015	1.541	1911345	2.86		114	5010	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.257	6.263	-0.006	1.002	1530745	2.33	Target=7.92		218	
813.00 > 169.00	6.248	6.263	-0.015	1.000	198389		7.72(3.96-11.88)		2300	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.646	6.656	-0.010	1.064	862321	2.29	Target=10.24		155	
913.00 > 169.00	6.652	6.656	-0.004	1.065	87907		9.81(5.12-15.36)		1159	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFCIC_FULL_00036 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:53:12 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_012.d

Injection Date: 04-Jun-2020 13:09:51 Instrument ID: A15

Lims ID: ICV

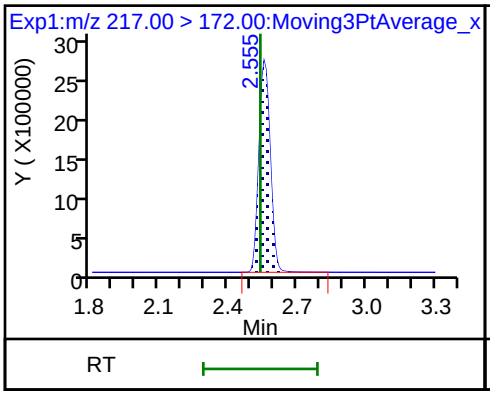
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 9 Worklist Smp#: 10

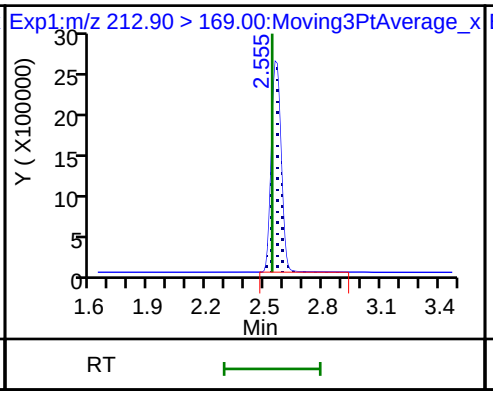
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

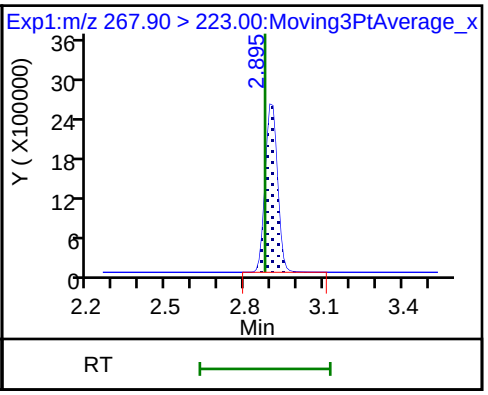
D 1 13C4 PFBA



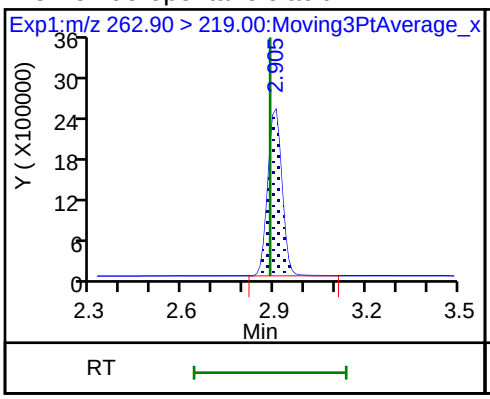
2 Perfluorobutanoic acid



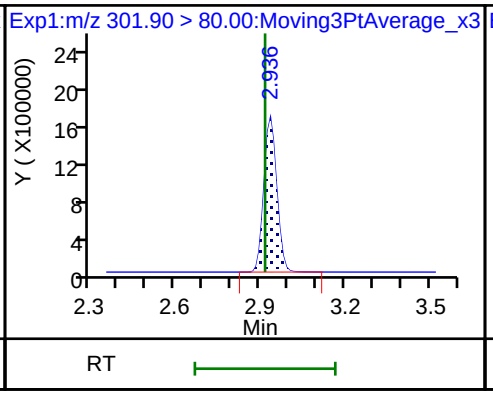
D 4 13C5 PFPeA



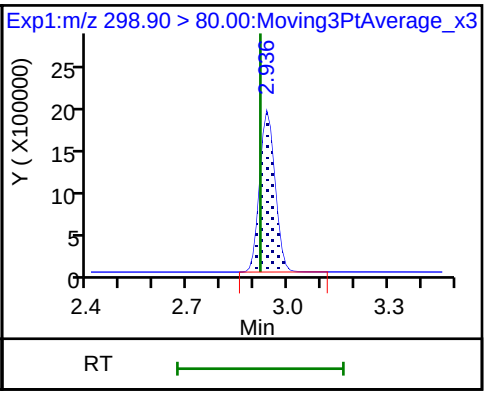
5 Perfluoropentanoic acid



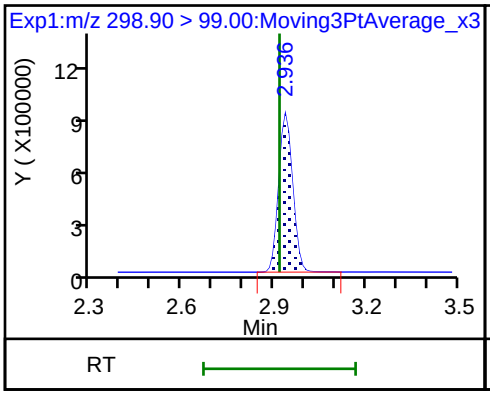
D 9 13C3 PFBS



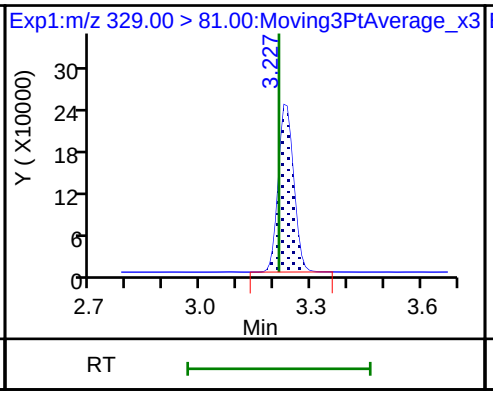
6 Perfluorobutanesulfonic acid



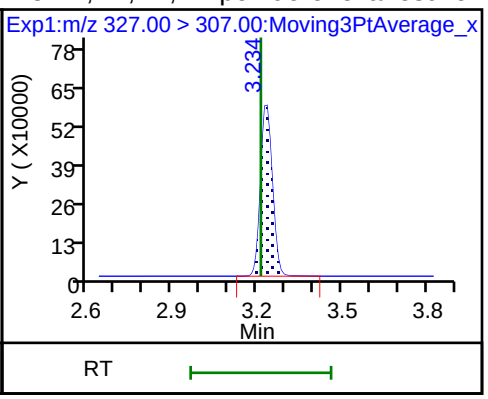
6 Perfluorobutanesulfonic acid



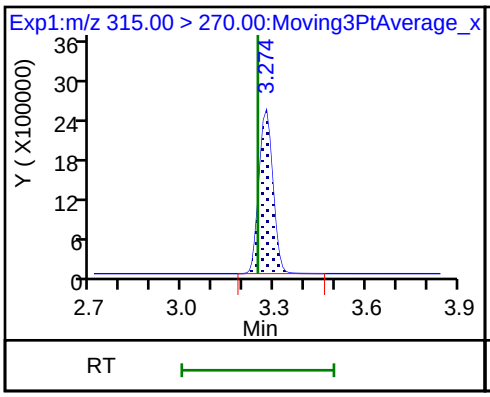
D 7 M2-4:2 FTS



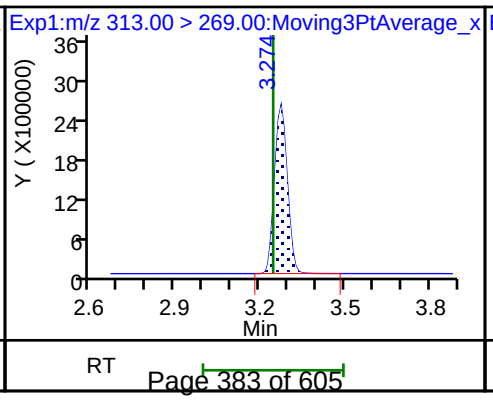
8 1H,1H,2H,2H-perfluorohexanesulfo



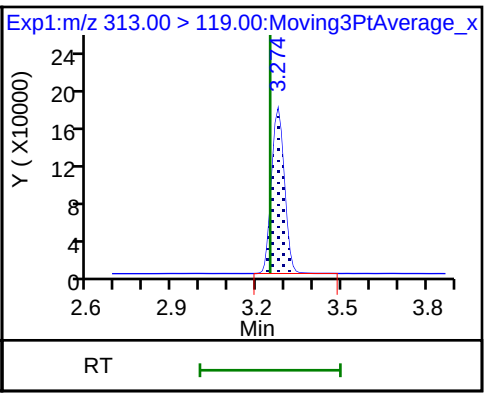
D 11 13C2 PFHxA



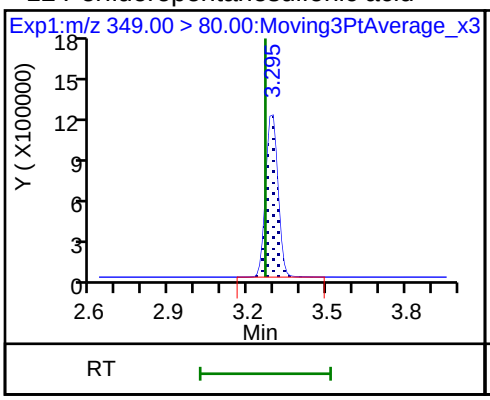
10 Perfluorohexanoic acid



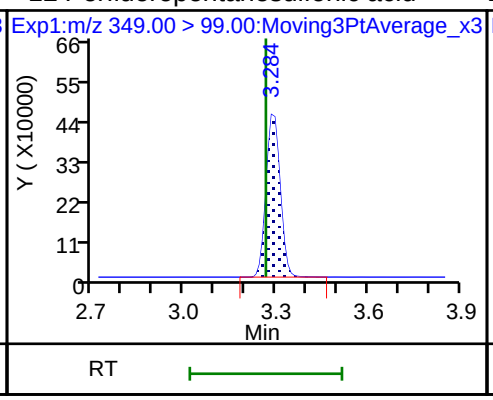
10 Perfluorohexanoic acid



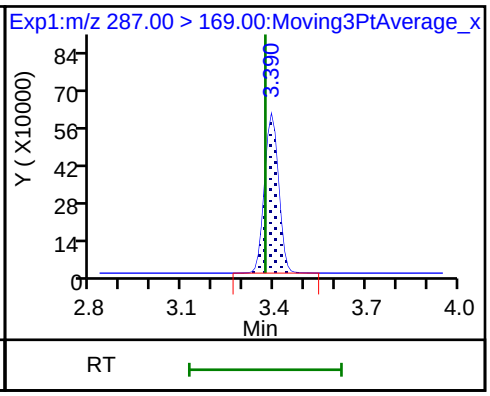
12 Perfluoropentanesulfonic acid



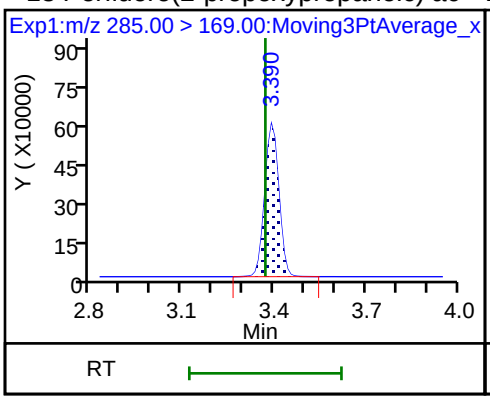
12 Perfluoropentanesulfonic acid



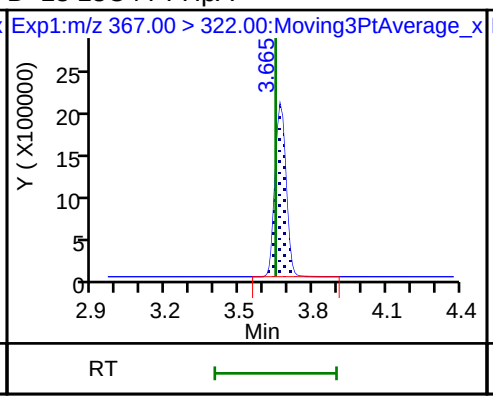
D 14 13C3 HFPO-DA



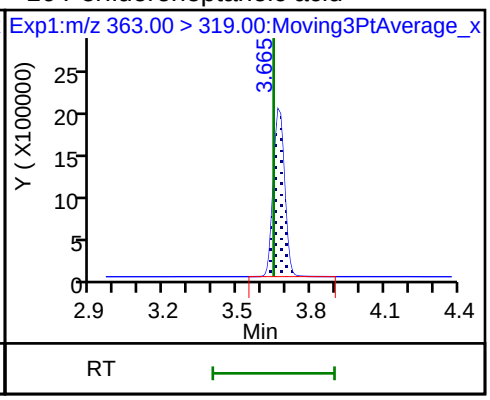
13 Perfluoro(2-propoxypropanoic) ac



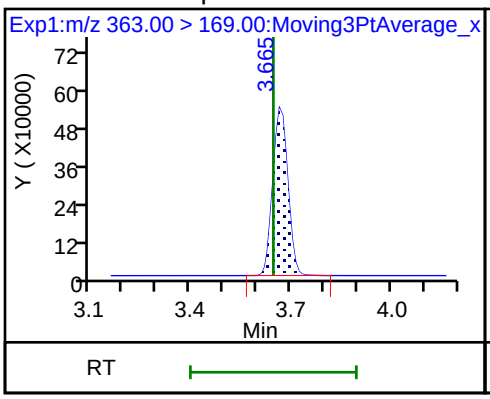
D 18 13C4 PFHpA



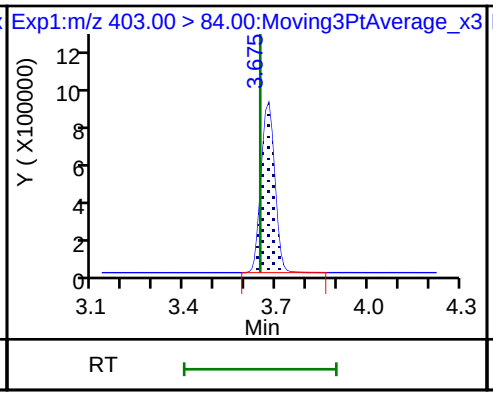
16 Perfluoroheptanoic acid



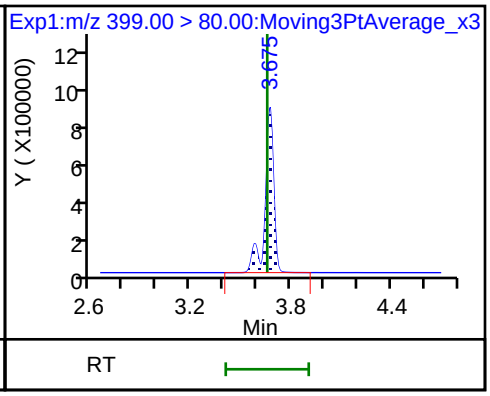
16 Perfluoroheptanoic acid



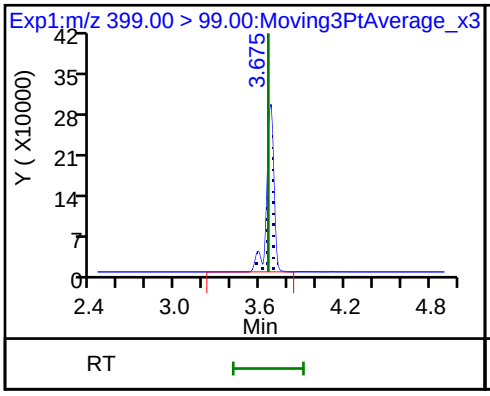
D 17 18O2 PFHxS



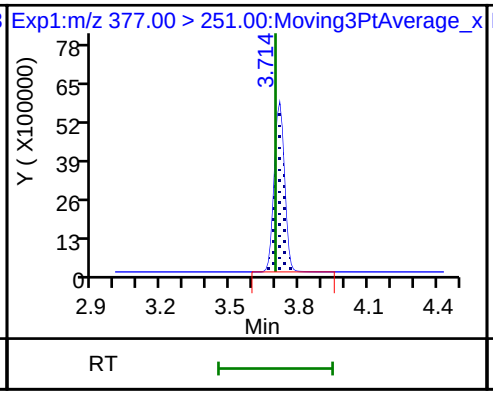
15 Perfluorohexanesulfonic acid



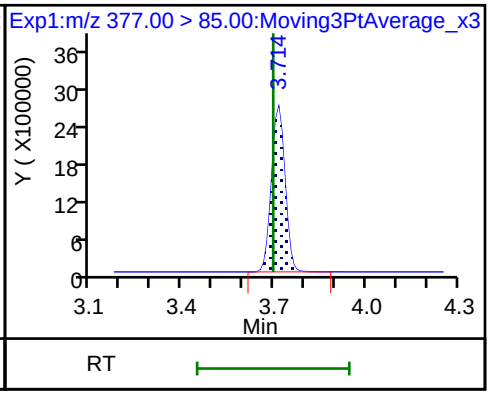
15 Perfluorohexanesulfonic acid



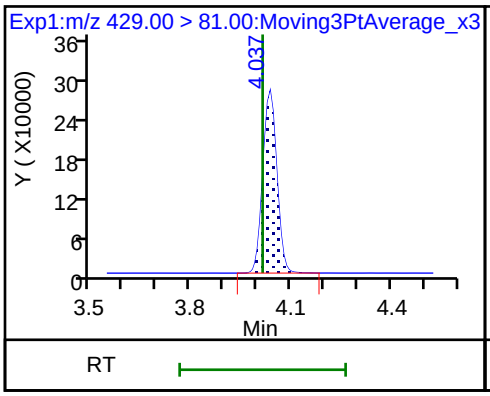
19 DONA



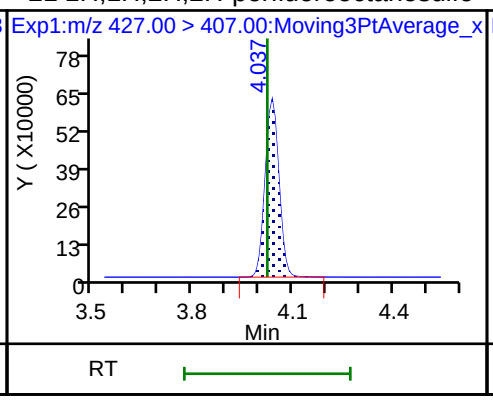
19 DONA



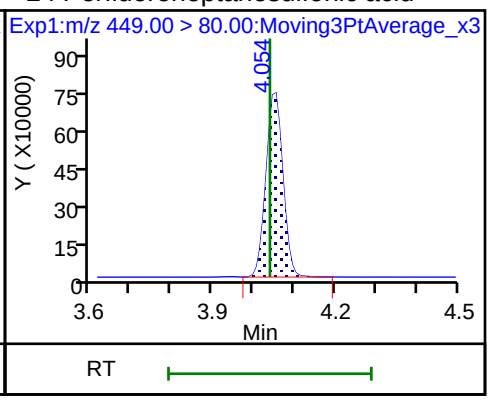
D 20 M2-6:2 FTS



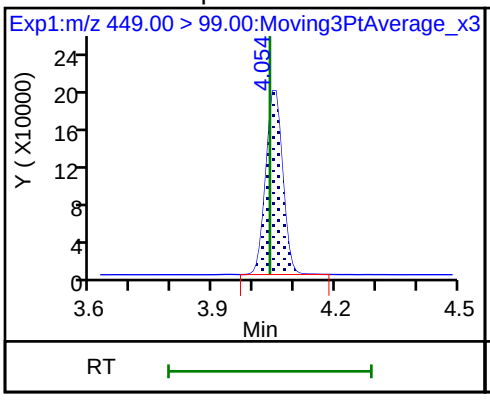
21 1H,1H,2H,2H-perfluorooctanesulfo



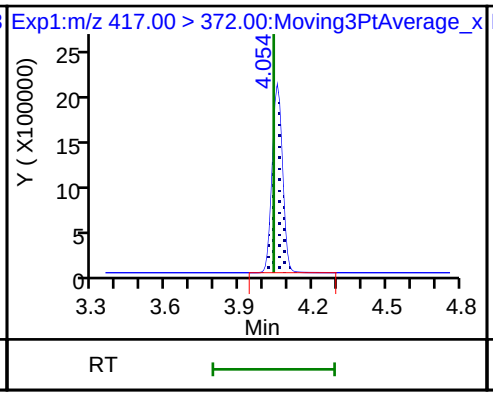
24 Perfluoroheptanesulfonic acid



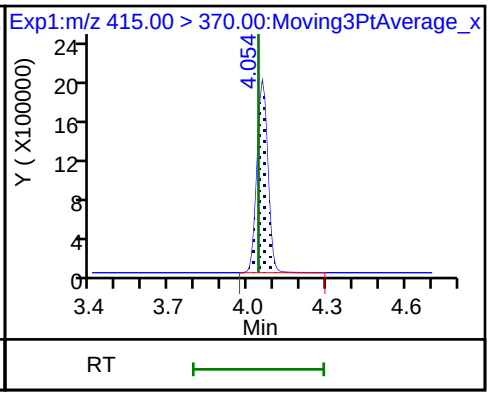
24 Perfluoroheptanesulfonic acid



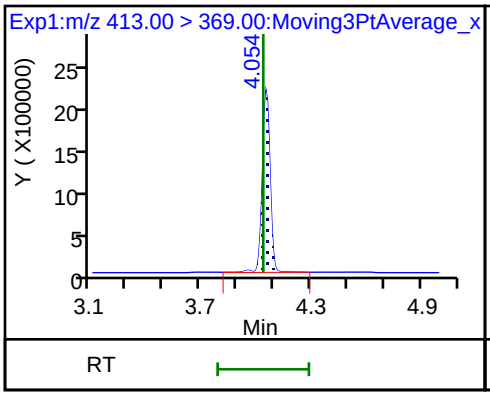
D 25 13C4 PFOA



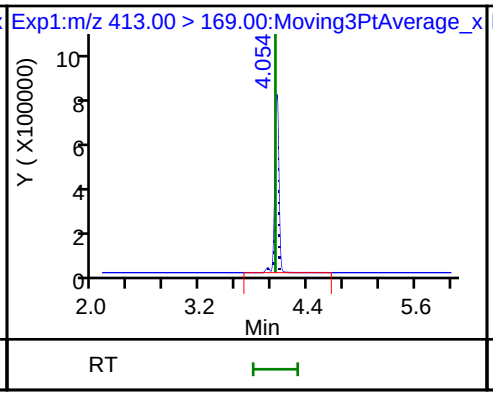
* 23 13C2 PFOA



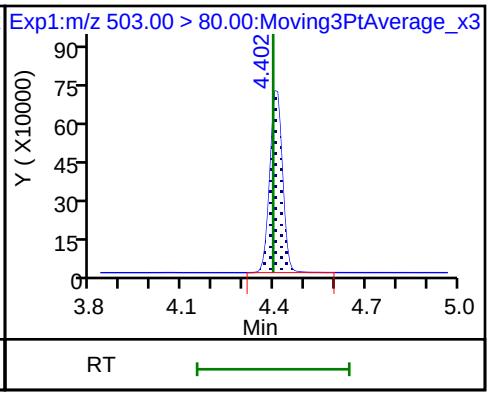
22 Perfluorooctanoic acid



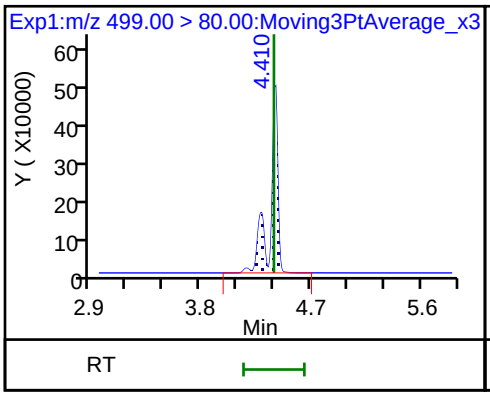
22 Perfluorooctanoic acid



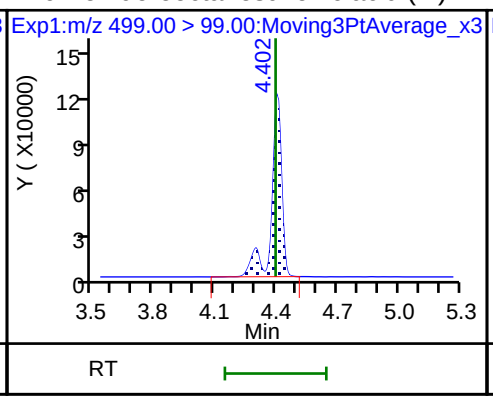
D 27 13C4 PFOS



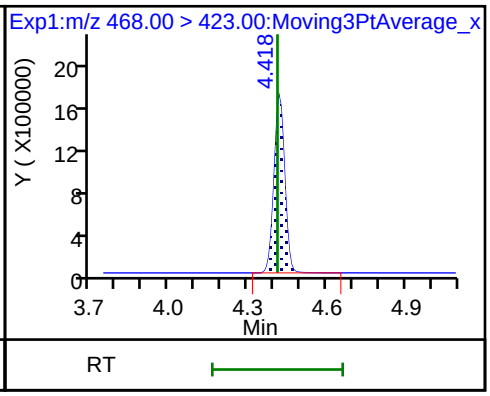
29 Perfluorooctanesulfonic acid



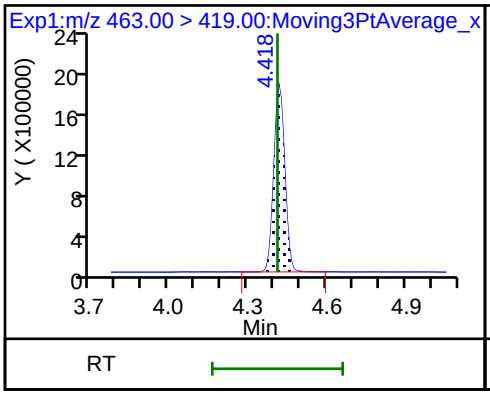
29 Perfluorooctanesulfonic acid (M)



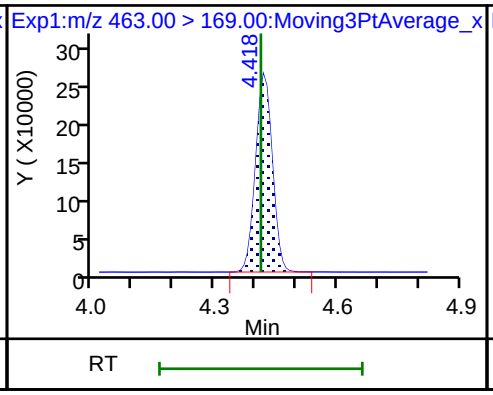
D 30 13C5 PFNA



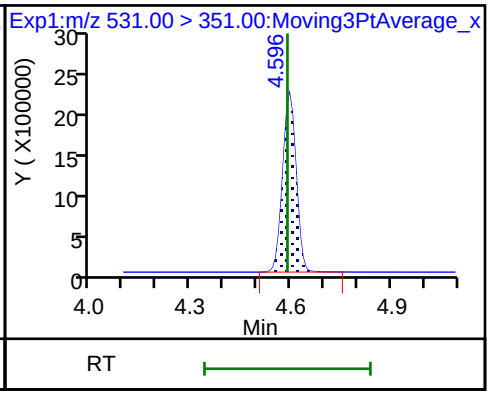
31 Perfluorononanoic acid



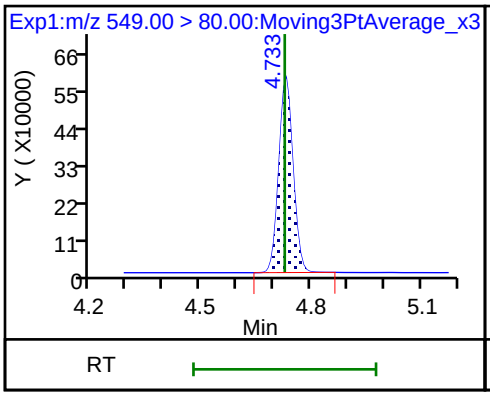
31 Perfluorononanoic acid



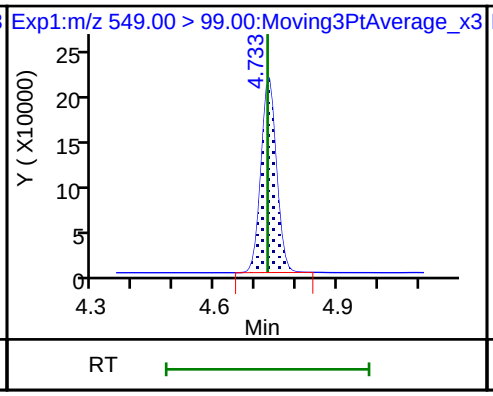
32 9-Chlorohexadecafluoro-3-oxanona



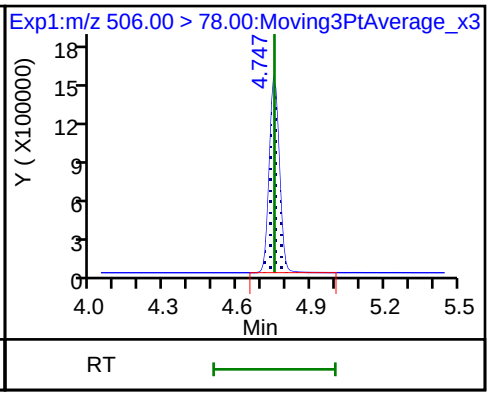
35 Perfluorononanesulfonic acid



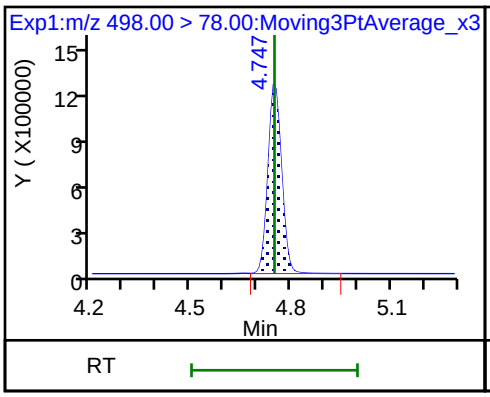
35 Perfluorononanesulfonic acid



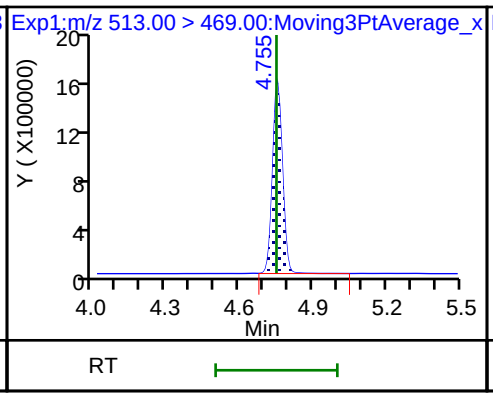
D 33 13C8 FOSA



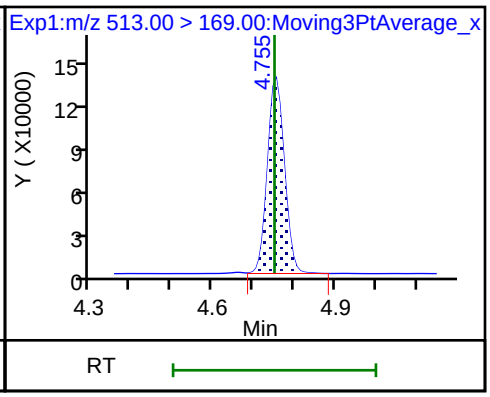
34 Perfluorooctanesulfonamide



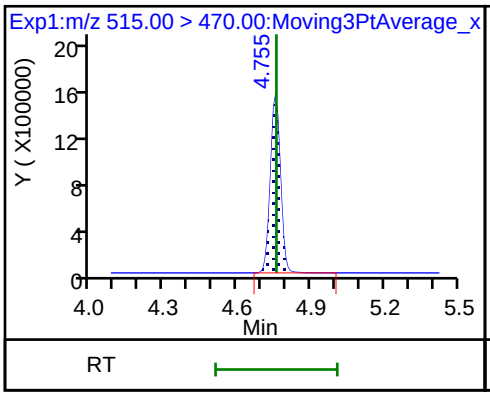
37 Perfluorodecanoic acid



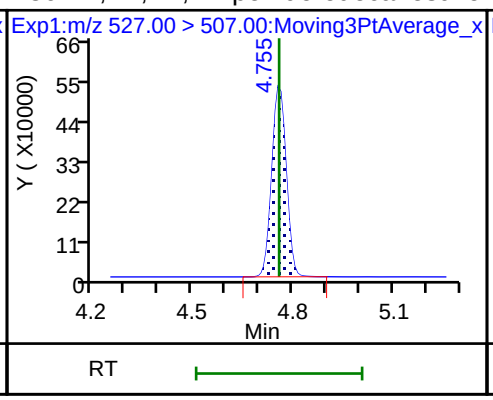
37 Perfluorodecanoic acid



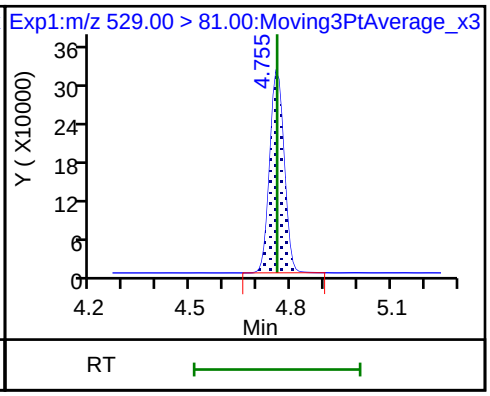
D 39 13C2 PFDA



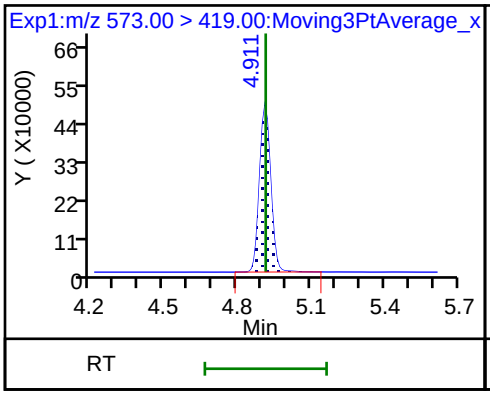
36 1H,1H,2H,2H-perfluorodecanesulfo



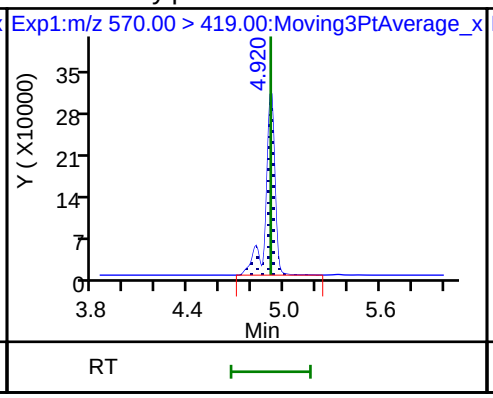
D 38 M2-8:2 FTS



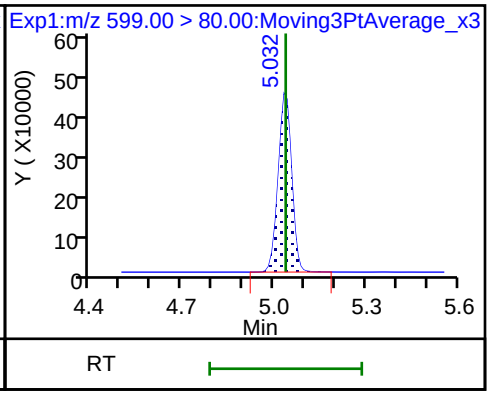
D 40 d3-NMeFOSAA



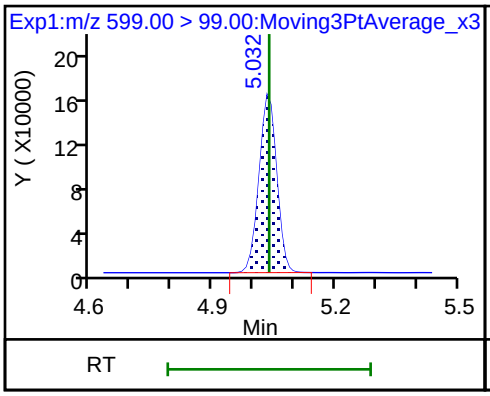
41 N-methylperfluorooctanesulfonami



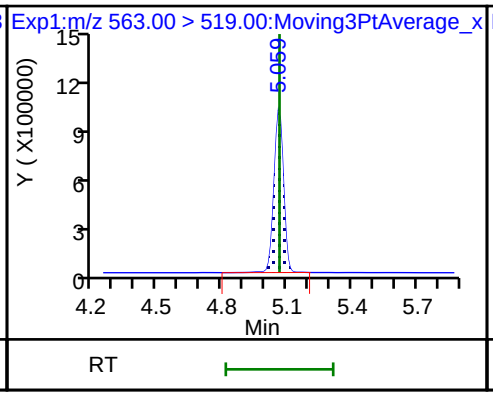
42 Perfluorodecanesulfonic acid



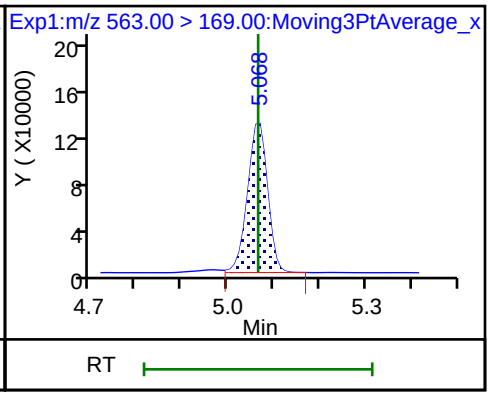
42 Perfluorodecanesulfonic acid



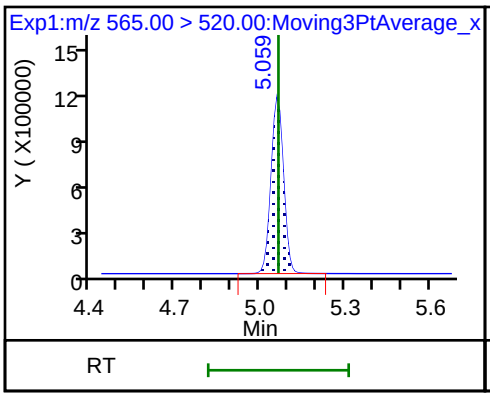
45 Perfluoroundecanoic acid



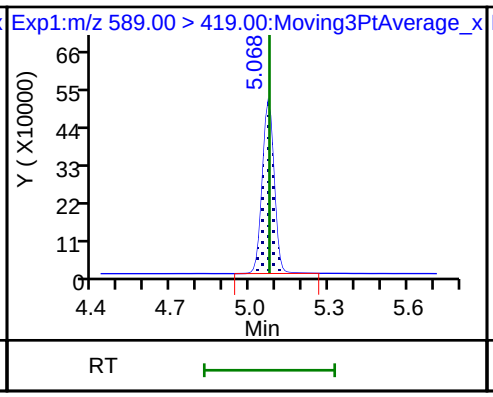
45 Perfluoroundecanoic acid



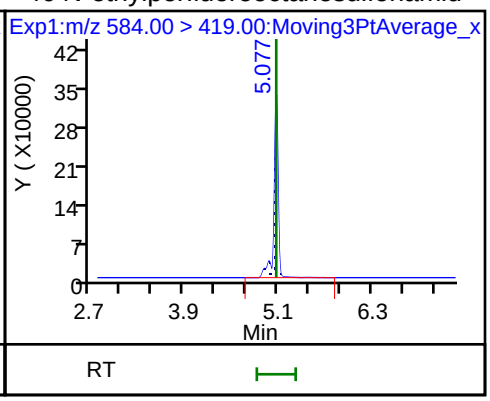
D 43 13C2 PFUnA



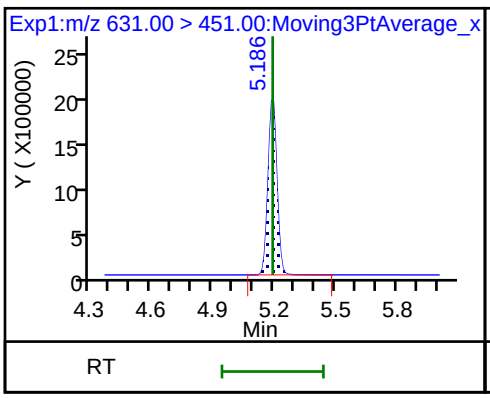
D 44 d5-NEtFOSAA



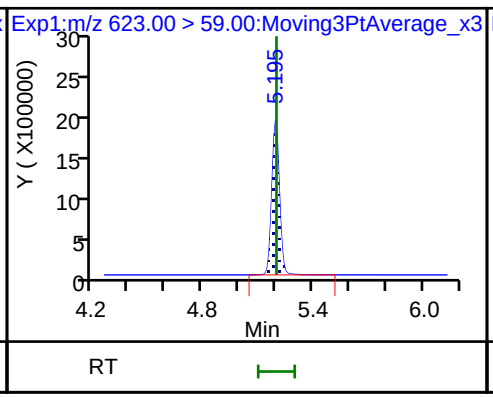
46 N-ethylperfluorooctanesulfonamid



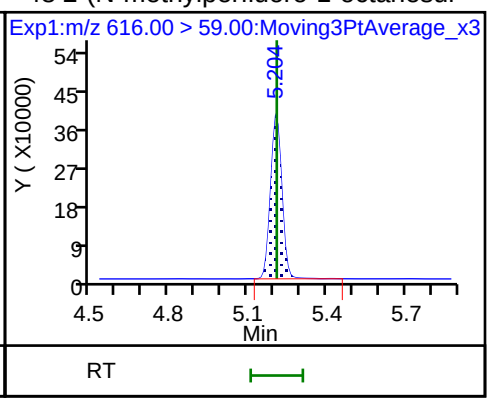
51 11-Chloroeicosafluoro-3-oxaundec



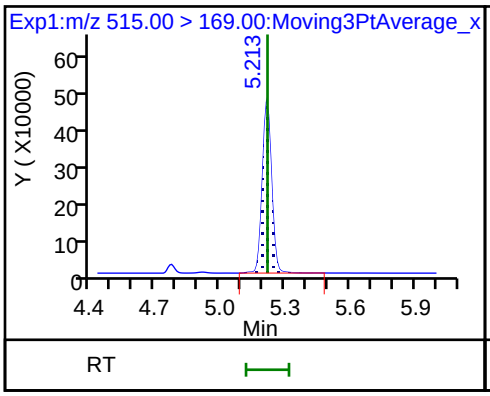
D 47 d7-N-MeFOSE-M



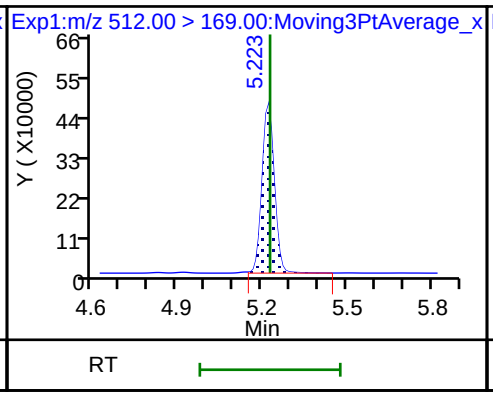
48 2-(N-methylperfluoro-1-octanesul



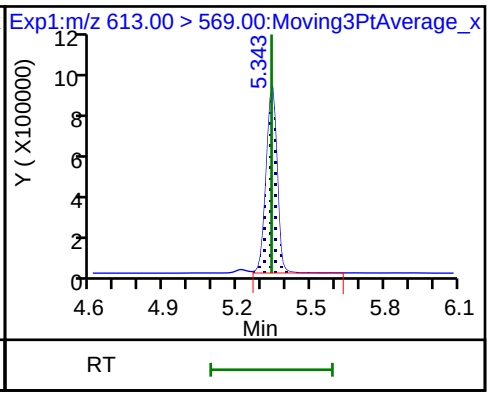
D 49 d-N-MeFOSA-M



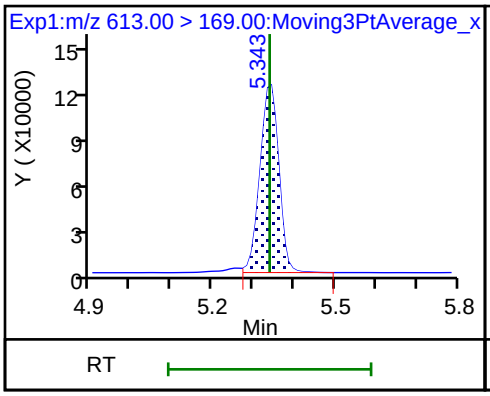
50 NMeFOSA



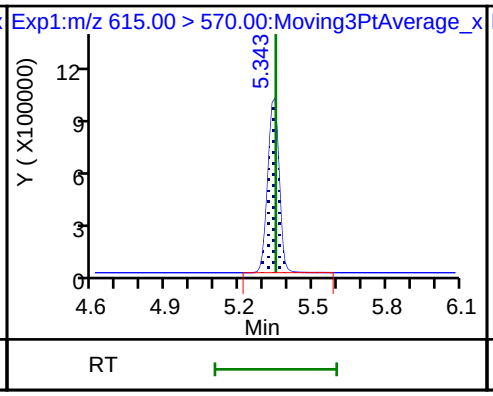
57 Perfluorododecanoic acid



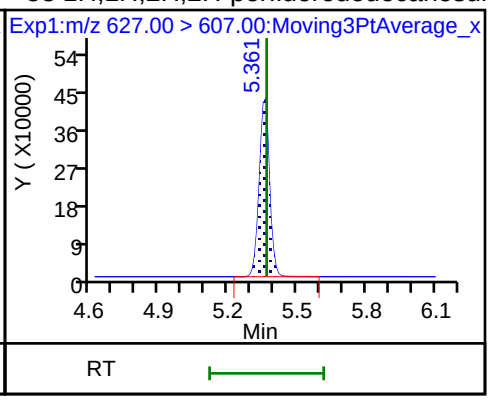
57 Perfluorododecanoic acid



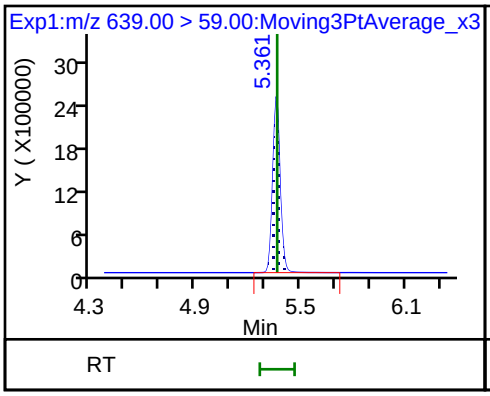
D 56 13C2 PFDoA



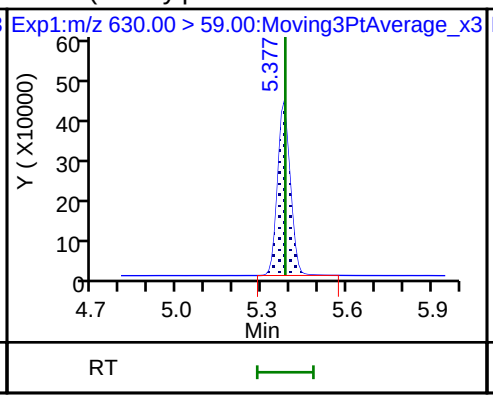
58 1H,1H,2H,2H-perfluorododecanesul



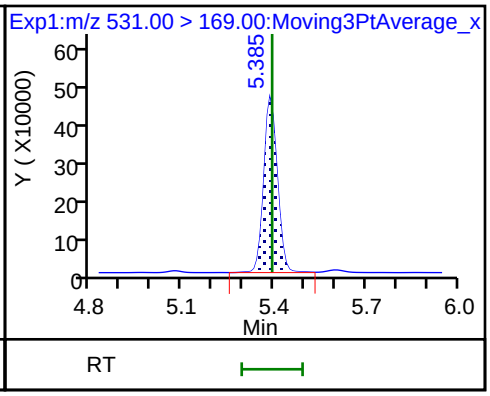
D 52 d9-N-EtFOSE-M



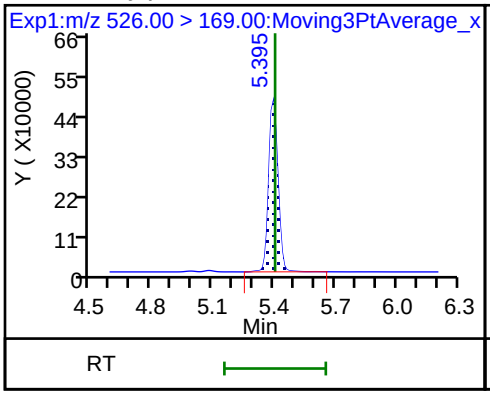
53 2-(N-ethylperfluoro-1-octanesulf



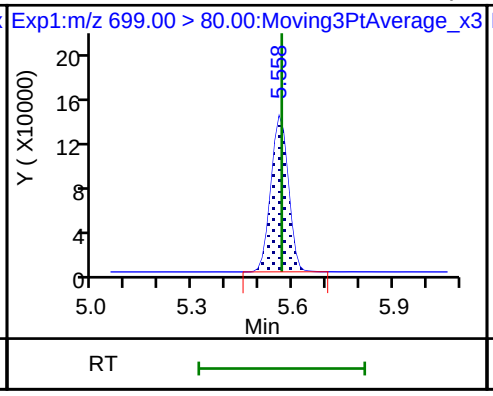
D 54 d-N-EtFOSA-M



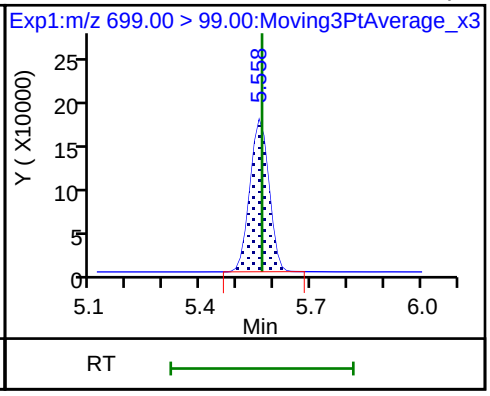
55 N-ethylperfluoro-1-octanesulfona



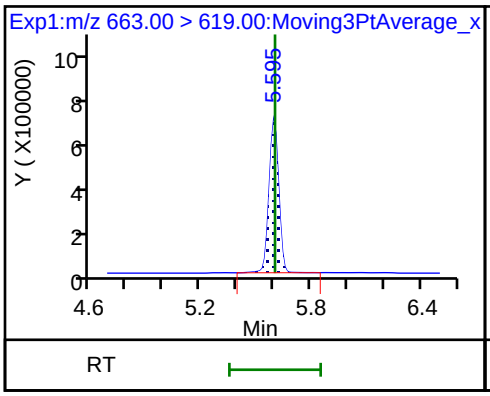
59 Perfluorododecanesulfonic acid (



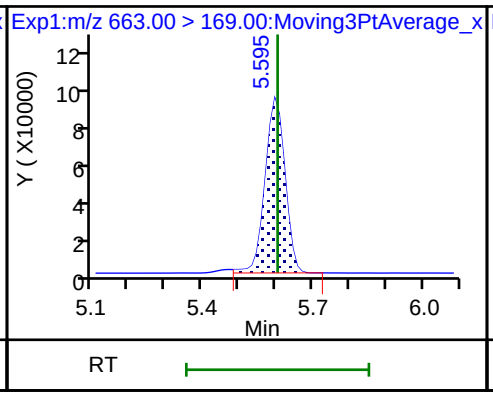
59 Perfluorododecanesulfonic acid (



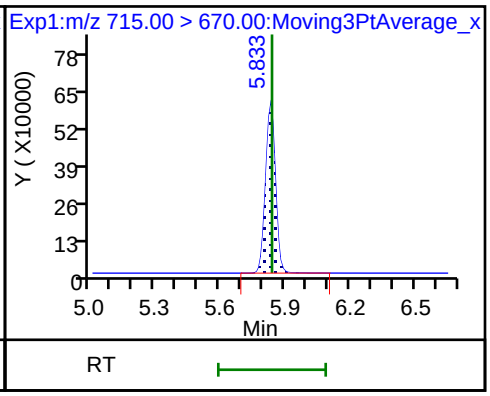
60 Perfluorotridecanoic acid



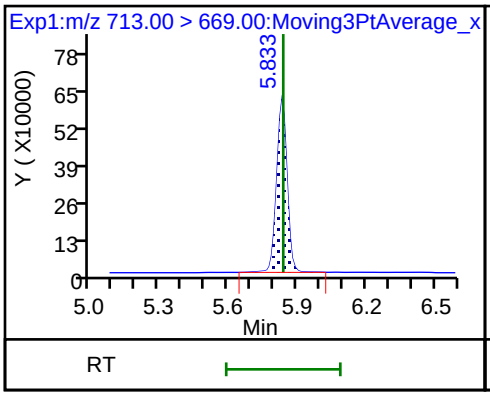
60 Perfluorotridecanoic acid



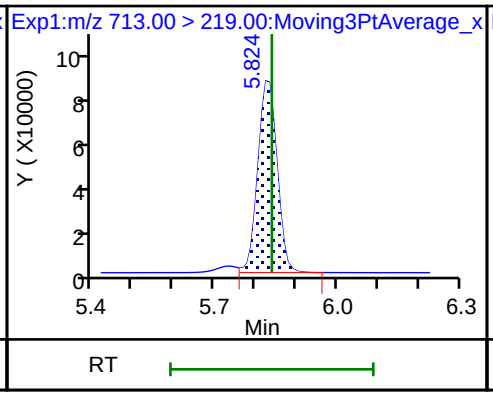
D 61 13C2 PFTeDA



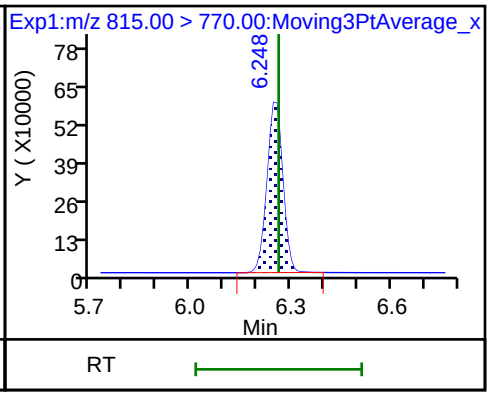
62 Perfluorotetradecanoic acid



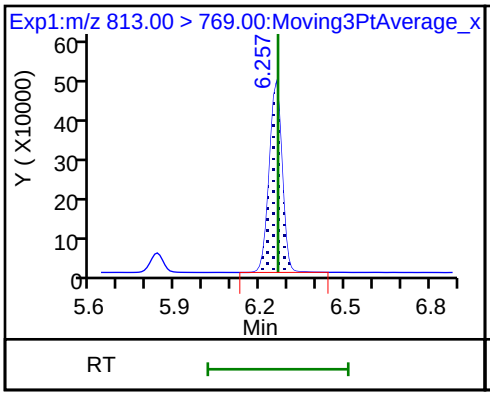
62 Perfluorotetradecanoic acid



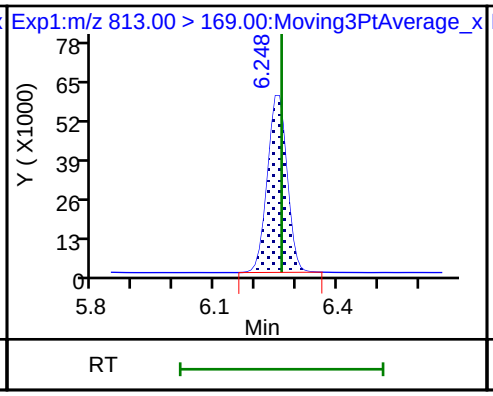
D 64 13C2 PFHxDA



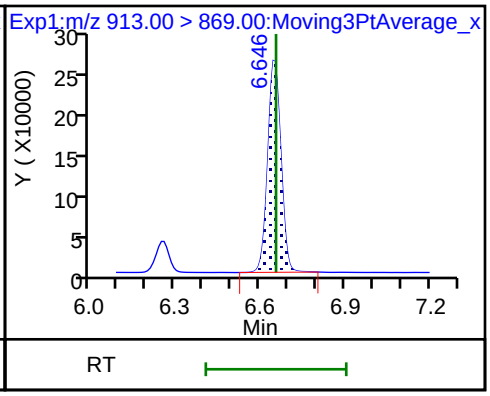
63 Perfluorohexadecanoic acid



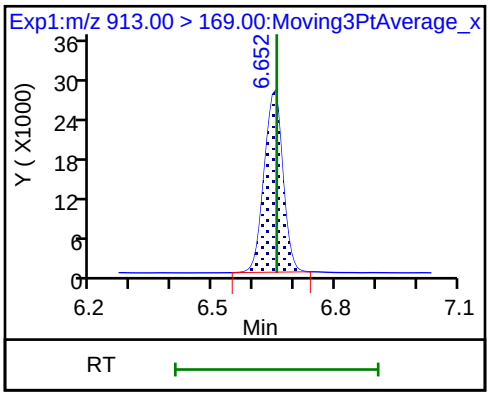
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

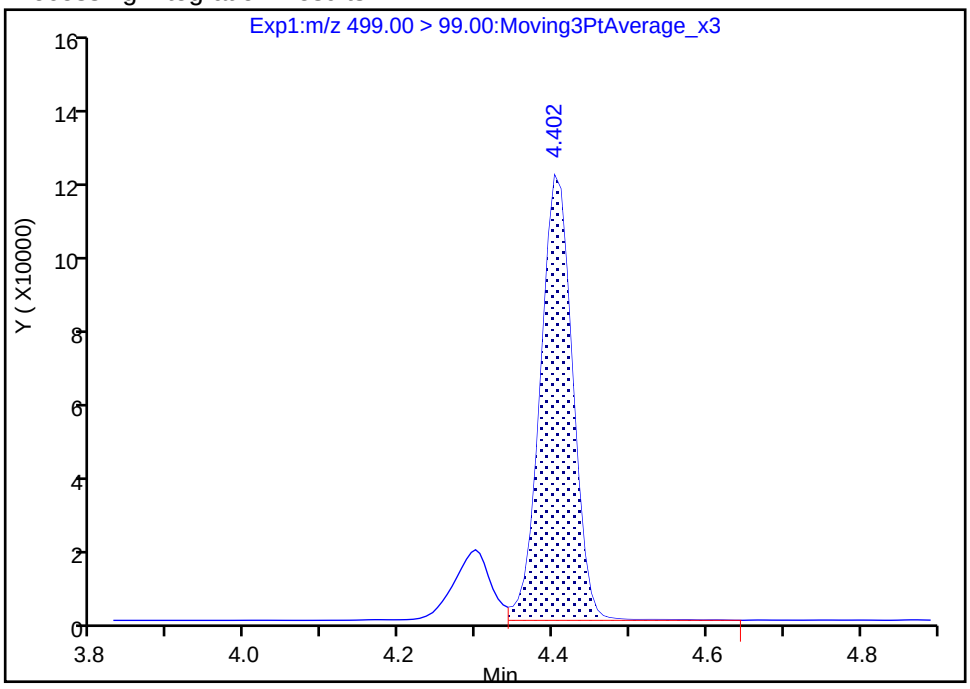
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_012.d
Injection Date: 04-Jun-2020 13:09:51 Instrument ID: A15
Lims ID: ICV
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

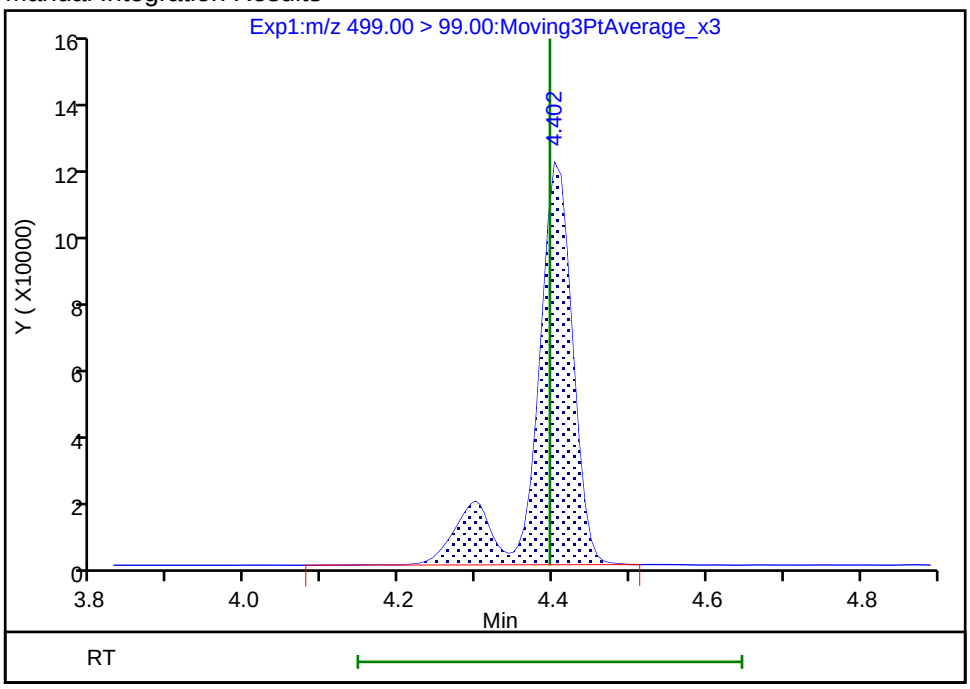
Processing Integration Results

RT: 4.40
Area: 342022
Amount: 2.466377
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 401383
Amount: 2.466377
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:50:28
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCVL 320-383791/2 Calibration Date: 06/05/2020 00:36

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_B_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.9260	0.9153		0.0494	0.0500	-1.2	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.007	1.095		0.0544	0.0500	8.7	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9749	0.9556		0.0433	0.0442	-2.0	50.0
4:2 FTS	AveID	2.255	2.610		0.541	0.467	15.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9375	0.9785		0.0522	0.0500	4.4	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7335	0.6935		0.0443	0.0469	-5.5	50.0
HFPO-DA (GenX)	AveID	0.9134	0.8670		0.0475	0.0500	-5.1	50.0
Perfluoroheptanoic acid	AveID	1.011	1.110		0.0549	0.0500	9.8	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.123	1.210		0.0490	0.0455	7.8	50.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	7.331	7.891		0.0507	0.0471	7.6	50.0
6:2 FTS	AveID	1.966	2.077		0.501	0.474	5.7	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.091	1.105		0.0482	0.0476	1.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.057	1.207		0.0571	0.0500	14.2	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9894	0.9368		0.0439	0.0464	-5.3	50.0
Perfluorononanoic acid (PFNA)	AveID	1.014	1.029		0.0507	0.0500	1.4	50.0
F-53B Major	AveID	2.729	2.731		0.0466	0.0466	0.0	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7987	0.7410		0.0445	0.0480	-7.2	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9658	0.9266		0.0480	0.0500	-4.1	50.0
8:2 FTS	AveID	1.631	1.782		0.523	0.479	9.2	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.8783	0.8780		0.0500	0.0500	-0.0	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7297	0.7028		0.482	0.500	-3.7	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7009	0.6885		0.0473	0.0482	-1.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7214	0.7195		0.0499	0.0500	-0.3	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.7067	0.6947		0.492	0.500	-1.7	50.0
F-53B Minor	AveID	2.579	2.471		0.0451	0.0471	-4.2	50.0
NMeFOSE	AveID	1.047	1.108		0.0529	0.0500	5.8	50.0
NMeFOSA	AveID	0.9416	0.9716			0.0500	3.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9816	0.8711		0.0444	0.0500	-11.3	50.0
10:2 FTS	AveID	1.287	1.207		0.0452	0.0482	-6.2	50.0
NEtFOSE	AveID	1.024	0.9337		0.0456	0.0500	-8.8	50.0
NEtFOSA	AveID	1.002	0.9648			0.0500	-3.7	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2435	0.2606		0.0518	0.0484	7.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCVL 320-383791/2 Calibration Date: 06/05/2020 00:36

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_B_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7891	0.6722		0.0426	0.0500	-14.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.000	1.132		0.0566	0.0500	13.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.406		0.0593	0.0500	18.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4920	0.4757		0.0483	0.0500	-3.3	50.0
13C4 PFBA	Ave	1.583	1.395		2.20	2.50	-11.9	50.0
13C5 PFPeA	Ave	1.414	1.241		2.19	2.50	-12.2	50.0
13C3 PFBS	Ave	0.9803	0.8534		2.02	2.33	-12.9	50.0
M2-4:2 FTS	Ave	0.1305	0.1156		2.07	2.34	-11.4	50.0
13C2 PFHxA	Ave	1.374	1.256		2.29	2.50	-8.6	50.0
13C3 HFPO-DA	Ave	0.3145	0.2850		2.27	2.50	-9.4	50.0
13C4 PFHpA	Ave	1.090	0.9864		2.26	2.50	-9.5	50.0
18O2 PFHxS	Ave	0.4715	0.4063		2.04	2.37	-13.8	50.0
M2-6:2 FTS	Ave	0.1440	0.1355		2.23	2.38	-5.9	50.0
13C4 PFOA	Ave	0.9856	0.9097		2.31	2.50	-7.7	50.0
13C4 PFOS	Ave	0.3660	0.3071		2.01	2.39	-16.1	50.0
13C5 PFNA	Ave	0.7544	0.7034		2.33	2.50	-6.8	50.0
13C2 PFDA	Ave	0.7192	0.6550		2.28	2.50	-8.9	50.0
13C8 FOSA	Ave	0.7278	0.6381		2.19	2.50	-12.3	50.0
M2-8:2 FTS	Ave	0.1717	0.1531		2.14	2.40	-10.8	50.0
d3-NMeFOSAA	Ave	0.2685	0.2257		2.10	2.50	-15.9	50.0
13C2 PFUnA	Ave	0.6132	0.5260		2.14	2.50	-14.2	50.0
d5-NEtFOSAA	Ave	0.2733	0.2449		2.24	2.50	-10.4	50.0
d7-N-MeFOSE-M	Ave	0.1833	0.1607		11.0	12.5	-12.4	50.0
d-N-MeFOSA-M	Ave	0.2300	0.1938		2.11	2.50	-15.7	50.0
13C2 PFDoA	Ave	0.5432	0.4989		2.30	2.50	-8.2	50.0
d9-N-EtFOSE-M	Ave	0.2246	0.1939		10.8	12.5	-13.6	50.0
d-N-EtFOSA-M	Ave	0.2334	0.1810		1.94	2.50	-22.5	50.0
13C2 PFTeDA	Ave	0.3551	0.3003		2.11	2.50	-15.4	50.0
13C2 PFHxDA	Ave	0.2944	0.2171		1.84	2.50	-26.2	50.0
13C8 PFOA	Ave	0.6050	0.5006		2.03	2.45	-17.3	50.0
13C8 PFOS	Ave	0.1244	0.1042		2.00	2.39	-16.3	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 05-Jun-2020 00:36:13 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCVL (19)
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97045.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 07:59:01 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1041

First Level Reviewer: sorndeek Date: 08-Jun-2020 07:59:01
Ratio Calibration: Average of Initial Calibration

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	2.541	2.541	0.0	0.627	9471742	2.20		88.1	12737	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.541	2.541	0.0	1.000	173388	0.0494		98.8	44.4	
D 4 13C5 PFPeA										
267.90 > 223.00	2.889	2.889	0.0	0.713	8425388	2.19		87.8	10138	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.889	2.889	0.0	1.000	184575	0.0544		109	13.1	M
D 9 13C3 PFBS										
301.90 > 80.00	2.920	2.920	0.0	0.721	5388215	2.02		87.1	14598	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.920	2.920	0.0	1.000	97884	0.0433	Target=2.14	98.0	52.5	
298.90 > 99.00	2.920	2.920	0.0	1.000	48098		2.04(1.07-3.21)		37.5	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.223	3.223	0.0	0.796	732762	2.07		88.6	1642	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.223	3.223	0.0	1.000	382568	0.5405		116	4545	
D 11 13C2 PFHxA										
315.00 > 270.00	3.258	3.258	0.0	0.804	8528785	2.29		91.4	11315	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.258	3.258	0.0	1.000	166903	0.0522	Target=15.73	104	82.9	
313.00 > 119.00	3.258	3.258	0.0	1.000	9804		17.02(7.86-23.59)		28.6	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.278	3.278	0.0	1.123	75372	0.0443	Target=2.69	94.5	491	
349.00 > 99.00	3.278	3.278	0.0	1.123	28628		2.63(1.35-4.04)		239	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.384	3.384	0.0	0.835	1934976	2.27		90.6	9028	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.384	3.384	0.0	1.000	33551	0.0475		94.9	652	
D 18 13C4 PFHpA										
367.00 > 322.00	3.662	3.662	0.0	0.904	6696388	2.26		90.5	9699	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.662	3.662	0.0	1.000	148622	0.0549	Target=3.80	110	56.2	
363.00 > 169.00	3.662	3.662	0.0	1.000	36753		4.04(1.90-5.71)		176	
D 17 18O2 PFHxS										
403.00 > 84.00	3.662	3.662	0.0	0.904	2609698	2.04		86.2	9677	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.662	3.662	0.0	1.000	60758	0.0490	Target=2.99	108	376	M
399.00 > 99.00	3.672	3.662	0.010	1.003	20190		3.01(1.50-4.49)		174	M
19 DONA										
377.00 > 251.00	3.711	3.711	0.0	0.842	309969	0.0507	Target=2.14	108	1779	
377.00 > 85.00	3.701	3.711	-0.010	0.840	142812		2.17(1.07-3.21)		960	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.034	4.034	0.0	0.996	873927	2.23		94.1	5881	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.034	4.034	0.0	1.000	362198	0.5008		106	3326	
$ 26 13C8 PFOA										
421.00 > 376.00	4.050	4.050	0.0	1.000	3327269	2.03		82.7	10132	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.050	4.050	0.0	0.919	43864	0.0482	Target=3.77	101	477	
449.00 > 99.00	4.050	4.050	0.0	0.919	10925		4.02(1.89-5.66)		147	
D 25 13C4 PFOA										
417.00 > 372.00	4.050	4.050	0.0	1.000	6176051	2.31		92.3	12838	
* 23 13C2 PFOA										
415.00 > 370.00	4.050	4.050	0.0		6789088	2.50			9851	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.059	4.059	0.0	1.002	149031	0.0571	Target=2.88	114	10.9	M
413.00 > 169.00	4.050	4.059	-0.009	1.000	53026		2.81(1.44-4.31)		182	
$ 28 13C8 PFOS										
507.00 > 99.00	4.408	4.408	0.0	1.088	676312	2.00		83.7	4130	
D 27 13C4 PFOS										
503.00 > 80.00	4.408	4.408	0.0	1.088	1993202	2.01		83.9	8653	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.416	4.416	0.0	1.002	36250	0.0439	Target=4.89	94.7	395	M
499.00 > 99.00	4.416	4.416	0.0	1.002	8273		4.38(2.44-7.33)		72.5	M
D 30 13C5 PFNA										
468.00 > 423.00	4.424	4.424	0.0	1.092	4775672	2.33		93.2	8512	
31 Perfluorononanoic acid										M
463.00 > 419.00	4.424	4.424	0.0	1.000	98263	0.0507	Target=7.00	101	18.1	M
463.00 > 169.00	4.424	4.424	0.0	1.000	14102		6.97(3.50-10.51)		135	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.602	4.602	0.0	1.044	106132	0.0466		100	558	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.745	4.745	0.0	1.076	29662	0.0445	Target=2.77	92.8	73.7	
549.00 > 99.00	4.745	4.745	0.0	1.076	11835		2.51(1.38-4.15)		163	
D 33 13C8 FOSA										
506.00 > 78.00	4.762	4.762	0.0	1.176	4331963	2.19		87.7	7349	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.770	4.770	0.0	1.002	76065	0.0500		100.0	463	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.762	4.762	0.0	1.000	82416	0.0480	Target=10.36	95.9	29.7	
513.00 > 169.00	4.762	4.762	0.0	1.000	8949		9.21(5.18-15.54)		54.6	
D 39 13C2 PFDA										
515.00 > 470.00	4.762	4.762	0.0	1.176	4447101	2.28		91.1	9303	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.770	4.770	0.0	1.000	354836	0.5232		109	3546	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.770	4.770	0.0	1.178	995514	2.14		89.2	5916	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.928	4.928	0.0	1.217	1532390	2.10		84.1	2331	
41 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.928	4.928	0.0	1.000	215398	0.4816		96.3	441	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.048	5.048	0.0	1.145	27675	0.0473	Target=2.97	98.2	208	
599.00 > 99.00	5.048	5.048	0.0	1.145	10252		2.70(1.49-4.46)		121	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.075	5.075	0.0	1.000	51387	0.0499	Target=7.56	99.7	35.6	
563.00 > 169.00	5.075	5.075	0.0	1.000	6884		7.46(3.78-11.34)		56.5	
D 43 13C2 PFUnA										
565.00 > 520.00	5.075	5.075	0.0	1.253	3571135	2.14		85.8	10133	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.084	5.084	0.0	1.255	1662735	2.24		89.6	2289	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.084	5.084	0.0	1.000	231029	0.4915		98.3	1348	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.211	5.211	0.0	1.182	97080	0.0451		95.8	493	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.220	5.220	0.0	1.289	5453327	11.0		87.6	3466	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.230	5.230	0.0	1.002	24159	0.0529		106	59.0	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.239	5.239	0.0	1.294	1315719	2.11		84.3	132	
50 NMeFOSA										
512.00 > 169.00	5.239	5.239	0.0	1.000	25566	0.0516		103	110	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.358	5.358	0.0	1.000	59011	0.0444	Target=7.18	88.7	10.4	
613.00 > 169.00	5.358	5.358	0.0	1.000	9519		6.20(3.59-10.76)		103	
D 56 13C2 PFDoA										
615.00 > 570.00	5.358	5.358	0.0	1.323	3387321	2.30		91.8	9920	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.375	5.375	0.0	1.127	24188	0.0452		93.8	362	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.383	5.383	0.0	1.329	6582958	10.8		86.4	5498	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.394	5.394	0.0	1.002	24586	0.0456		91.2	65.3	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.415	5.415	0.0	1.337	1228652	1.94		77.5	586	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.415	5.415	0.0	1.000	23708	0.0481		96.3	62.9	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.580	5.580	0.0	1.266	10518	0.0518	Target=0.79	107	186	
699.00 > 99.00	5.580	5.580	0.0	1.266	11578		0.91(0.39-1.18)		195	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.617	5.617	0.0	1.048	45537	0.0426	Target=6.63	85.2	8.0	
663.00 > 169.00	5.605	5.617	-0.012	1.046	9355		4.87(3.32-9.95)		201	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.848	5.848	0.0	1.444	2038775	2.11		84.6	8383	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.848	5.848	0.0	1.000	46167	0.0566	Target=8.46	113	13.2	
713.00 > 219.00	5.839	5.848	-0.009	0.998	5000		9.23(4.23-12.69)		211	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.263	6.263	0.0	1.546	1474119	1.84		73.8	4372	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.263	6.263	0.0	1.000	41447	0.0593	Target=7.92	119	5.8	
813.00 > 169.00	6.263	6.263	0.0	1.000	5035		8.23(3.96-11.88)		103	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.656	6.656	0.0	1.063	14024	0.0483	Target=10.24	96.7	3.0	
913.00 > 169.00	6.656	6.656	0.0	1.063	1301		10.78(5.12-15.36)		39.4	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

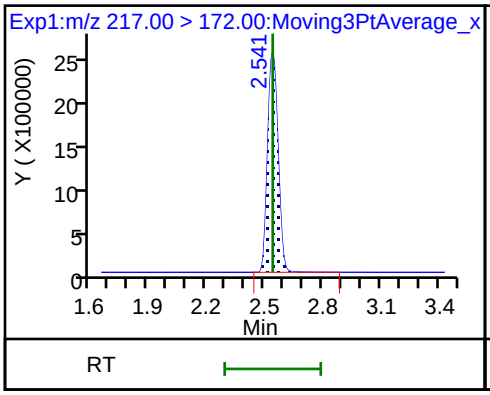
LCPFC_LLCCVL_00019 Amount Added: 1.00 Units: mL

Report Date: 08-Jun-2020 07:59:02 Chrom Revision: 2.3 03-Jun-2020 23:27:16

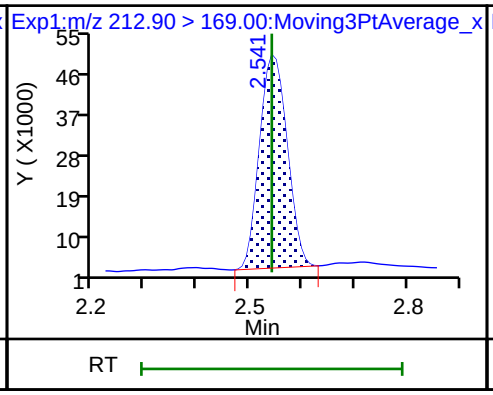
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_005.d
Injection Date: 05-Jun-2020 00:36:13 Instrument ID: A15
Lims ID: CCVL
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL

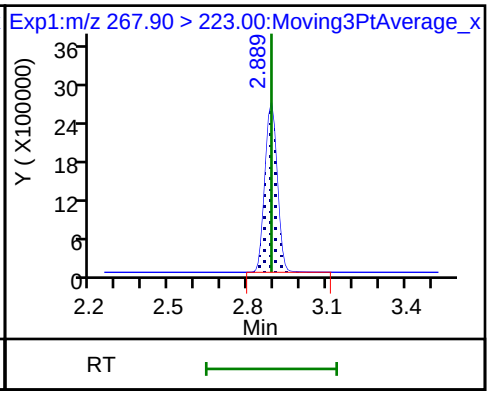
D 1 13C4 PFBA



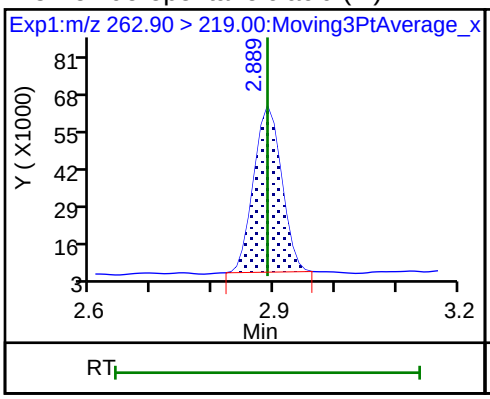
2 Perfluorobutanoic acid



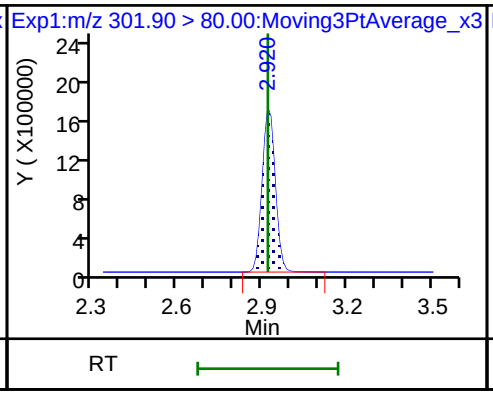
D 4 13C5 PFPeA



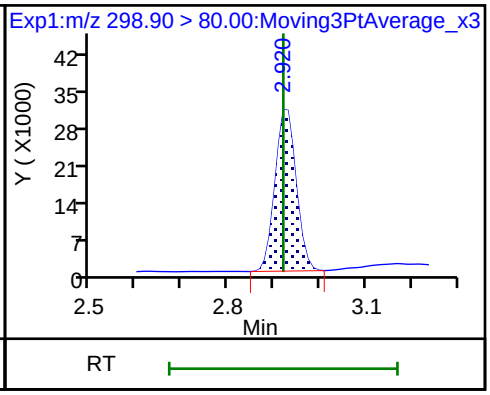
5 Perfluoropentanoic acid (M)



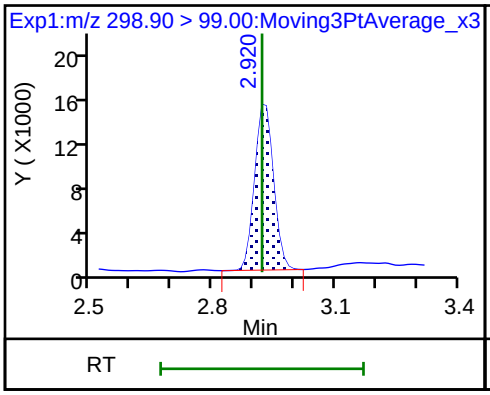
D 9 13C3 PFBS



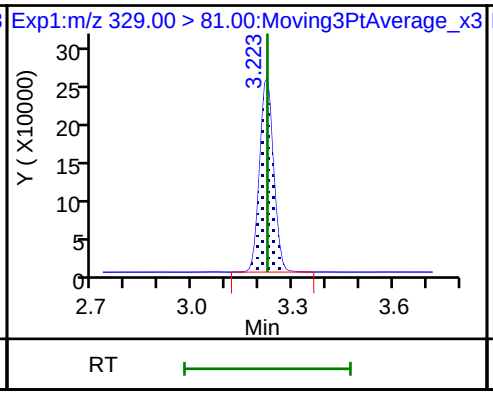
6 Perfluorobutanesulfonic acid



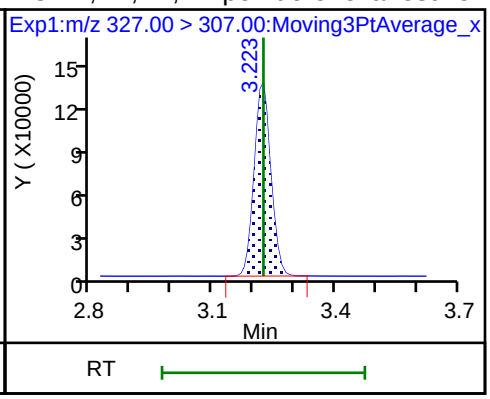
6 Perfluorobutanesulfonic acid



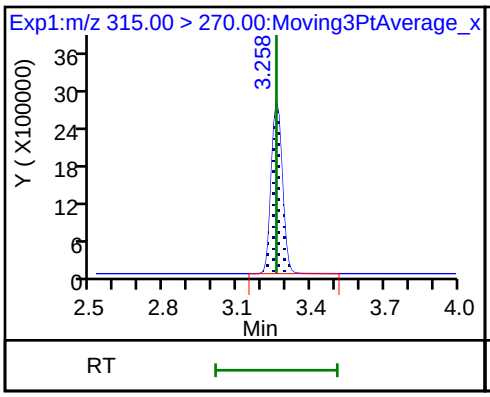
D 7 M2-4:2 FTS



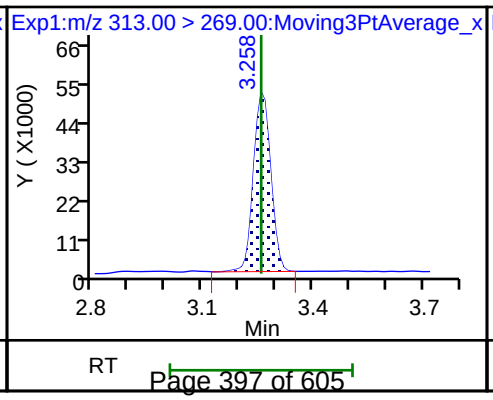
8 1H,1H,2H,2H-perfluorohexanesulfo



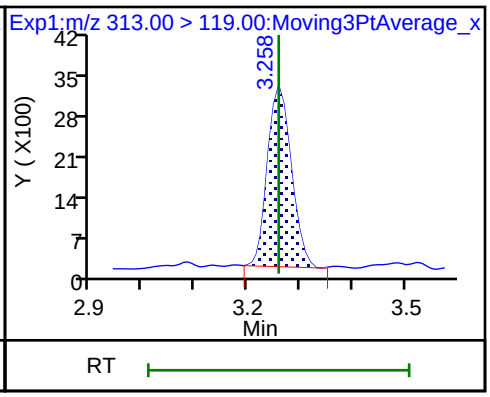
D 11 13C2 PFHxA



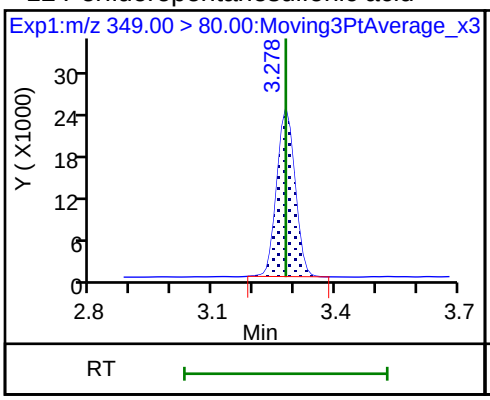
10 Perfluorohexanoic acid



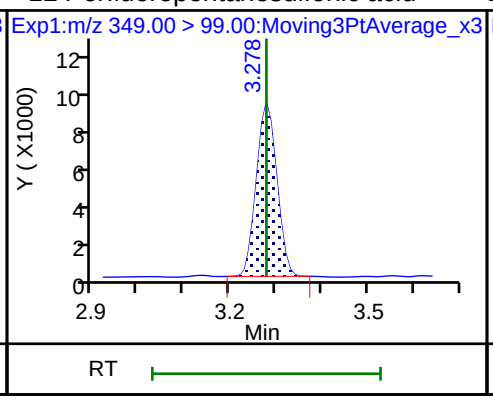
10 Perfluorohexanoic acid



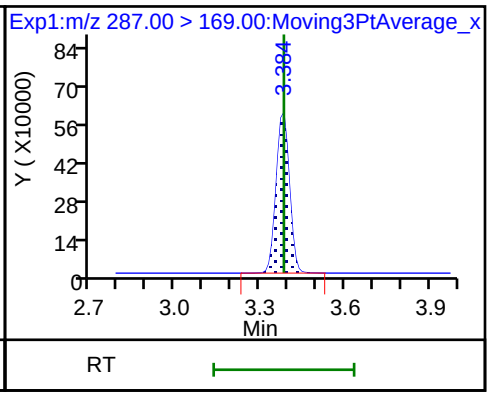
12 Perfluoropentanesulfonic acid



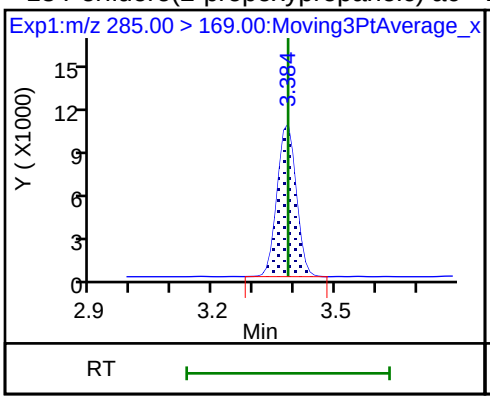
12 Perfluoropentanesulfonic acid



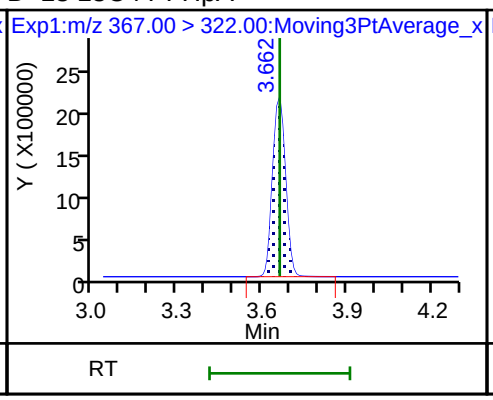
D 14 13C3 HFPO-DA



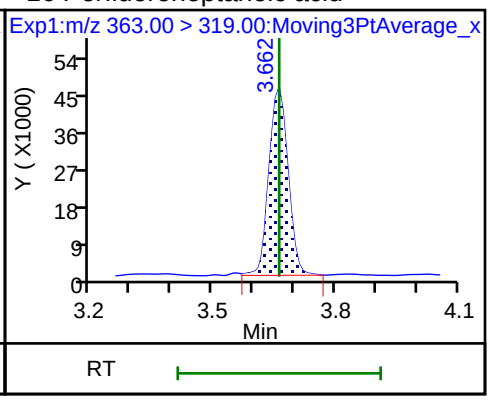
13 Perfluoro(2-propoxypropanoic) ac



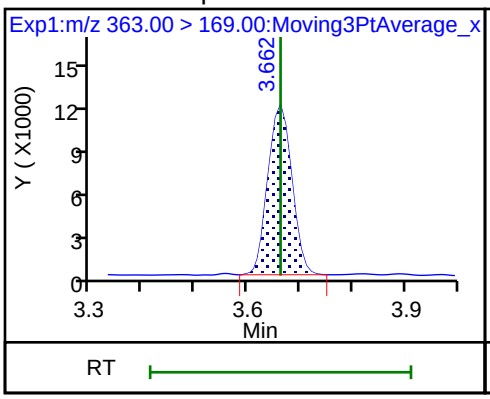
D 18 13C4 PFHpA



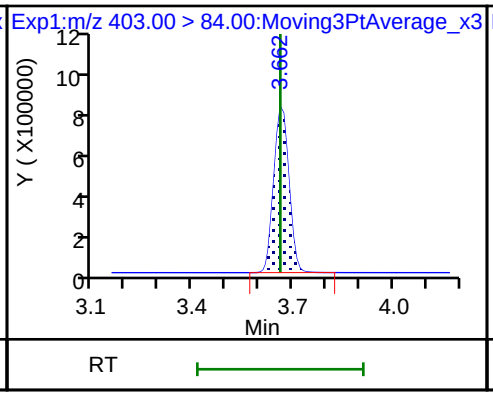
16 Perfluoroheptanoic acid



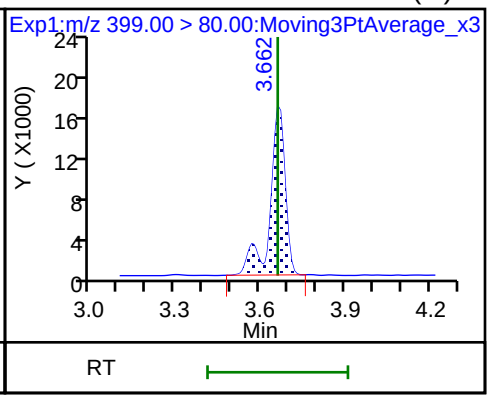
16 Perfluoroheptanoic acid



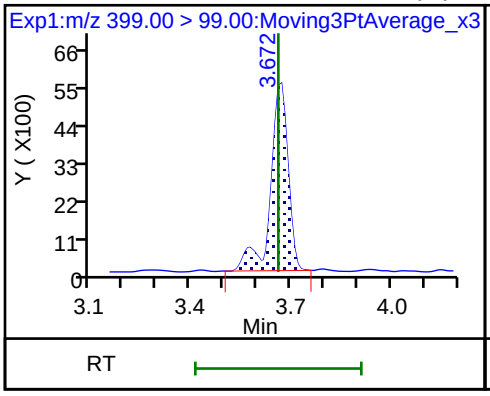
D 17 18O2 PFHxS



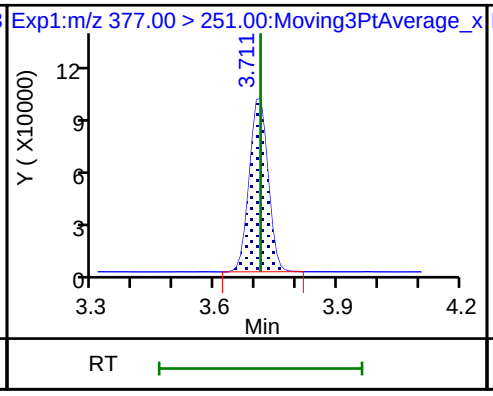
15 Perfluorohexanesulfonic acid (M)



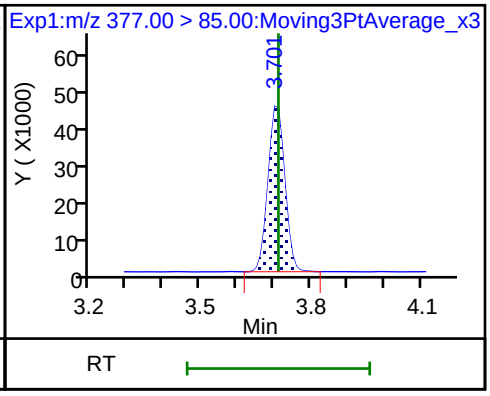
15 Perfluorohexanesulfonic acid (M)



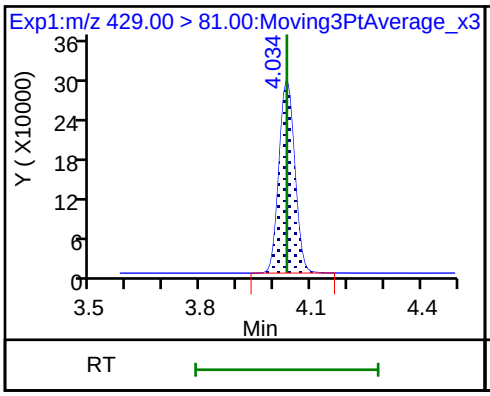
19 DONA



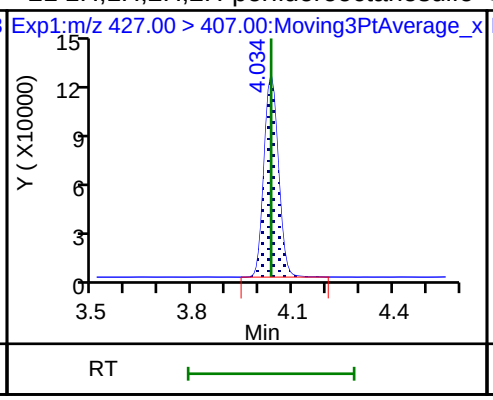
19 DONA



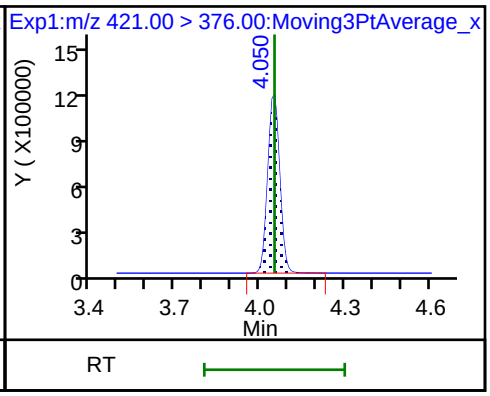
D 20 M2-6:2 FTS



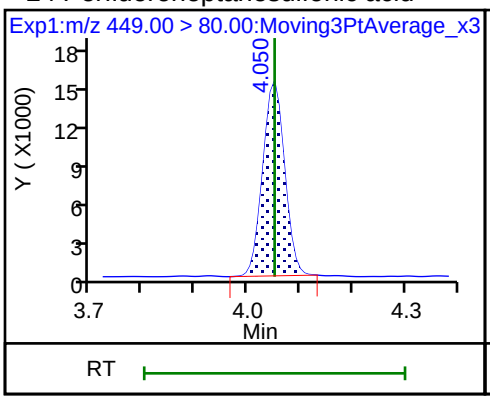
21 1H,1H,2H,2H-perfluorooctanesulfo



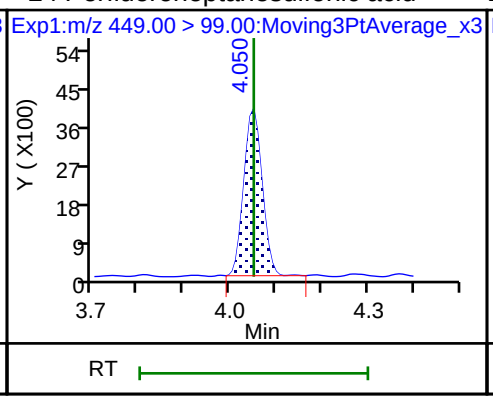
$ 26 13C8 PFOA



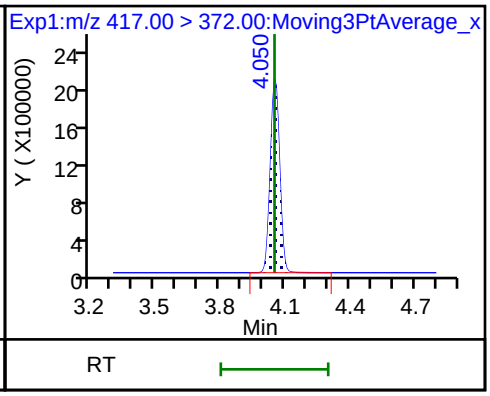
24 Perfluoroheptanesulfonic acid



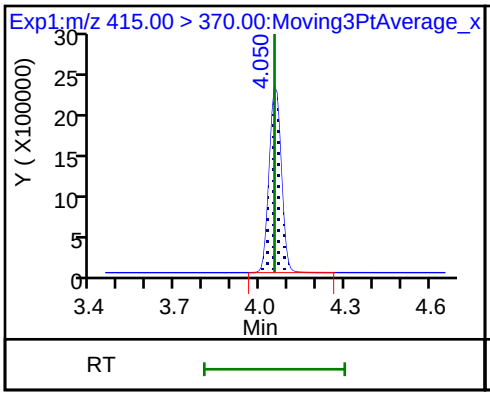
24 Perfluoroheptanesulfonic acid



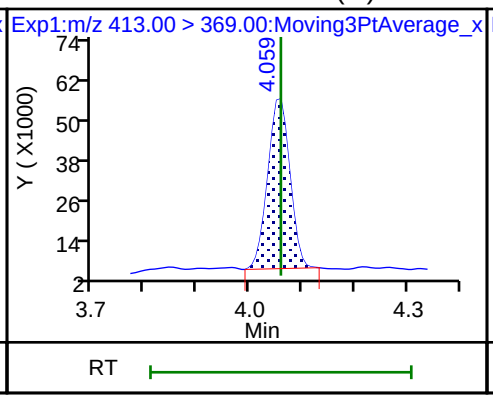
D 25 13C4 PFOA



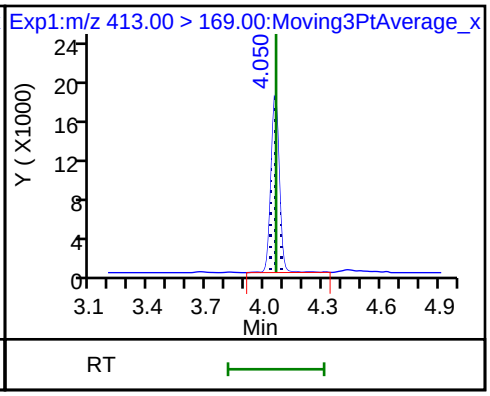
* 23 13C2 PFOA



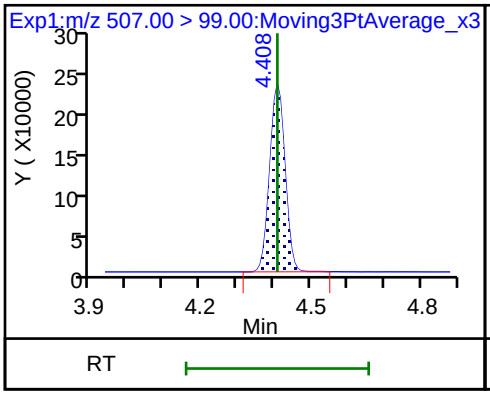
22 Perfluorooctanoic acid (M)



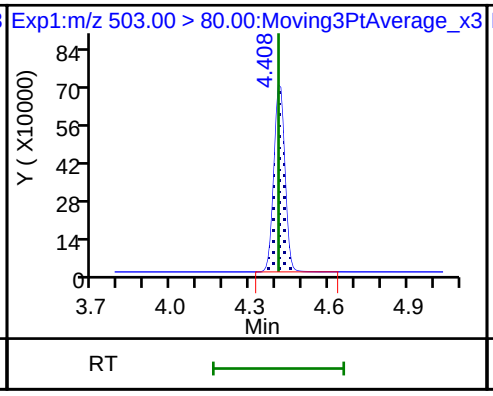
22 Perfluorooctanoic acid



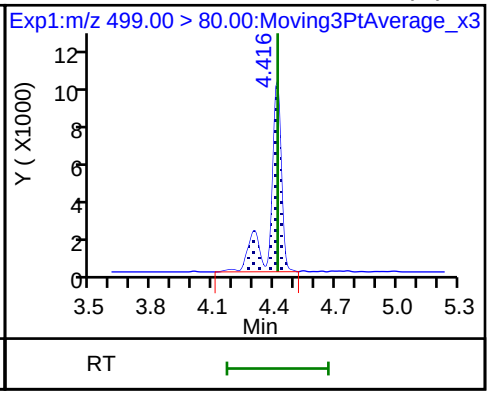
$ 28 13C8 PFOS



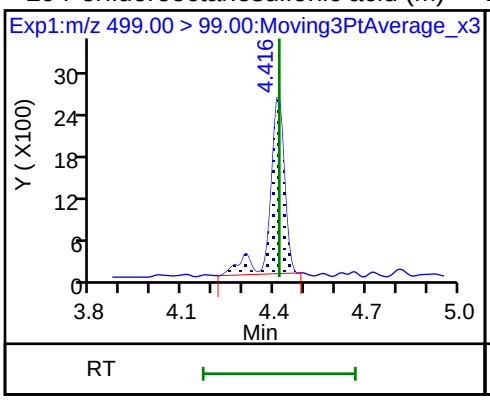
D 27 13C4 PFOS



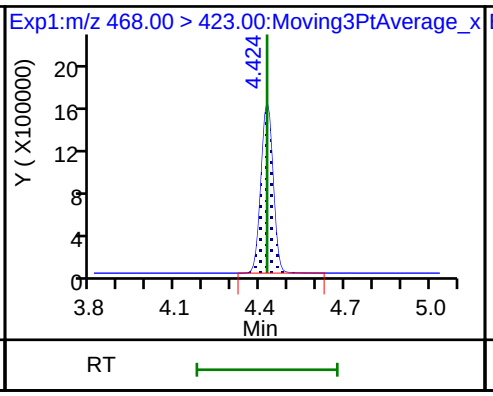
29 Perfluorooctanesulfonic acid (M)



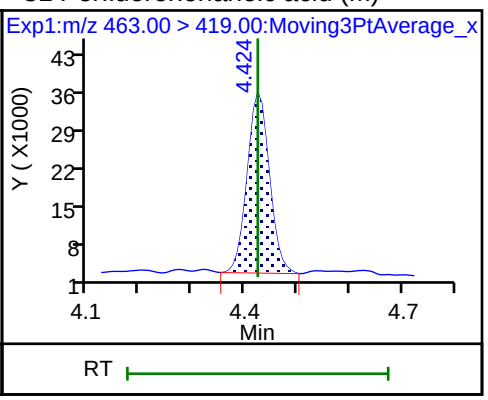
29 Perfluorooctanesulfonic acid (M)



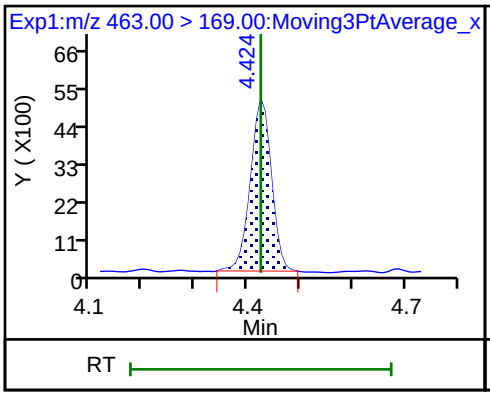
D 30 13C5 PFNA



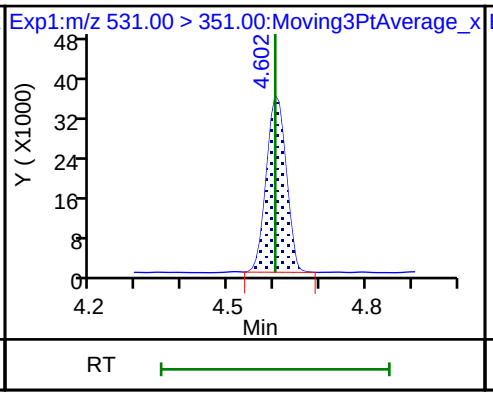
31 Perfluorononanoic acid (M)



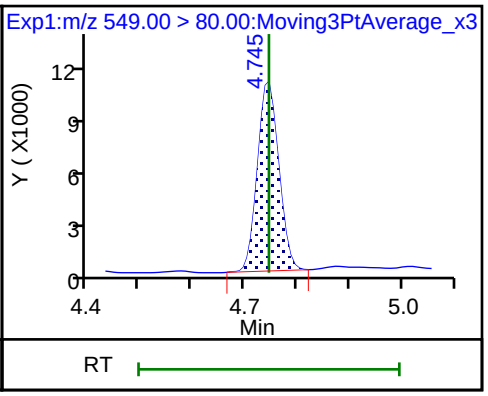
31 Perfluorononanoic acid



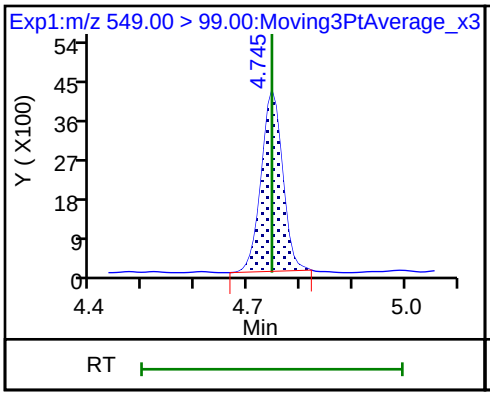
32 9-Chlorohexadecafluoro-3-oxanona



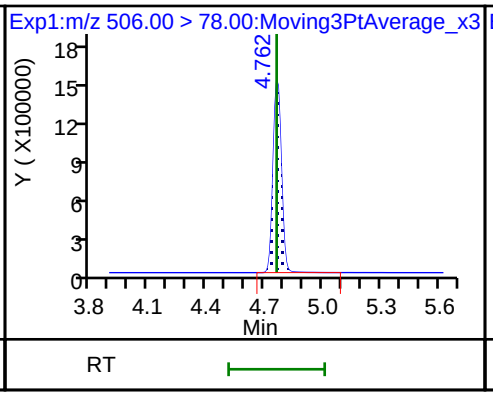
35 Perfluorononanesulfonic acid



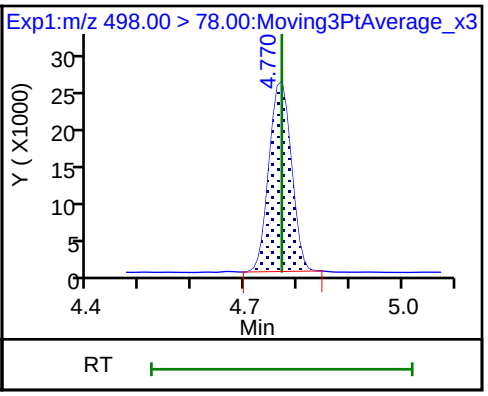
35 Perfluorononanesulfonic acid



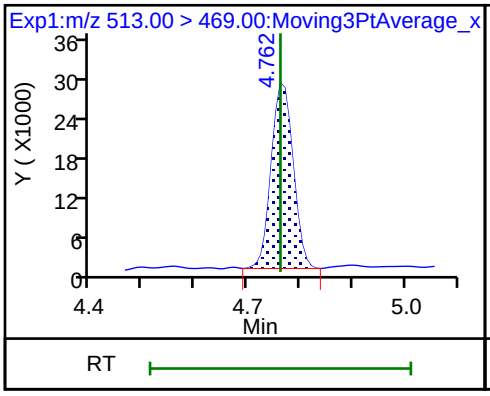
D 33 13C8 FOSA



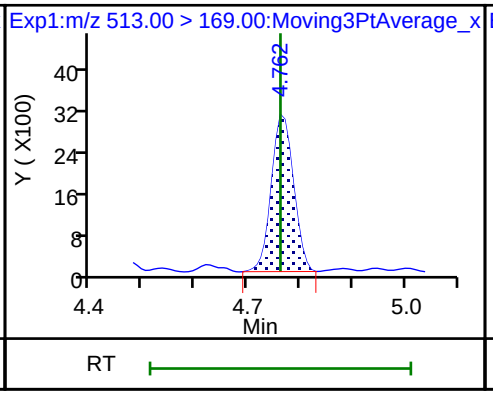
34 Perfluorooctanesulfonamide



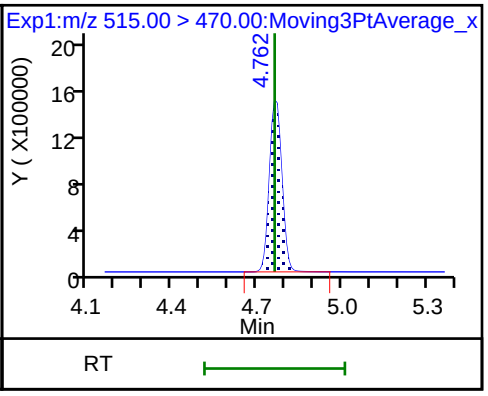
37 Perfluorodecanoic acid



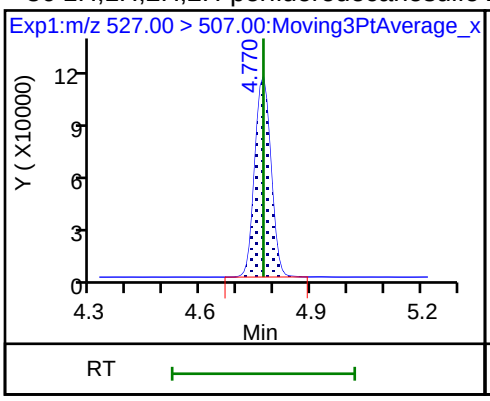
37 Perfluorodecanoic acid



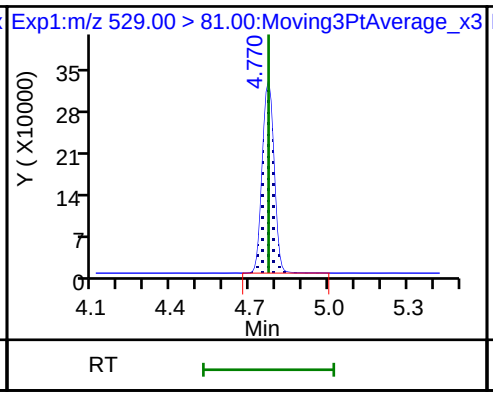
D 39 13C2 PFDA



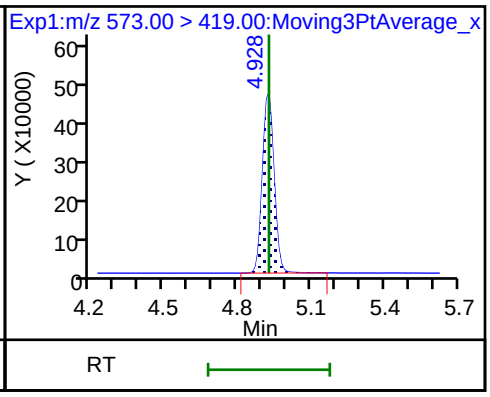
36 1H,1H,2H,2H-perfluorodecanesulfo



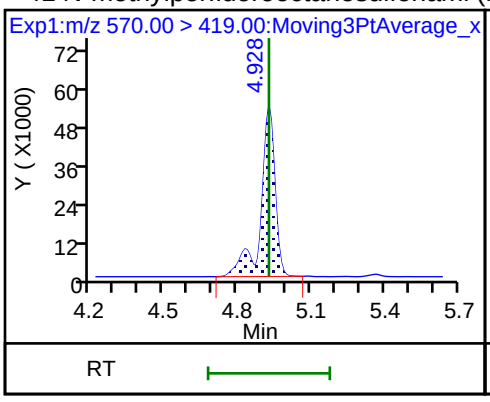
D 38 M2-8:2 FTS



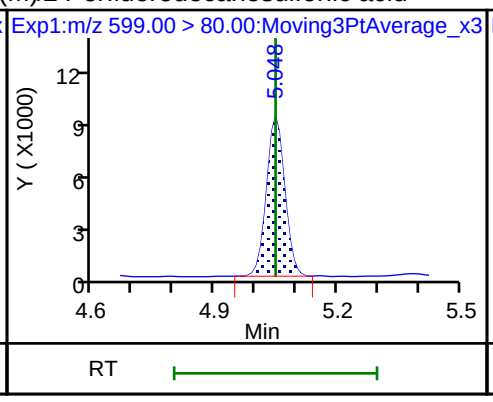
D 40 d3-NMeFOSAA



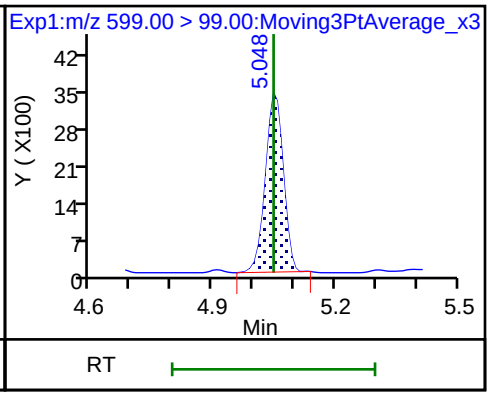
41 N-methylperfluorooctanesulfonami (M)



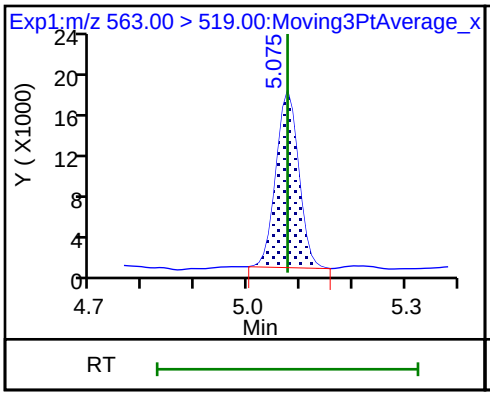
42 Perfluorodecanesulfonic acid



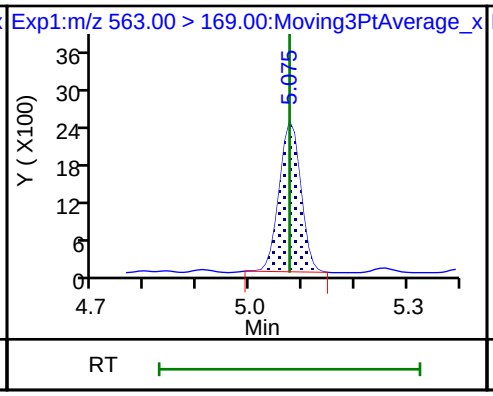
42 Perfluorodecanesulfonic acid



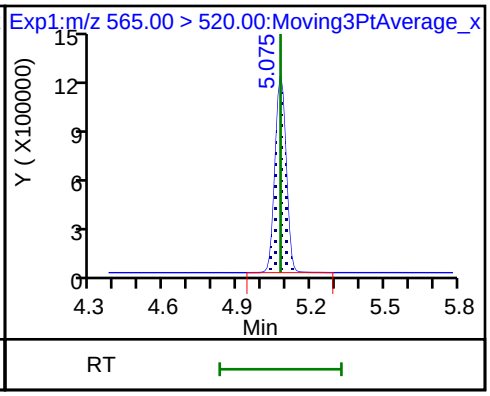
45 Perfluoroundecanoic acid



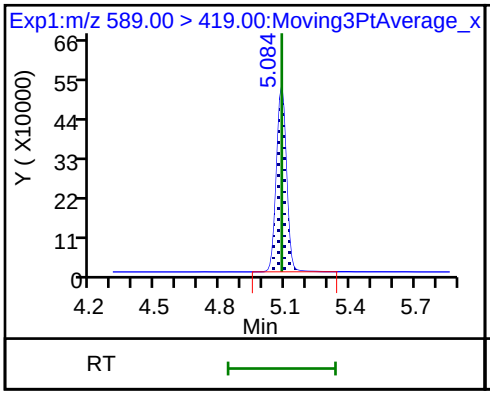
45 Perfluoroundecanoic acid



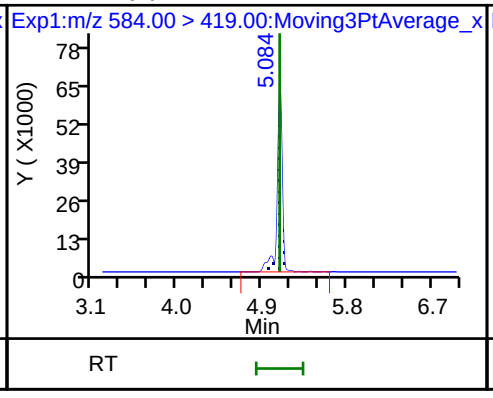
D 43 13C2 PFUnA



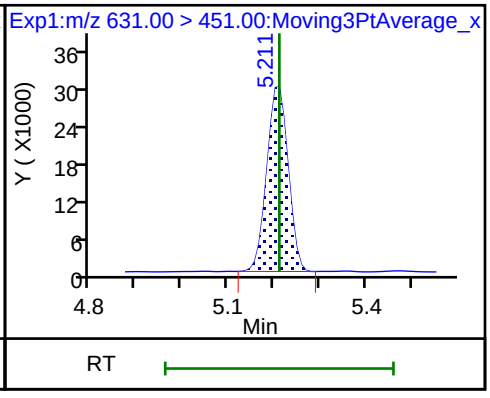
D 44 d5-NEtFOSAA



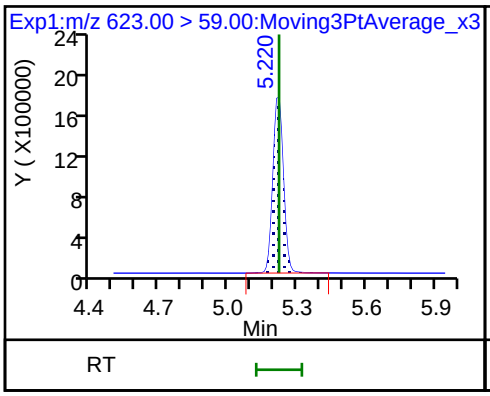
46 N-ethylperfluorooctanesulfonamid



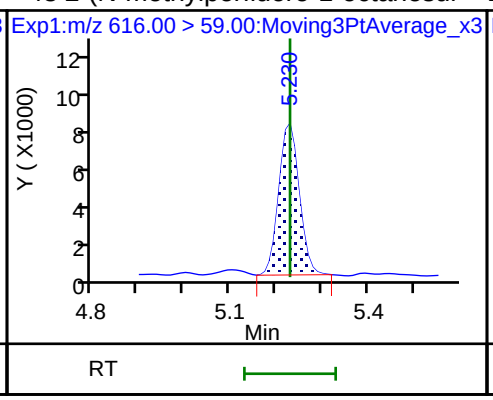
51 11-Chloroeicosafluoro-3-oxaundec



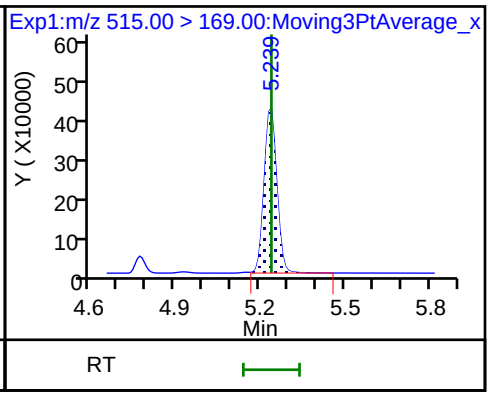
D 47 d7-N-MeFOSE-M



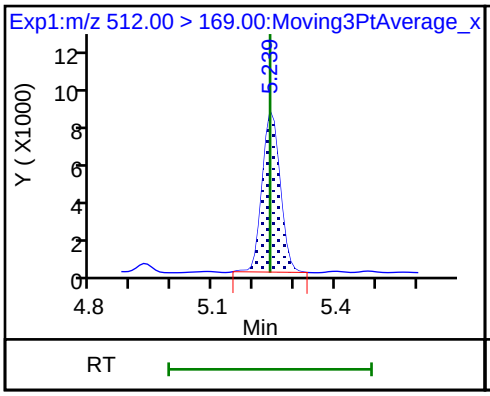
48 2-(N-methylperfluoro-1-octanesul



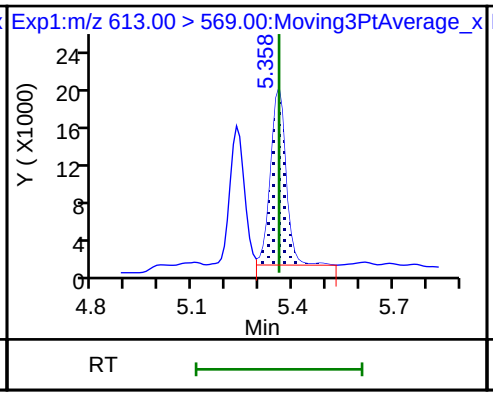
D 49 d-N-MeFOSA-M



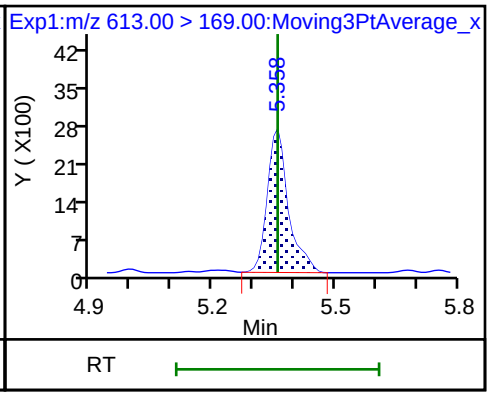
50 NMeFOSA



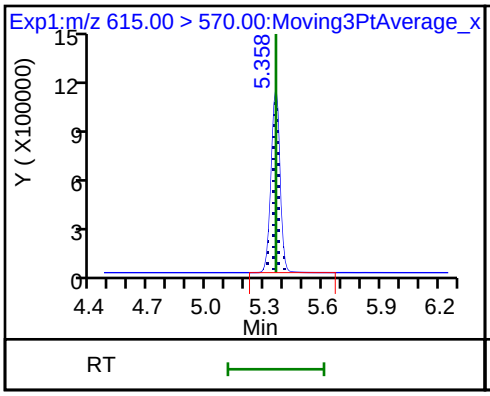
57 Perfluorododecanoic acid



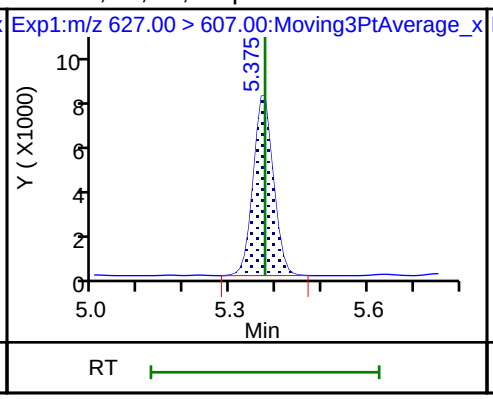
57 Perfluorododecanoic acid



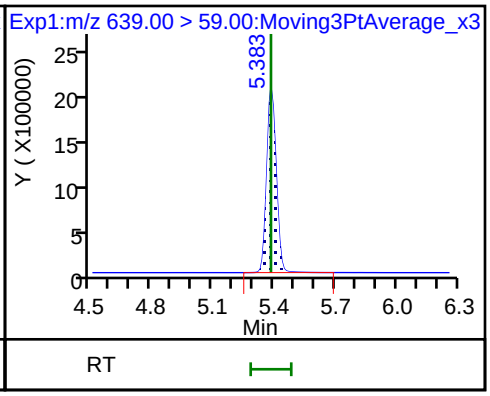
D 56 13C2 PFDoA



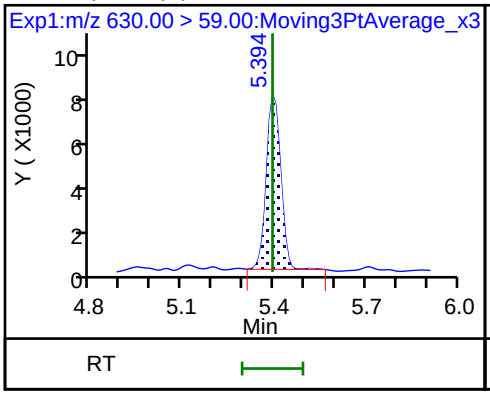
58 1H,1H,2H,2H-perfluorododecanesul



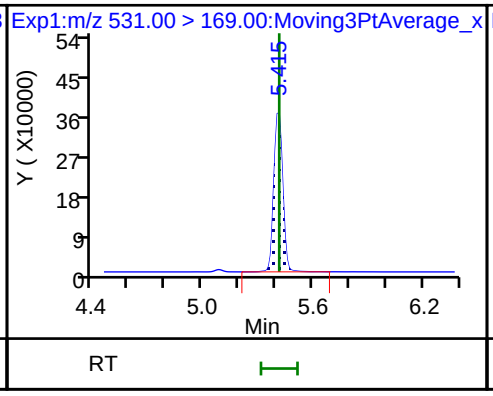
D 52 d9-N-EtFOSE-M



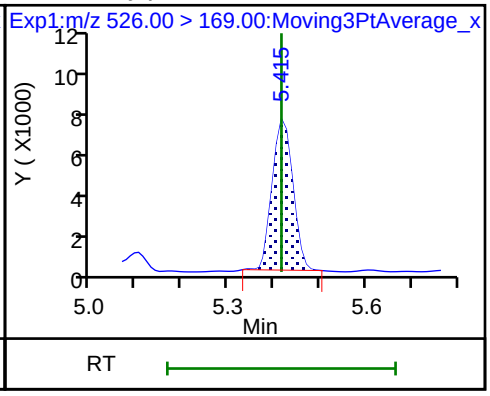
53 2-(N-ethylperfluoro-1-octanesulf



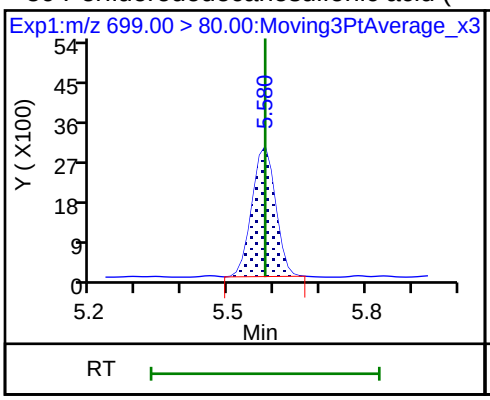
D 54 d-N-EtFOSA-M



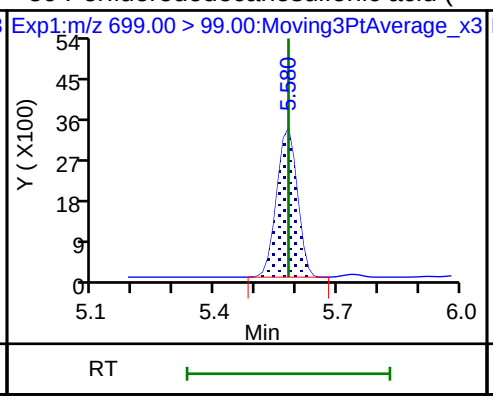
55 N-ethylperfluoro-1-octanesulfona



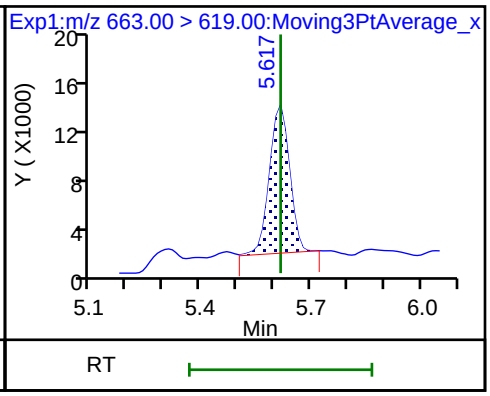
59 Perfluorododecanesulfonic acid (



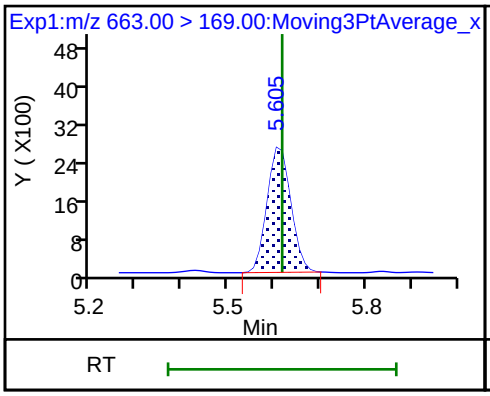
59 Perfluorododecanesulfonic acid (



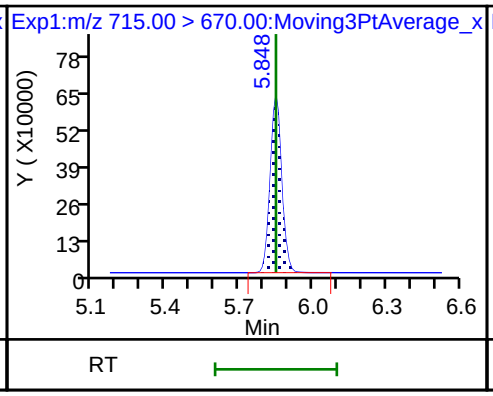
60 Perfluorotridecanoic acid



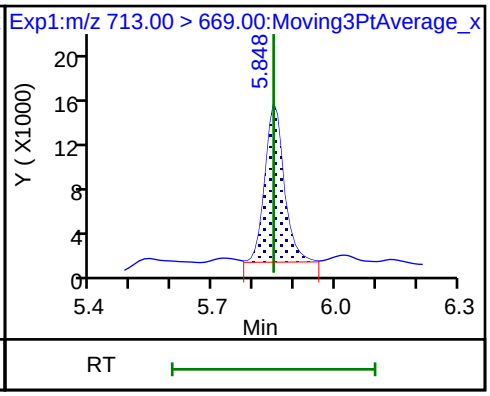
60 Perfluorotridecanoic acid



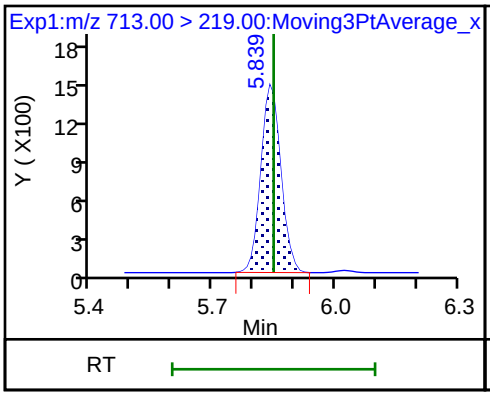
D 61 13C2 PFTeDA



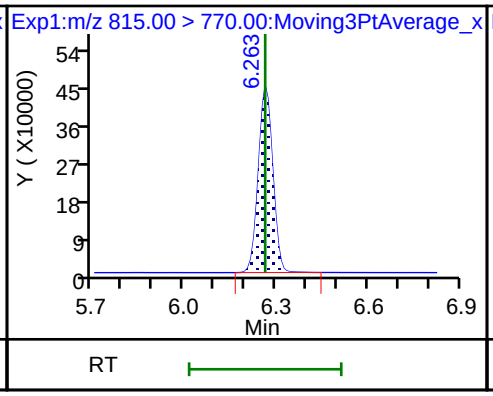
62 Perfluorotetradecanoic acid



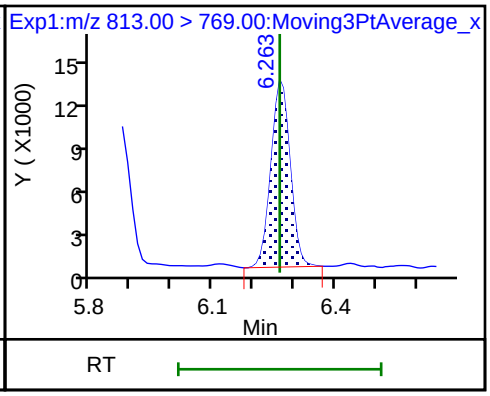
62 Perfluorotetradecanoic acid



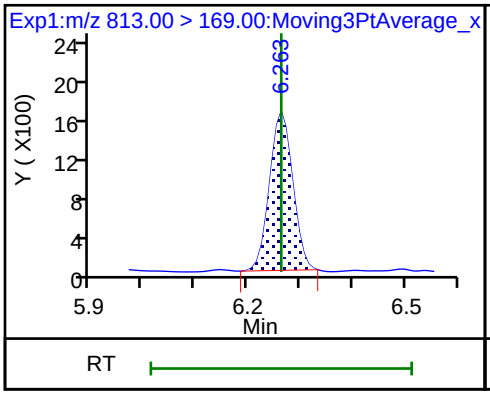
D 64 13C2 PFHxDA



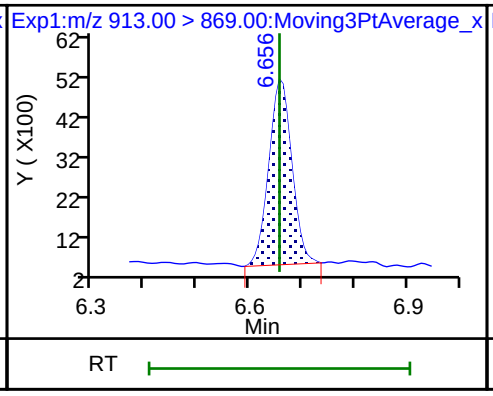
63 Perfluorohexadecanoic acid



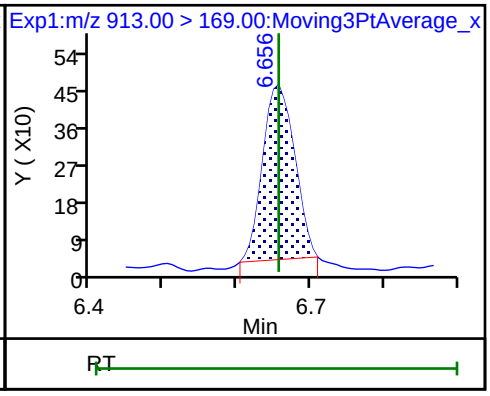
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

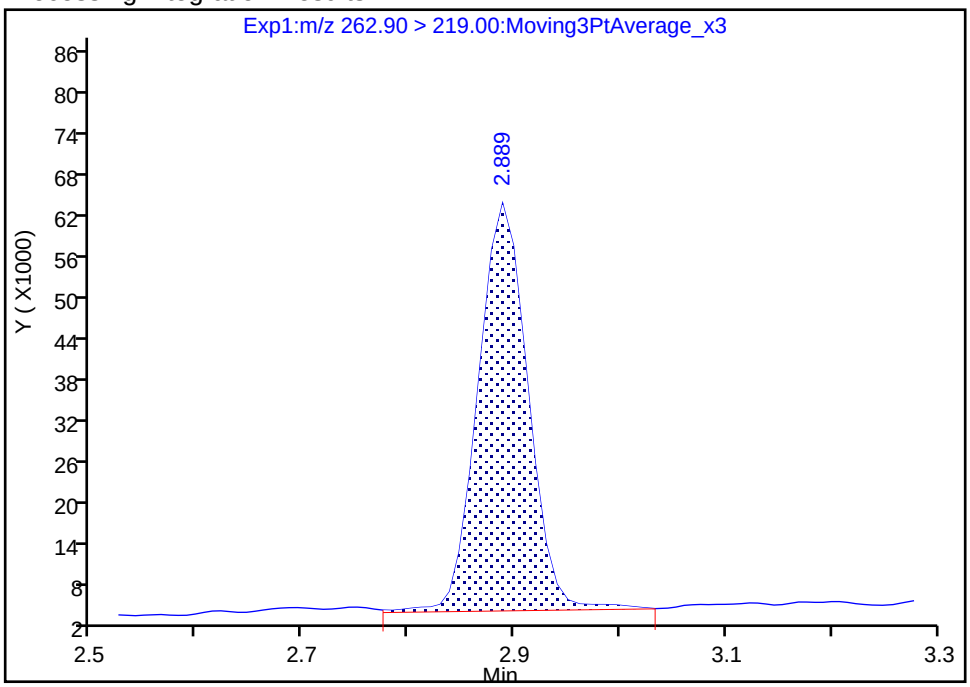
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_005.d				
Injection Date:	05-Jun-2020 00:36:13	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

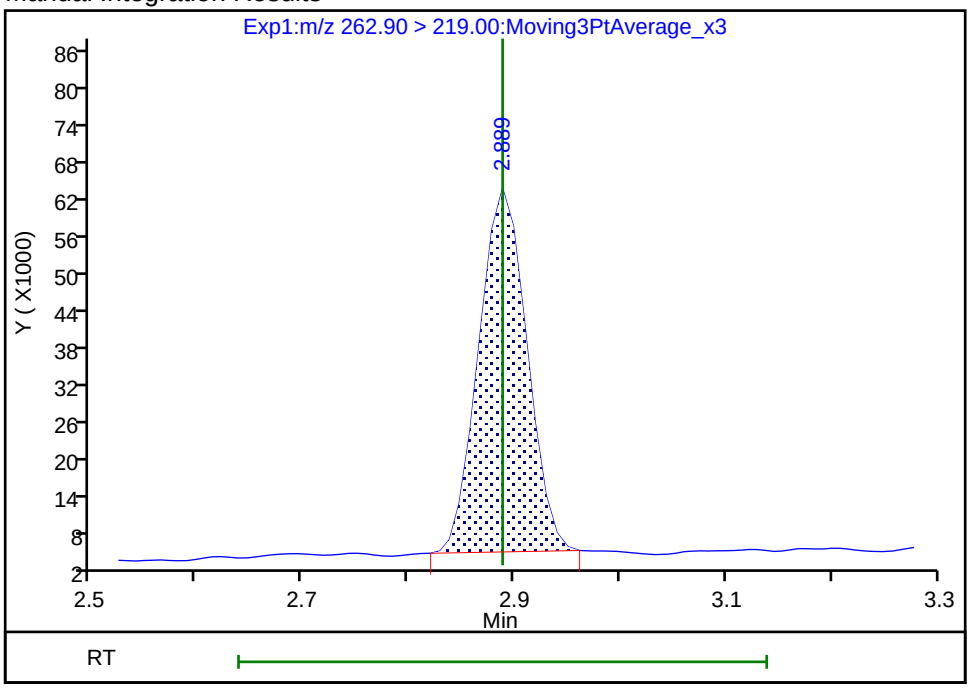
Processing Integration Results

RT: 2.89
Area: 194689
Amount: 0.057344
Amount Units: ng/ml



Manual Integration Results

RT: 2.89
Area: 184575
Amount: 0.054365
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 07:57:34
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

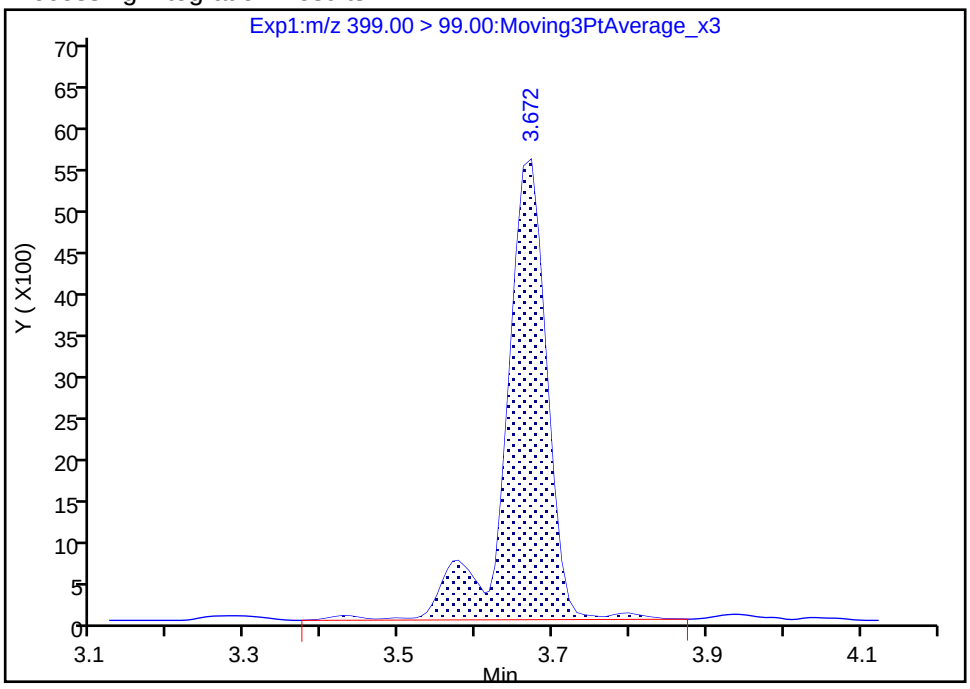
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_005.d				
Injection Date:	05-Jun-2020 00:36:13	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

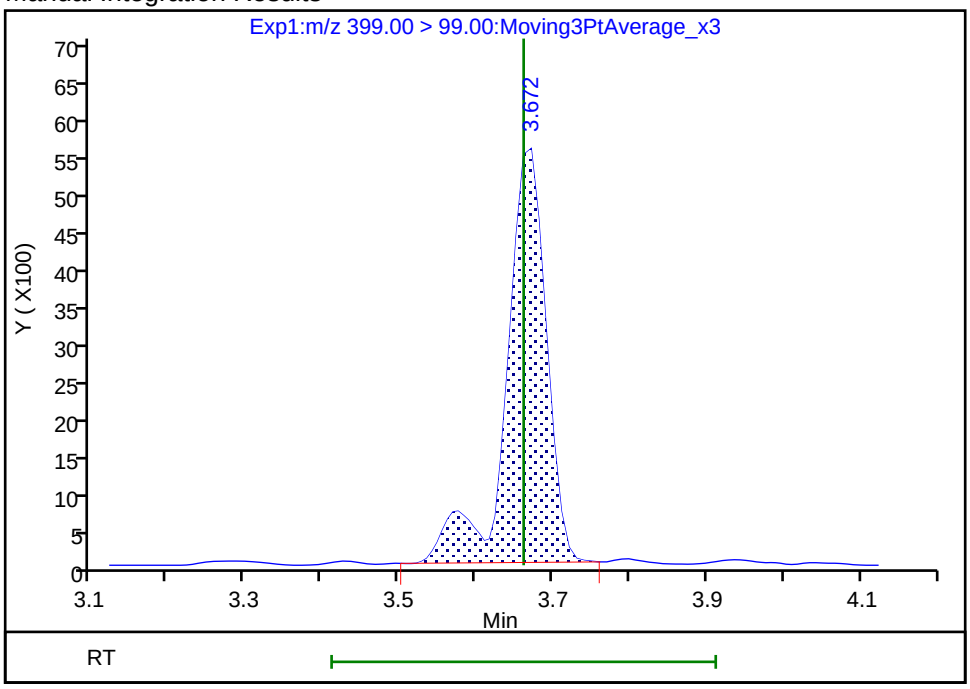
Processing Integration Results

RT: 3.67
Area: 21038
Amount: 0.050352
Amount Units: ng/ml



Manual Integration Results

RT: 3.67
Area: 20190
Amount: 0.049031
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 07:57:56

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

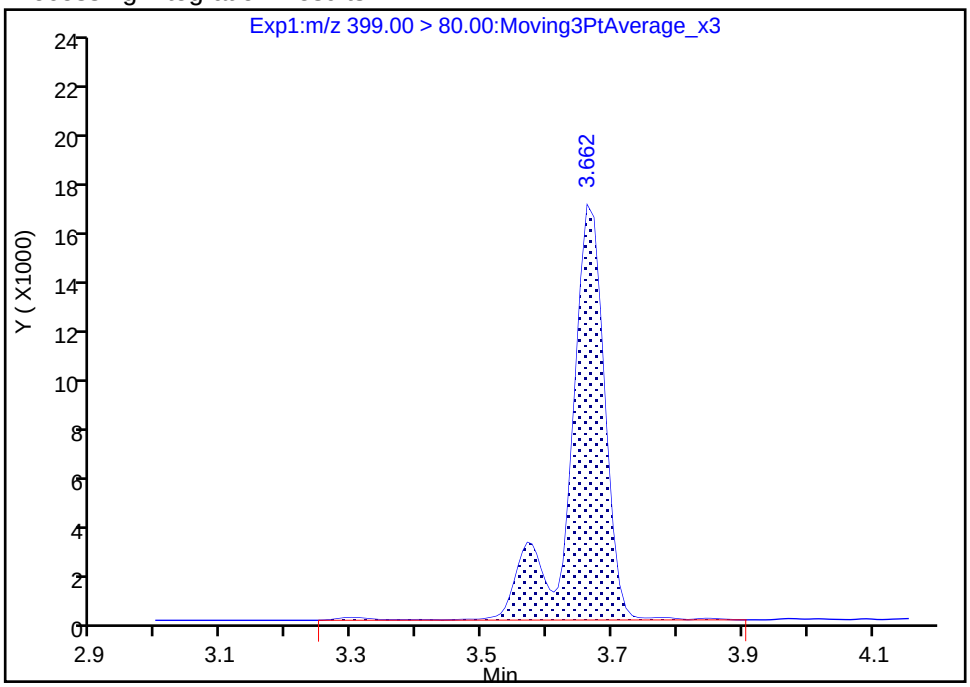
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_005.d				
Injection Date:	05-Jun-2020 00:36:13	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

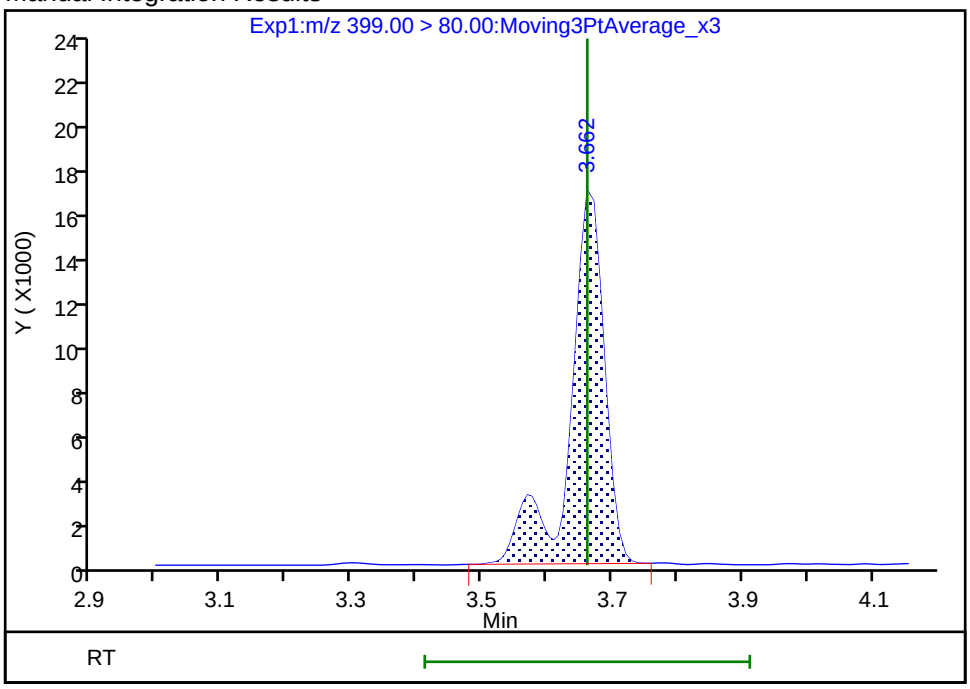
Processing Integration Results

RT: 3.66
Area: 62395
Amount: 0.050352
Amount Units: ng/ml



Manual Integration Results

RT: 3.66
Area: 60758
Amount: 0.049031
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 07:58:01
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

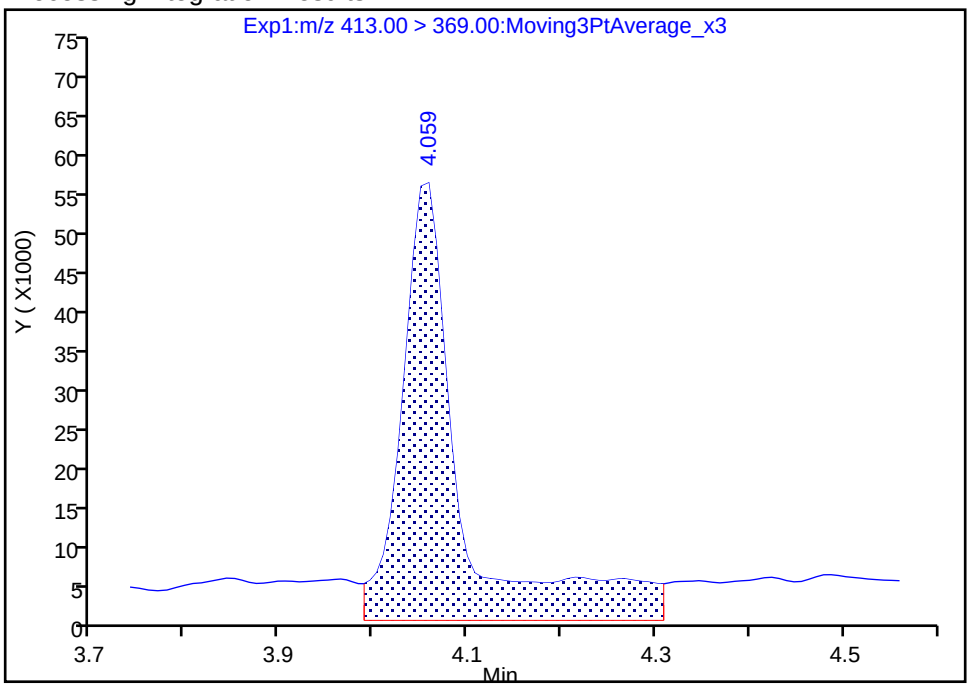
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_005.d				
Injection Date:	05-Jun-2020 00:36:13	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

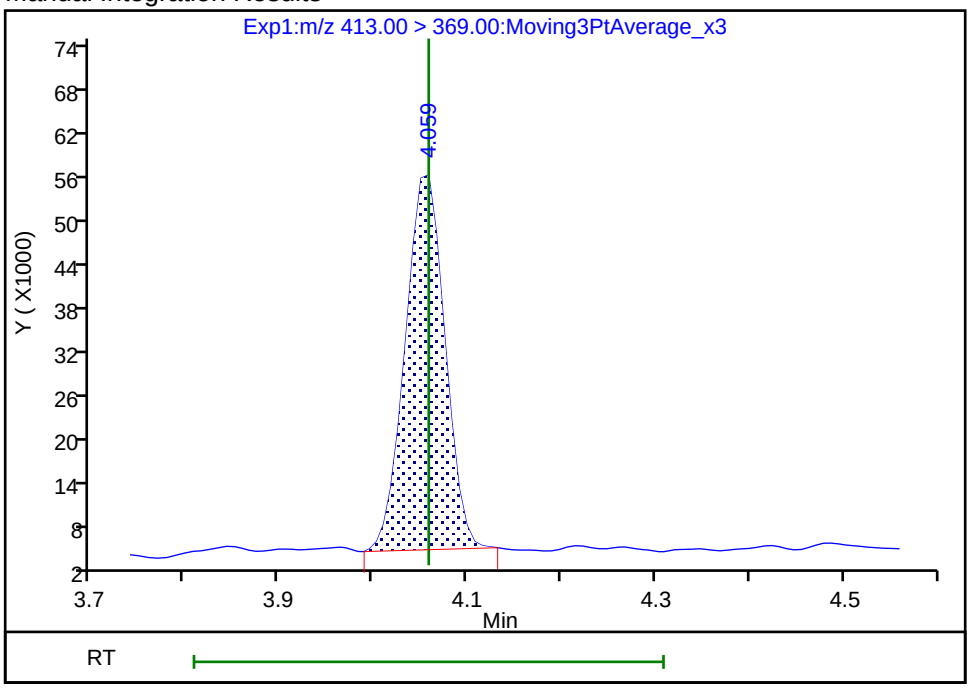
Processing Integration Results

RT: 4.06
Area: 244789
Amount: 0.093784
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 149031
Amount: 0.057097
Amount Units: ng/ml



Reviewer: maxwellm, 05-Jun-2020 13:18:12
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

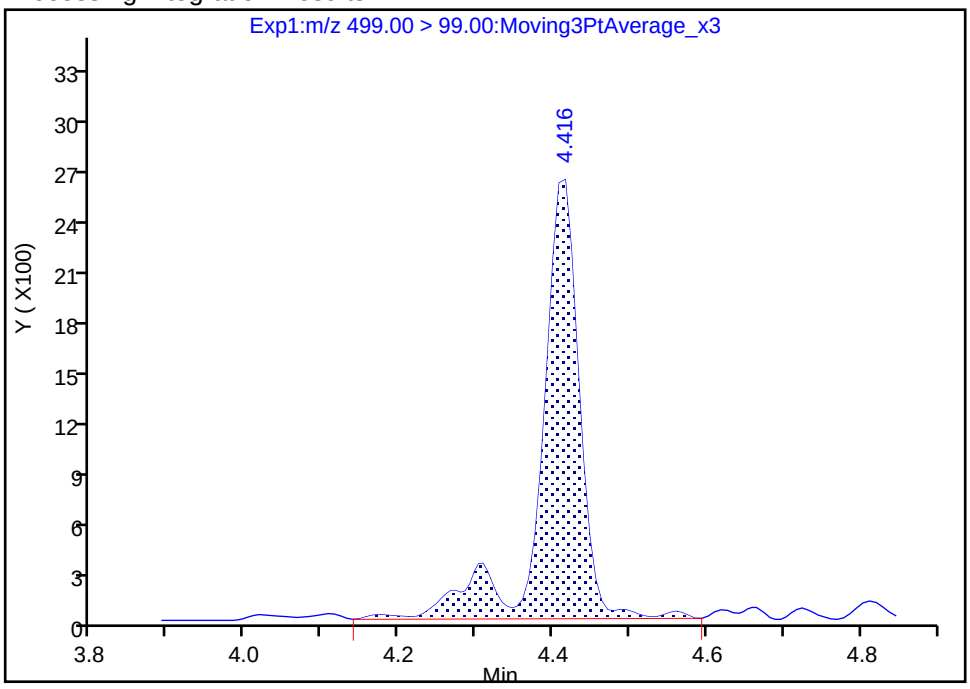
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_005.d				
Injection Date:	05-Jun-2020 00:36:13	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

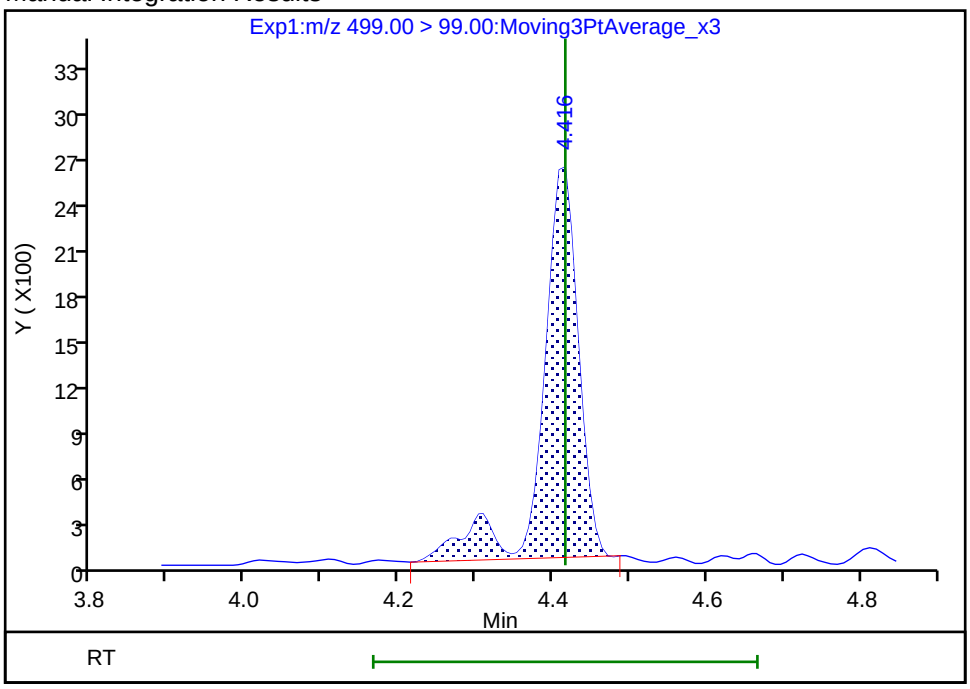
Processing Integration Results

RT: 4.42
Area: 9032
Amount: 0.044317
Amount Units: ng/ml



Manual Integration Results

RT: 4.42
Area: 8273
Amount: 0.043931
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 07:58:16
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

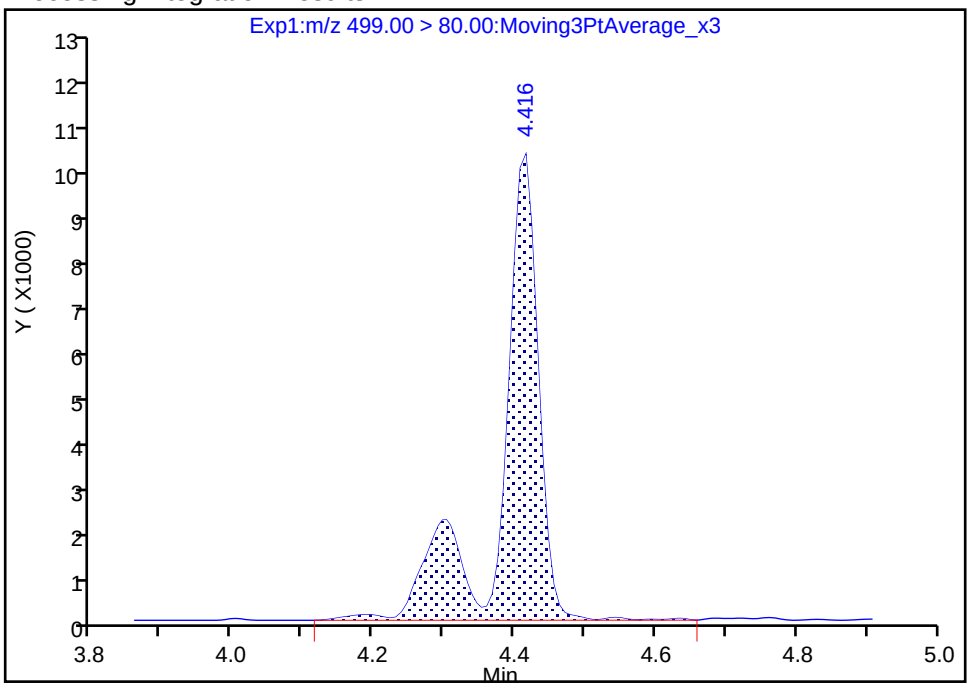
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_005.d				
Injection Date:	05-Jun-2020 00:36:13	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00 mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

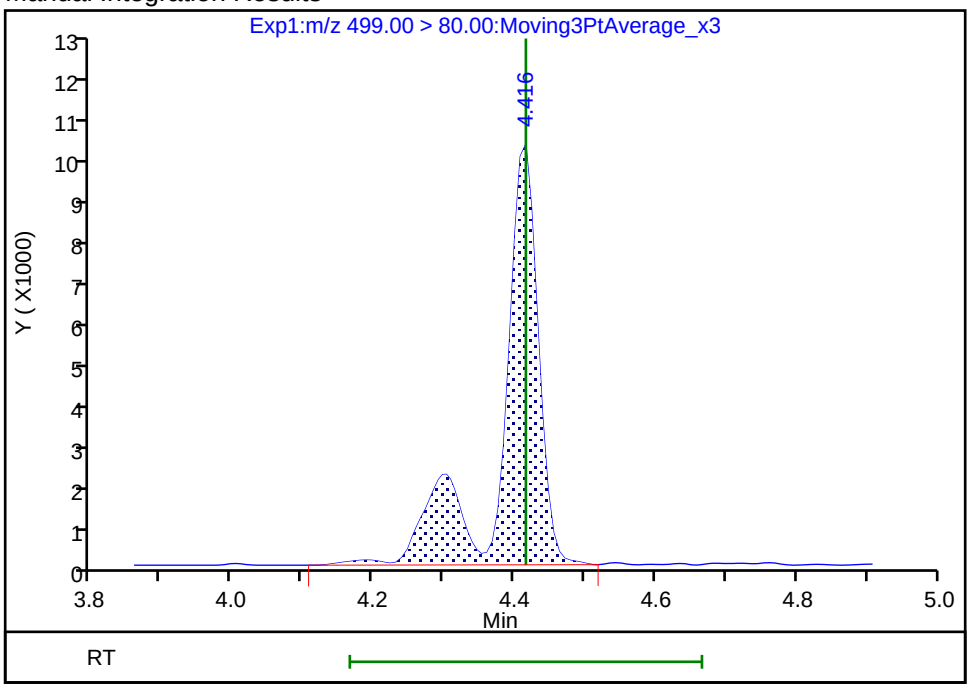
Processing Integration Results

RT: 4.42
Area: 36568
Amount: 0.044317
Amount Units: ng/ml



Manual Integration Results

RT: 4.42
Area: 36250
Amount: 0.043931
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 07:58:21
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

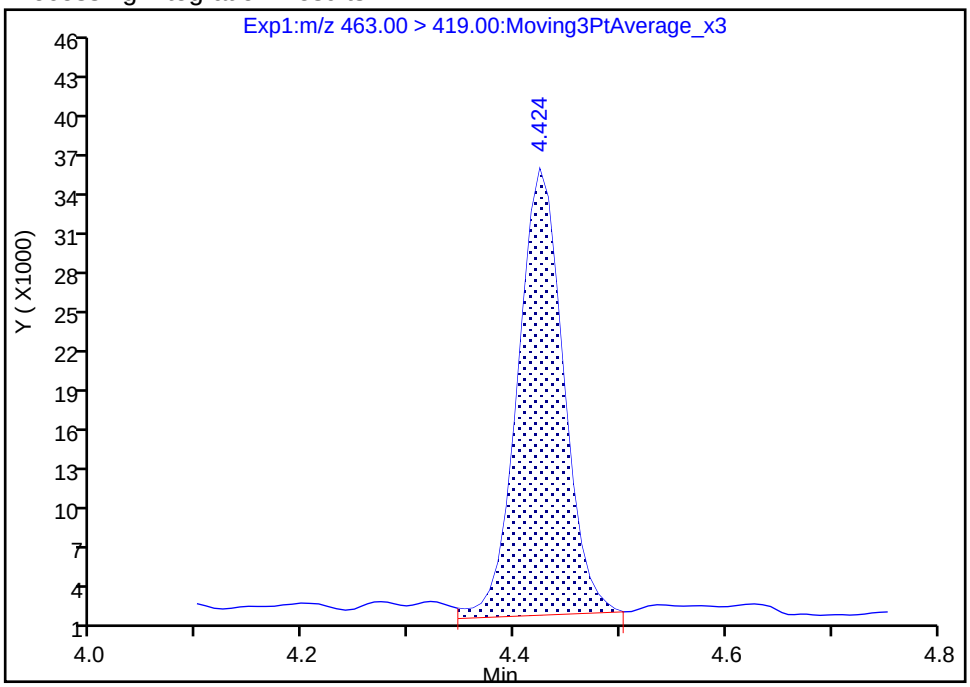
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_005.d				
Injection Date:	05-Jun-2020 00:36:13	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

31 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

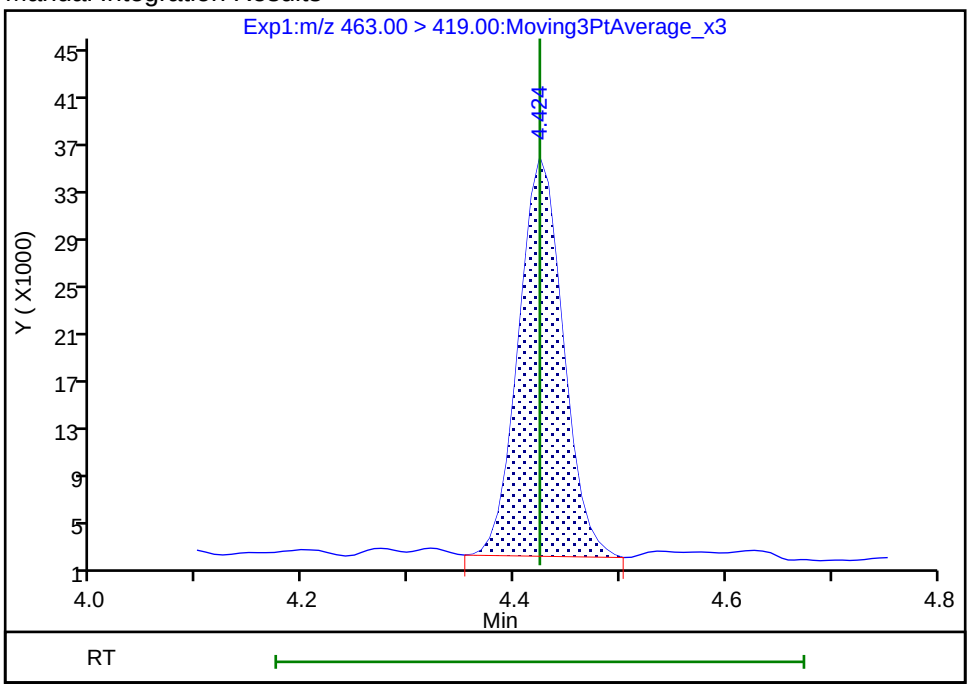
Processing Integration Results

RT: 4.42
Area: 101683
Amount: 0.052485
Amount Units: ng/ml



Manual Integration Results

RT: 4.42
Area: 98263
Amount: 0.050720
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 07:58:32
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

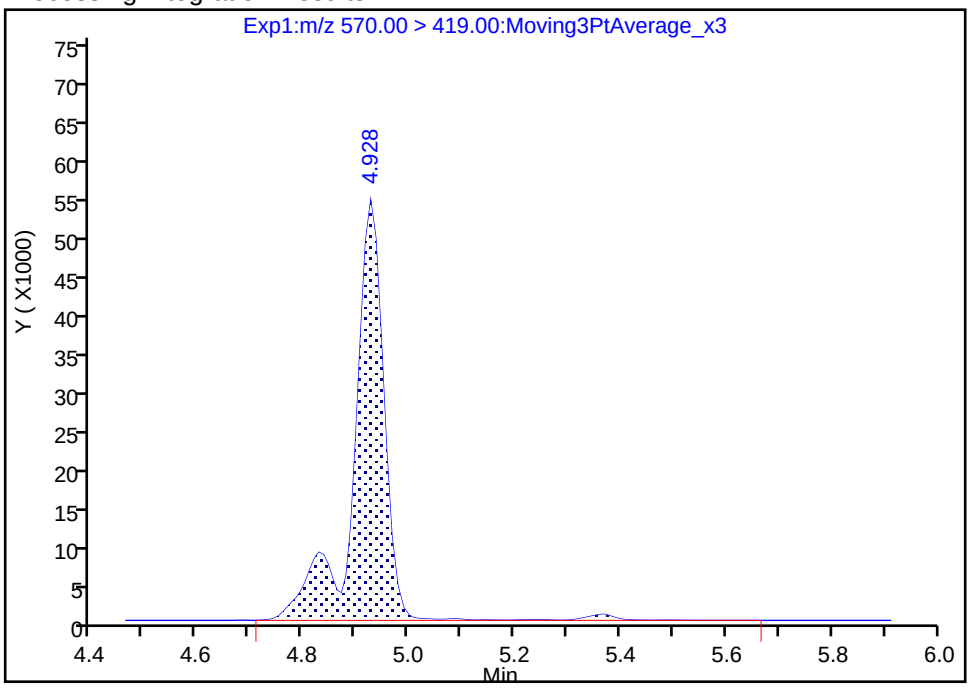
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_005.d				
Injection Date:	05-Jun-2020 00:36:13	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

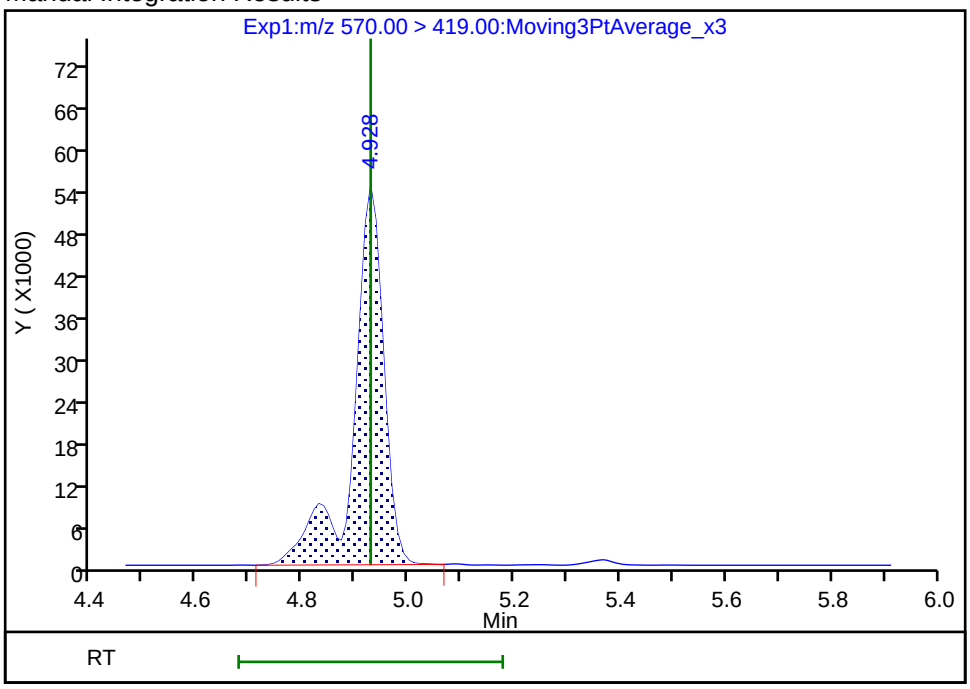
Processing Integration Results

RT: 4.93
Area: 220360
Amount: 0.492667
Amount Units: ng/ml



Manual Integration Results

RT: 4.93
Area: 215398
Amount: 0.481573
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 07:58:45
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-383791/3 Calibration Date: 06/05/2020 00:45

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_B_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.9260	0.9515		1.03	1.00	2.8	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.007	0.9385		0.932	1.00	-6.8	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9749	0.9796		0.888	0.884	0.5	50.0
4:2 FTS	AveID	2.255	2.318		0.960	0.934	2.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9375	0.8949		0.955	1.00	-4.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7335	0.7236		0.925	0.938	-1.4	50.0
HFPO-DA (GenX)	AveID	0.9134	0.9404		1.03	1.00	2.9	40.0
Perfluoroheptanoic acid	AveID	1.011	1.055		1.04	1.00	4.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.123	1.054		0.854	0.910	-6.1	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	7.331	8.038		1.03	0.942	9.6	50.0
6:2 FTS	AveID	1.966	2.033		0.981	0.948	3.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.091	1.141		0.995	0.952	4.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.057	0.9850		0.932	1.00	-6.8	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9894	0.9935		0.932	0.928	0.4	40.0
Perfluorononanoic acid (PFNA)	AveID	1.014	1.026		1.01	1.00	1.1	40.0
F-53B Major	AveID	2.729	2.930		1.00	0.932	7.3	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7987	0.8622		1.04	0.960	7.9	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9658	0.9554		0.989	1.00	-1.1	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.8783	0.8902		1.01	1.00	1.3	40.0
8:2 FTS	AveID	1.631	1.610		0.946	0.958	-1.3	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7297	0.7432		1.02	1.00	1.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7009	0.7343		1.01	0.964	4.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7214	0.5885		0.816	1.00	-18.4	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.7067	0.6604		0.935	1.00	-6.5	40.0
F-53B Minor	AveID	2.579	2.657		0.970	0.942	3.0	50.0
NMeFOSE	AveID	1.047	1.277		1.22	1.00	22.0	40.0
NMeFOSA	AveID	0.9416	1.068		1.13	1.00	13.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9816	1.026		1.05	1.00	4.5	40.0
10:2 FTS	AveID	1.287	1.307		0.979	0.964	1.6	50.0
NEtFOSE	AveID	1.024	1.086		1.06	1.00	6.1	40.0
NEtFOSA	AveID	1.002	1.135		1.13	1.00	13.2	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2435	0.2535		1.01	0.968	4.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-383791/3 Calibration Date: 06/05/2020 00:45

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_B_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7891	0.8028		1.02	1.00	1.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.000	0.9109		0.911	1.00	-8.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8791		1.01	1.00	0.9	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4920	0.4545		0.924	1.00	-7.6	50.0
13C4 PFBA	Ave	1.583	1.494		2.36	2.50	-5.6	50.0
13C5 PFPeA	Ave	1.414	1.413		2.50	2.50	-0.0	50.0
13C3 PFBS	Ave	0.9803	0.9281		2.20	2.33	-5.3	50.0
M2-4:2 FTS	Ave	0.1305	0.1230		2.20	2.34	-5.7	50.0
13C2 PFHxA	Ave	1.374	1.356		2.47	2.50	-1.3	50.0
13C3 HFPO-DA	Ave	0.3145	0.3116		2.48	2.50	-0.9	50.0
13C4 PFHpA	Ave	1.090	1.040		2.38	2.50	-4.6	50.0
18O2 PFHxS	Ave	0.4715	0.4439		2.23	2.37	-5.9	50.0
M2-6:2 FTS	Ave	0.1440	0.1385		2.28	2.38	-3.8	50.0
13C4 PFOA	Ave	0.9856	0.9871		2.50	2.50	0.2	50.0
13C4 PFOS	Ave	0.3660	0.3302		2.16	2.39	-9.8	50.0
13C5 PFNA	Ave	0.7544	0.7557		2.50	2.50	0.2	50.0
13C2 PFDA	Ave	0.7192	0.7260		2.52	2.50	0.9	50.0
13C8 FOSA	Ave	0.7278	0.7053		2.42	2.50	-3.1	50.0
M2-8:2 FTS	Ave	0.1717	0.1652		2.30	2.40	-3.8	50.0
d3-NMeFOSAA	Ave	0.2685	0.2513		2.34	2.50	-6.4	50.0
13C2 PFUnA	Ave	0.6132	0.6443		2.63	2.50	5.1	50.0
d5-NEtFOSAA	Ave	0.2733	0.2611		2.39	2.50	-4.5	50.0
d7-N-MeFOSE-M	Ave	0.1833	0.1579		10.8	12.5	-13.9	50.0
d-N-MeFOSA-M	Ave	0.2300	0.1941		2.11	2.50	-15.6	50.0
13C2 PFDoA	Ave	0.5432	0.5450		2.51	2.50	0.3	50.0
d9-N-EtFOSE-M	Ave	0.2246	0.2217		12.3	12.5	-1.3	50.0
d-N-EtFOSA-M	Ave	0.2334	0.1986		2.13	2.50	-14.9	50.0
13C2 PFTeDA	Ave	0.3551	0.3250		2.29	2.50	-8.5	50.0
13C2 PFHxDA	Ave	0.2944	0.2702		2.29	2.50	-8.2	50.0
13C8 PFOA	Ave	0.6050	0.5847		2.37	2.45	-3.4	50.0
13C8 PFOS	Ave	0.1244	0.1117		2.15	2.39	-10.2	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 05-Jun-2020 00:45:20 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4 (26)
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97045.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 08:00:41 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1041

First Level Reviewer: sorndeek Date: 08-Jun-2020 08:00:41
Ratio Calibration: Average of Initial Calibration

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	2.549	2.549	0.0	0.628	9753052	2.36		94.4	12806	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.557	2.557	0.0	1.003	3712133	1.03		103	981	
D 4 13C5 PFPeA										
267.90 > 223.00	2.899	2.899	0.0	0.714	9223317	2.50		99.9	11182	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.899	2.899	0.0	1.000	3462277	0.9316		93.2	239	
D 9 13C3 PFBS										
301.90 > 80.00	2.940	2.940	0.0	0.724	5634038	2.20		94.7	15477	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.940	2.940	0.0	1.000	2098426	0.8883	Target=2.14	100	954	
298.90 > 99.00	2.940	2.940	0.0	1.000	977643		2.15(1.07-3.21)		715	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.231	3.231	0.0	0.796	749620	2.20		94.3	1608	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.231	3.231	0.0	1.000	695020	0.9599		103	7888	
D 11 13C2 PFHxA										
315.00 > 270.00	3.278	3.278	0.0	0.808	8849205	2.47		98.7	12403	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.278	3.278	0.0	1.000	3167484	0.9545	Target=15.73	95.5	1496	
313.00 > 119.00	3.278	3.278	0.0	1.000	209118		15.15(7.86-23.59)		521	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.288	3.288	0.0	1.118	1644660	0.9253	Target=2.69	98.6	6630	
349.00 > 99.00	3.288	3.288	0.0	1.118	616660		2.67(1.35-4.04)		4227	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.394	3.394	0.0	0.836	2034063	2.48		99.1	8572	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.394	3.394	0.0	1.000	765110	1.03		103	5447	
D 18 13C4 PFHpA										
367.00 > 322.00	3.672	3.672	0.0	0.905	6786497	2.38		95.4	13207	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.672	3.672	0.0	1.000	2864762	1.04	Target=3.80	104	1067	
363.00 > 169.00	3.672	3.672	0.0	1.000	712266		4.02(1.90-5.71)		3429	
D 17 18O2 PFHxS										
403.00 > 84.00	3.682	3.682	0.0	0.907	2741090	2.23		94.1	7581	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.682	3.682	0.0	1.000	1111612	0.8541	Target=2.99	93.9	4088	
399.00 > 99.00	3.682	3.682	0.0	1.000	375836		2.96(1.50-4.49)		1669	
19 DONA										
377.00 > 251.00	3.721	3.721	0.0	0.845	6528418	1.03	Target=2.14	110	12653	
377.00 > 85.00	3.721	3.721	0.0	0.845	3017090		2.16(1.07-3.21)		8590	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.042	4.042	0.0	0.996	858738	2.28		96.2	6430	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.042	4.042	0.0	1.000	696898	0.9806		103	5852	
$ 26 13C8 PFOA										
421.00 > 376.00	4.051	4.051	0.0	0.998	3736265	2.37		96.6	13628	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.051	4.051	0.0	0.920	936190	1.00	Target=3.77	105	4323	
449.00 > 99.00	4.051	4.051	0.0	0.920	245750		3.81(1.89-5.66)		2205	
D 25 13C4 PFOA										
417.00 > 372.00	4.059	4.059	0.0	1.000	6443185	2.50		100	12829	
* 23 13C2 PFOA										
415.00 > 370.00	4.059	4.059	0.0		6527372	2.50			10018	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.059	4.059	0.0	1.000	2538579	0.9323	Target=2.88	93.2	191	M
413.00 > 169.00	4.059	4.059	0.0	1.000	903056		2.81(1.44-4.31)		2671	M
$ 28 13C8 PFOS										
507.00 > 99.00	4.405	4.405	0.0	1.085	697269	2.15		89.8	4530	
D 27 13C4 PFOS										
503.00 > 80.00	4.405	4.405	0.0	1.085	2060680	2.16		90.2	9337	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.405	4.405	0.0	1.000	794902	0.9318	Target=4.89	100	3129	
499.00 > 99.00	4.405	4.405	0.0	1.000	157832		5.04(2.44-7.33)		1273	M
D 30 13C5 PFNA										
468.00 > 423.00	4.420	4.420	0.0	1.089	4932726	2.50		100	9503	
31 Perfluorononanoic acid										
463.00 > 419.00	4.420	4.420	0.0	1.000	2023798	1.01	Target=7.00	101	362	
463.00 > 169.00	4.420	4.420	0.0	1.000	287476		7.04(3.50-10.51)		1569	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.598	4.598	0.0	1.044	2354506	1.00		107	6515	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.730	4.730	0.0	1.074	713659	1.04	Target=2.77	108	1486	
549.00 > 99.00	4.730	4.730	0.0	1.074	244107		2.92(1.38-4.15)		1838	
D 33 13C8 FOSA										
506.00 > 78.00	4.752	4.752	0.0	1.171	4603755	2.42		96.9	4353	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.752	4.752	0.0	1.000	1811020	0.9893	Target=10.36	98.9	549	
513.00 > 169.00	4.752	4.752	0.0	1.000	175427		10.32(5.18-15.54)		248	
D 39 13C2 PFDA										
515.00 > 470.00	4.752	4.752	0.0	1.171	4738774	2.52		101	9644	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.752	4.752	0.0	1.000	1639241	1.01		101	2257	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.761	4.761	0.0	1.000	665254	0.9456		98.7	3516	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.761	4.761	0.0	1.173	1032788	2.30		96.2	5520	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.907	4.907	0.0	1.209	1640094	2.34		93.6	2463	
41 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.917	4.917	0.0	1.002	487575	1.02		102	733	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.039	5.039	0.0	1.144	610341	1.01	Target=2.97	105	2807	
599.00 > 99.00	5.039	5.039	0.0	1.144	204044		2.99(1.49-4.46)		1503	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.057	5.057	0.0	0.998	990061	0.8158	Target=7.56	81.6	547	
563.00 > 169.00	5.057	5.057	0.0	0.998	148658		6.66(3.78-11.34)		1629	
D 43 13C2 PFUnA										
565.00 > 520.00	5.066	5.066	0.0	1.248	4205574	2.63		105	18052	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.066	5.066	0.0	1.248	1704220	2.39		95.5	1960	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.075	5.075	0.0	1.002	450190	0.9345		93.5	2401	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.193	5.193	0.0	1.179	2158276	0.9705		103	4443	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.202	5.202	0.0	1.282	5153465	10.8		86.1	3379	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.211	5.211	0.0	1.002	526457	1.22		122	974	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.220	5.220	0.0	1.286	1266946	2.11		84.4	190	
50 NMeFOSA										
512.00 > 169.00	5.220	5.220	0.0	1.000	541323	1.13		113	601	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.340	5.340	0.0	1.000	1459819	1.05	Target=7.18	105	247	
613.00 > 169.00	5.340	5.340	0.0	1.000	186244		7.84(3.59-10.76)		1708	
D 56 13C2 PFDoA										
615.00 > 570.00	5.340	5.340	0.0	1.316	3557639	2.51		100	8849	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.358	5.358	0.0	1.125	543192	0.9790		102	6796	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.367	5.367	0.0	1.322	7234877	12.3		98.7	4545	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.375	5.375	0.0	1.001	628587	1.06		106	1232	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.394	5.394	0.0	1.329	1296247	2.13		85.1	550	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.394	5.394	0.0	1.000	588376	1.13		113	744	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.555	5.555	0.0	1.261	211572	1.01	Target=0.79	104	2140	
699.00 > 99.00	5.555	5.555	0.0	1.261	261351		0.81(0.39-1.18)		3123	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.592	5.592	0.0	1.047	1142452	1.02	Target=6.63	102	200	
663.00 > 169.00	5.592	5.592	0.0	1.047	189562		6.03(3.32-9.95)		2045	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.830	5.830	0.0	1.436	2121531	2.29		91.5	7374	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.830	5.830	0.0	1.000	772956	0.9108	Target=8.46	91.1	215	
713.00 > 219.00	5.830	5.830	0.0	1.000	107963		7.16(4.23-12.69)		2252	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.245	6.245	0.0	1.539	1763722	2.29		91.8	4845	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.255	6.255	0.0	1.002	620211	1.01	Target=7.92	101	83.2	
813.00 > 169.00	6.245	6.255	-0.010	1.000	74969		8.27(3.96-11.88)		1052	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.650	6.650	0.0	1.065	320675	0.9239	Target=10.24	92.4	62.3	
913.00 > 169.00	6.643	6.650	-0.007	1.064	33610		9.54(5.12-15.36)		743	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

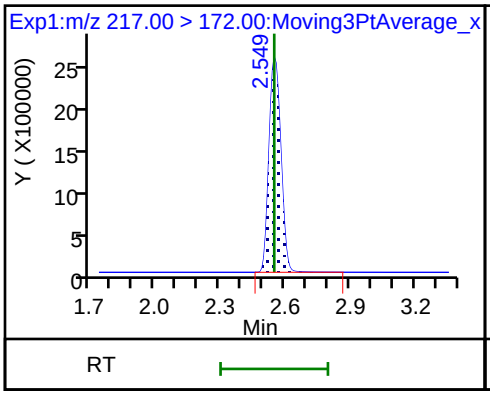
LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 08-Jun-2020 08:00:42 Chrom Revision: 2.3 03-Jun-2020 23:27:16

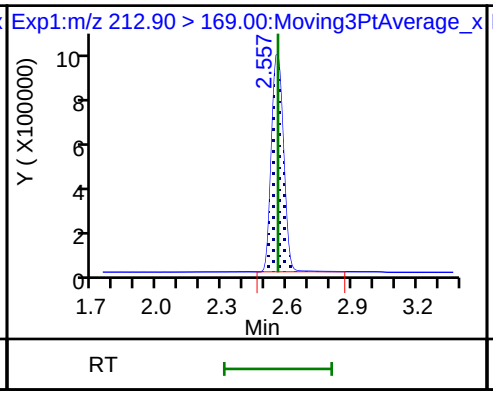
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_006.d
Injection Date: 05-Jun-2020 00:45:20 Instrument ID: A15
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL

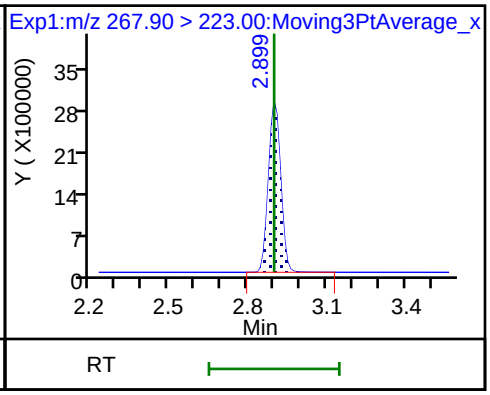
D 1 13C4 PFBA



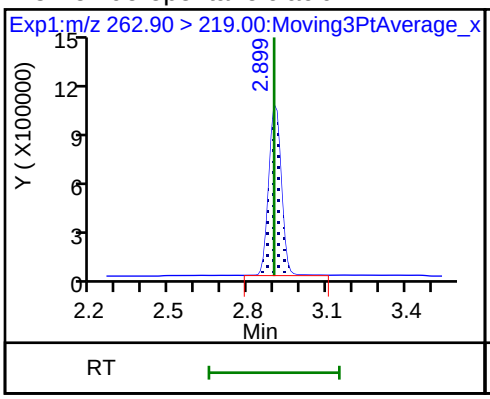
2 Perfluorobutanoic acid



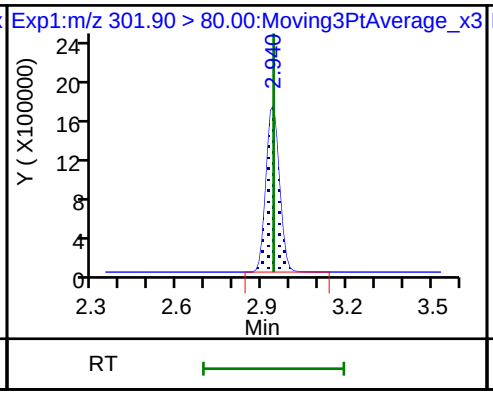
D 4 13C5 PFPeA



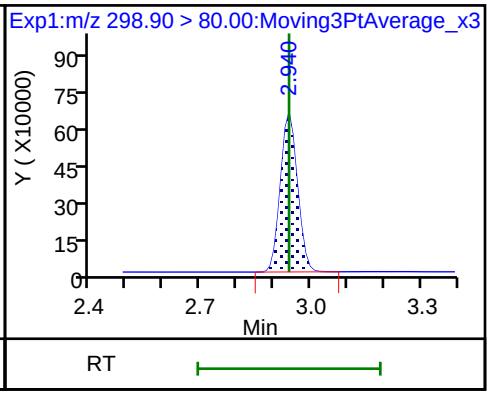
5 Perfluoropentanoic acid



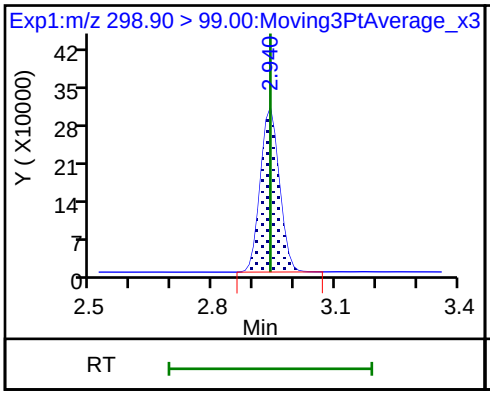
D 9 13C3 PFBS



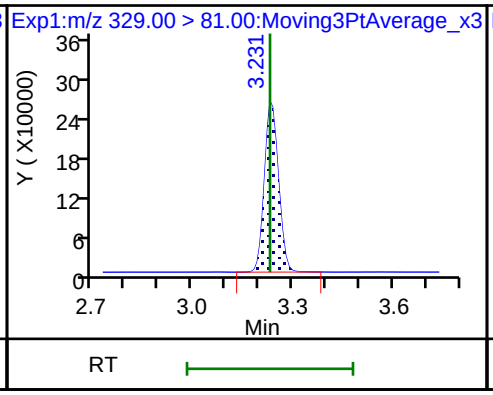
6 Perfluorobutanesulfonic acid



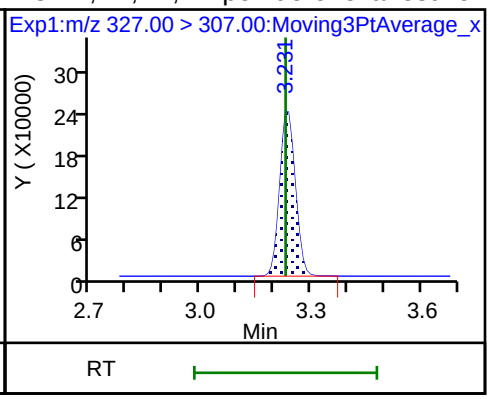
6 Perfluorobutanesulfonic acid



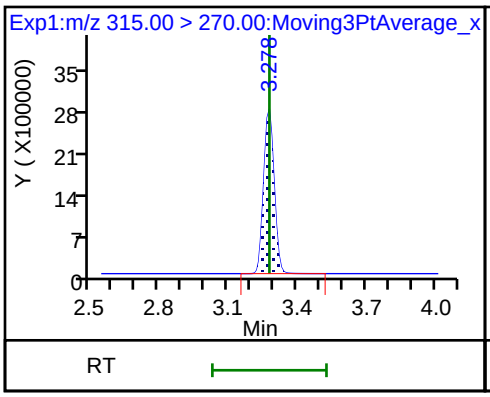
D 7 M2-4:2 FTS



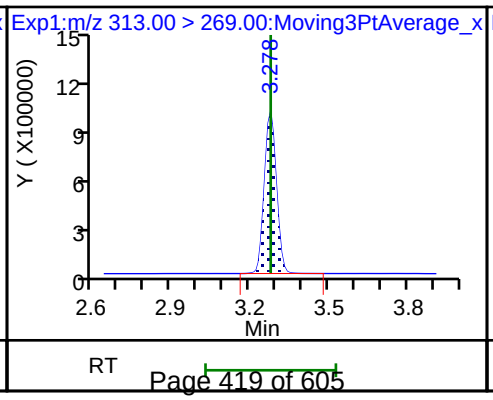
8 1H,1H,2H,2H-perfluorohexanesulfo



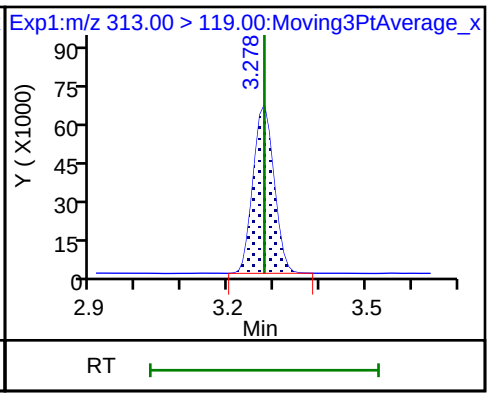
D 11 13C2 PFHxA



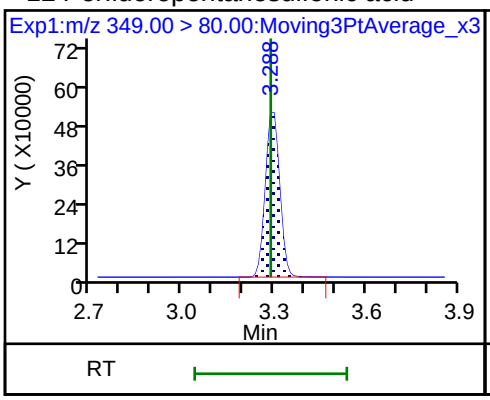
10 Perfluorohexanoic acid



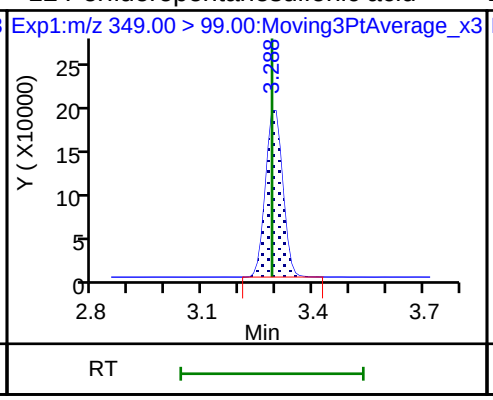
10 Perfluorohexanoic acid



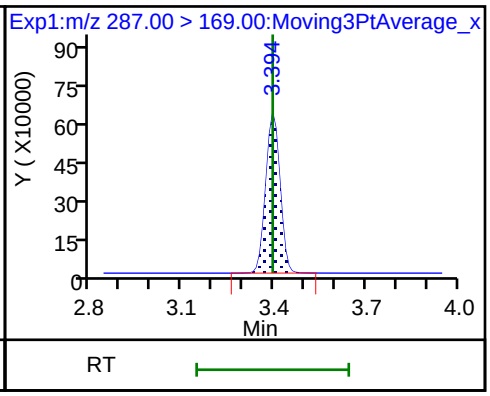
12 Perfluoropentanesulfonic acid



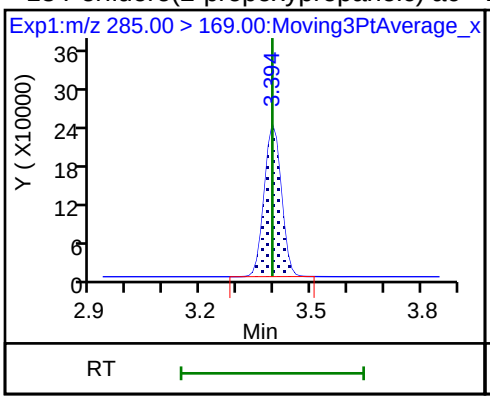
12 Perfluoropentanesulfonic acid



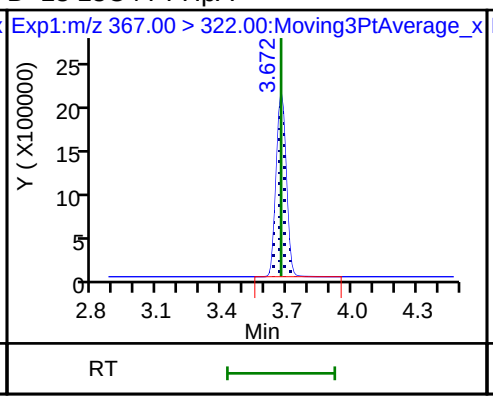
D 14 13C3 HFPO-DA



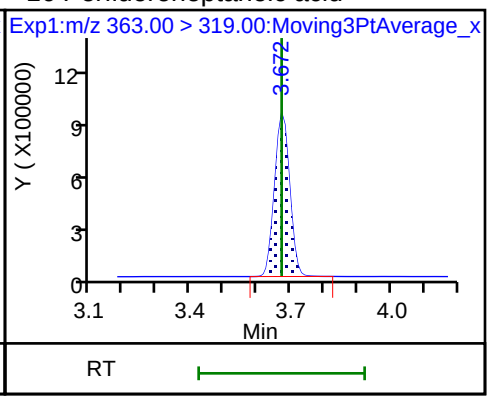
13 Perfluoro(2-propoxypropanoic) ac



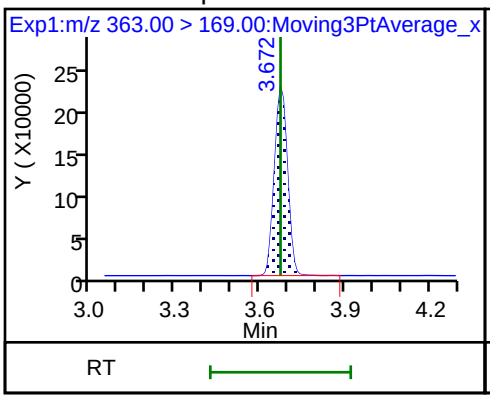
D 18 13C4 PFHpA



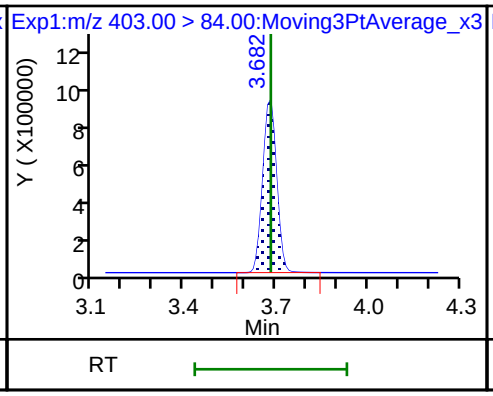
16 Perfluoroheptanoic acid



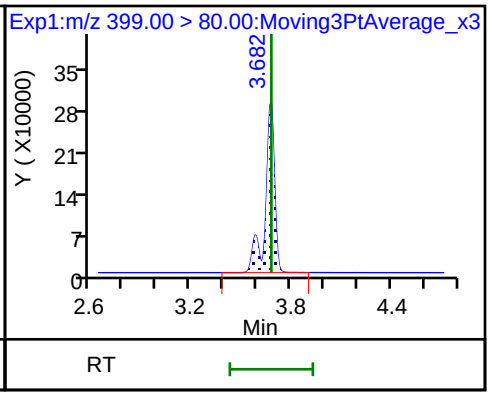
16 Perfluoroheptanoic acid



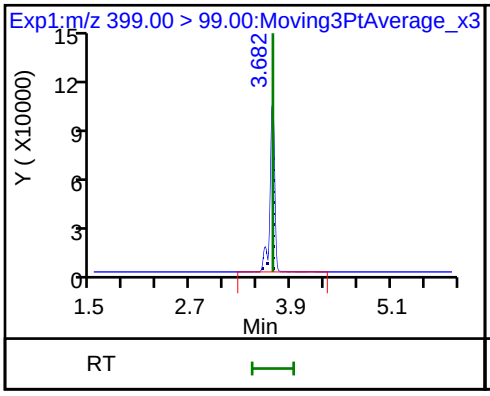
D 17 18O2 PFHxS



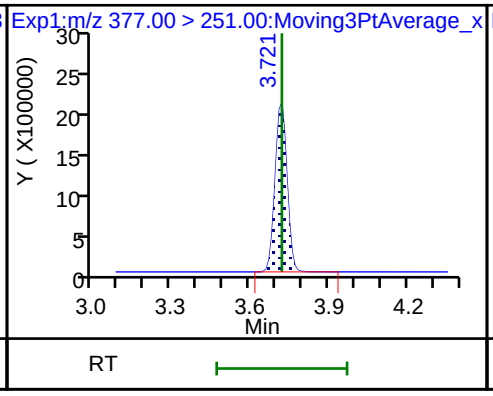
15 Perfluorohexanesulfonic acid



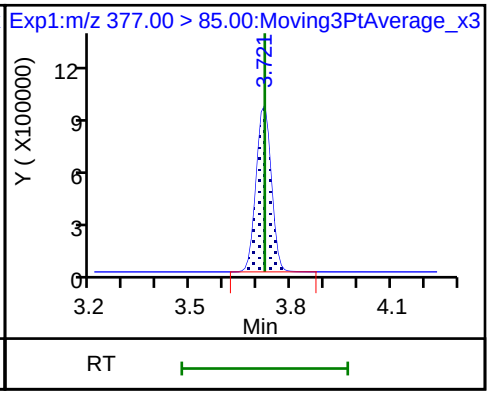
15 Perfluorohexanesulfonic acid



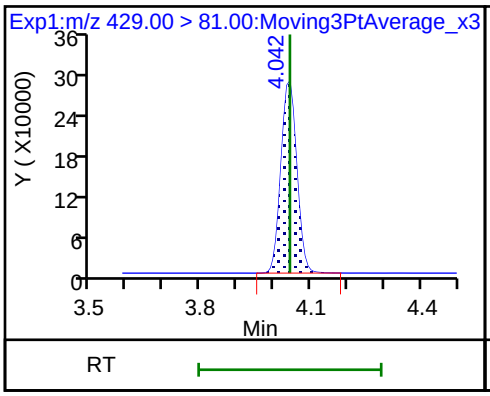
19 DONA



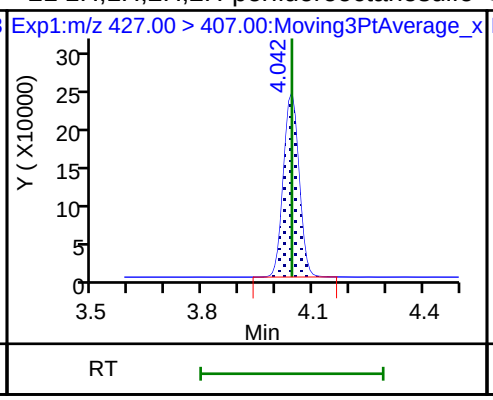
19 DONA



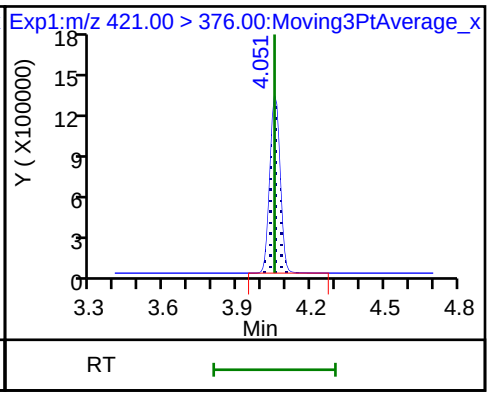
D 20 M2-6:2 FTS



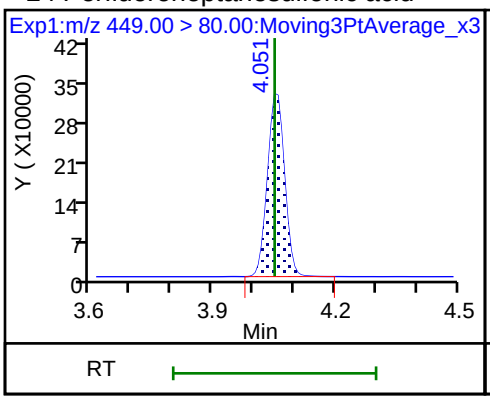
21 1H,1H,2H,2H-perfluorooctanesulfo



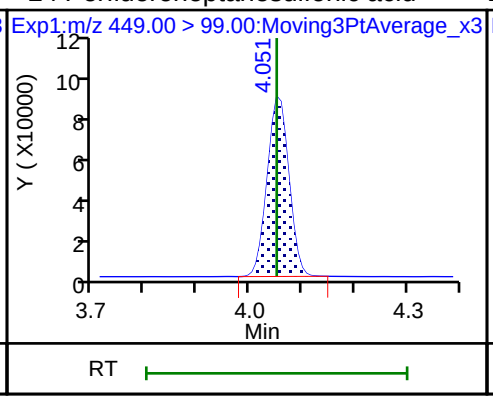
$ 26 13C8 PFOA



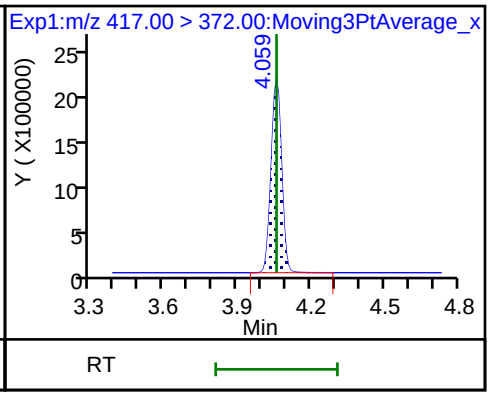
24 Perfluoroheptanesulfonic acid



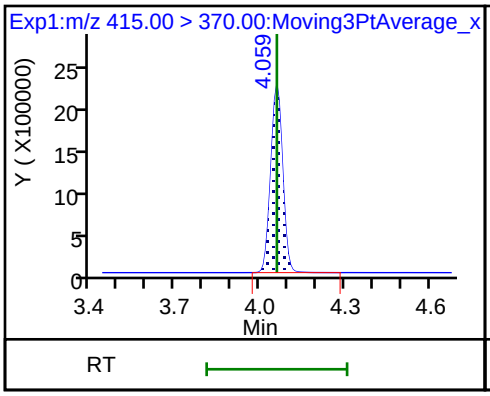
24 Perfluoroheptanesulfonic acid



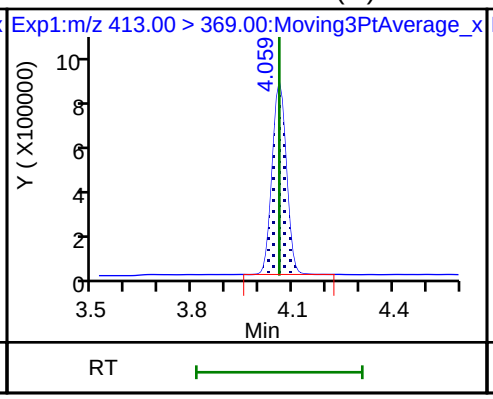
D 25 13C4 PFOA



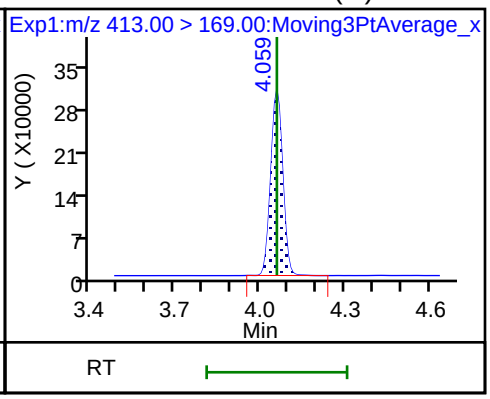
* 23 13C2 PFOA



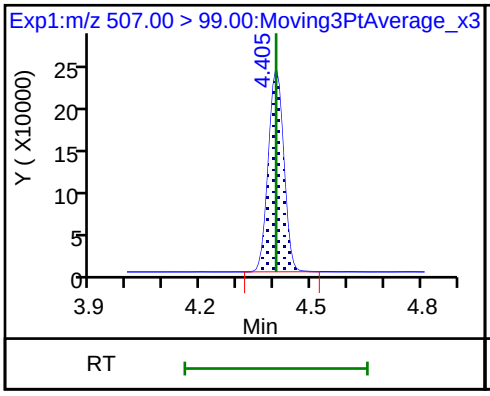
22 Perfluorooctanoic acid (M)



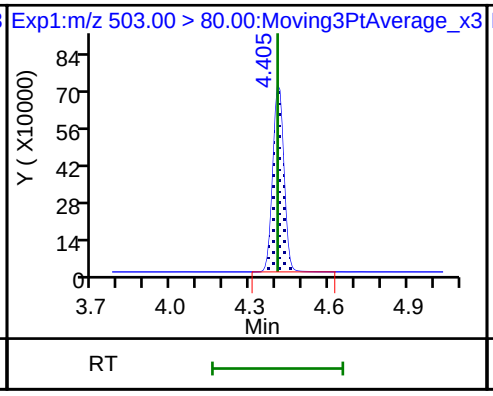
22 Perfluorooctanoic acid (M)



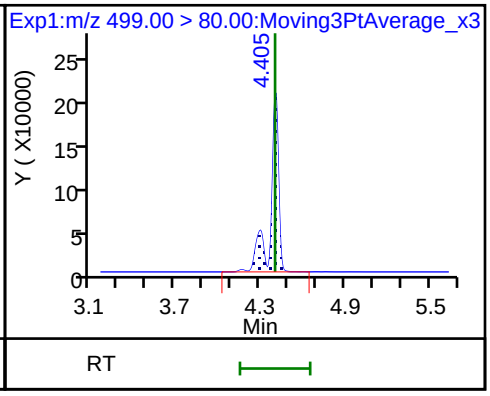
$ 28 13C8 PFOS



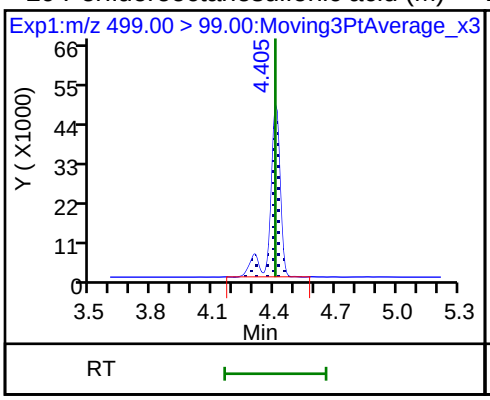
D 27 13C4 PFOS



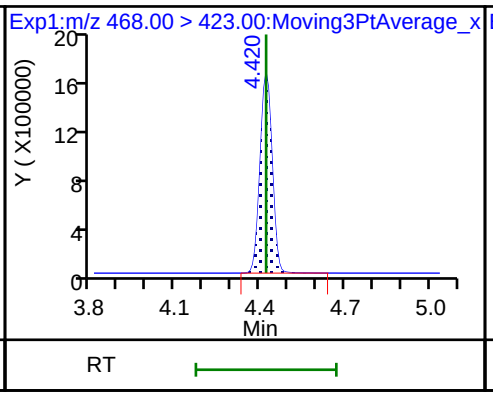
29 Perfluorooctanesulfonic acid



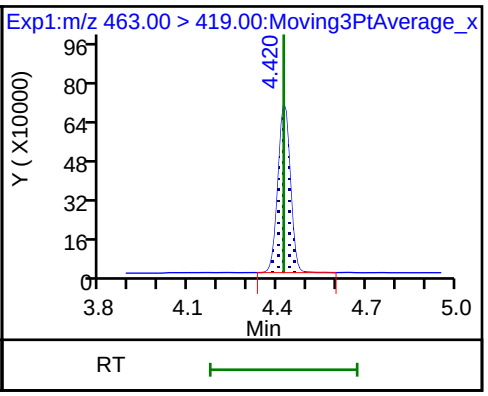
29 Perfluorooctanesulfonic acid (M)



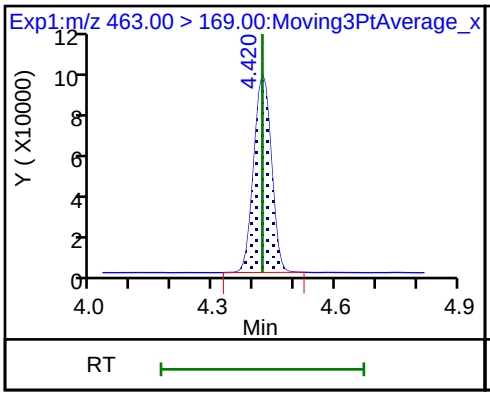
D 30 13C5 PFNA



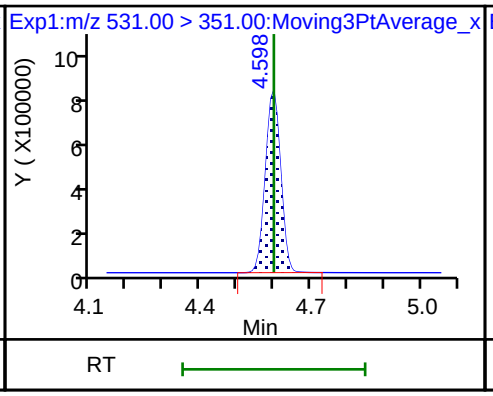
31 Perfluorononanoic acid



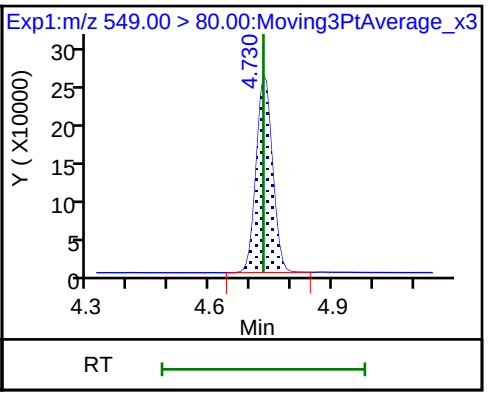
31 Perfluorononanoic acid



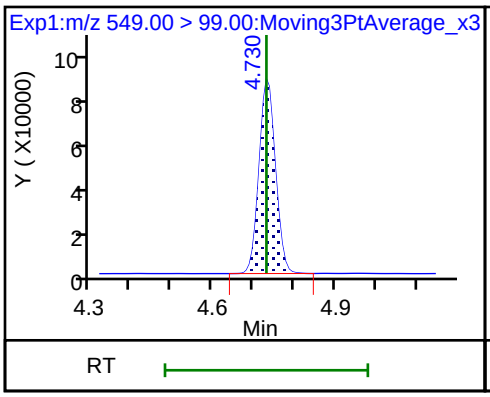
32 9-Chlorohexadecafluoro-3-oxanona



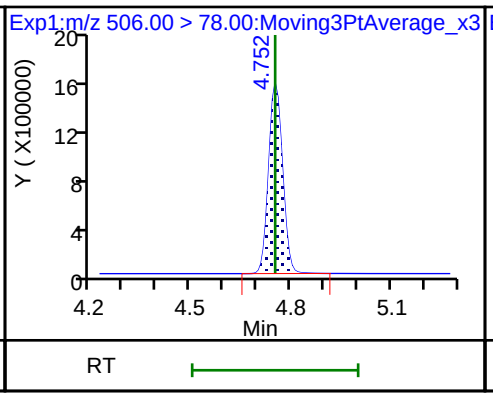
35 Perfluorononanesulfonic acid



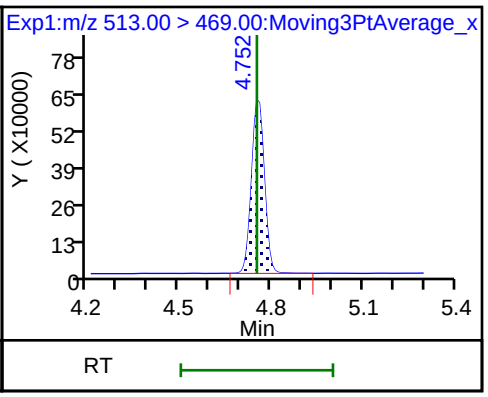
35 Perfluorononanesulfonic acid



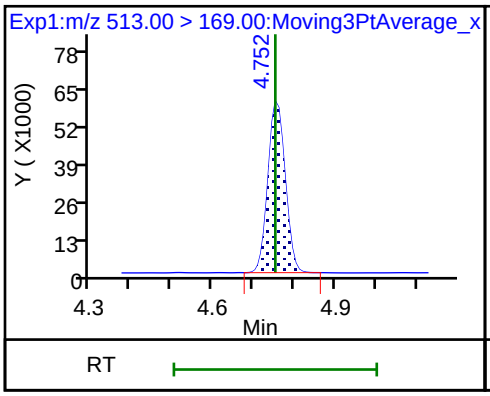
D 33 13C8 FOSA



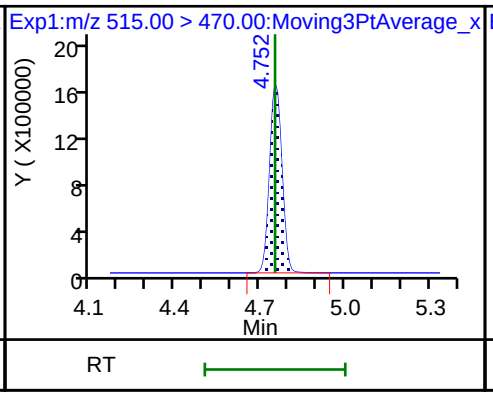
37 Perfluorodecanoic acid



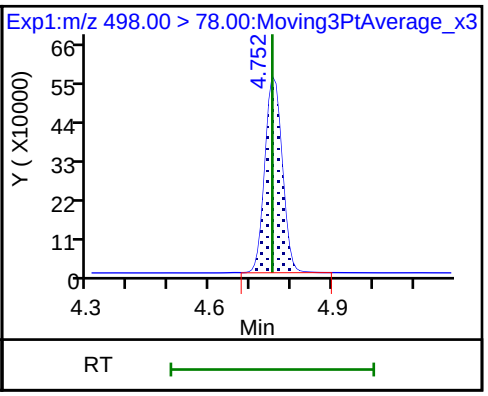
37 Perfluorodecanoic acid



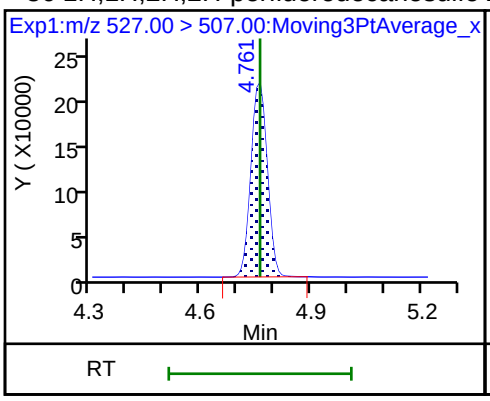
D 39 13C2 PFDA



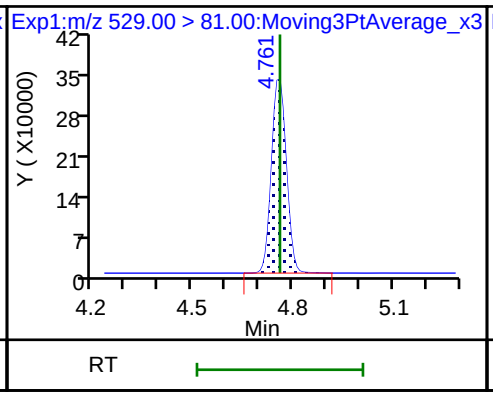
34 Perfluorooctanesulfonamide



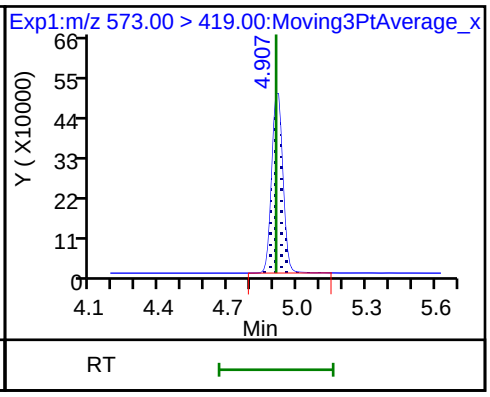
36 1H,1H,2H,2H-perfluorodecanesulfo



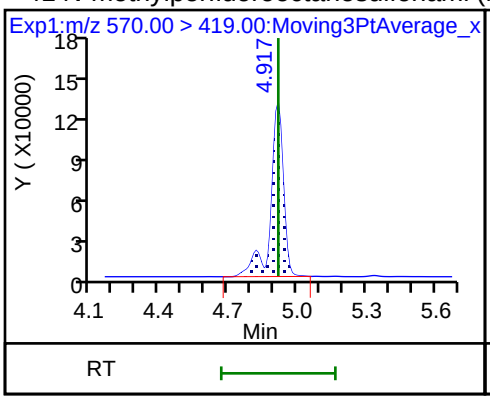
D 38 M2-8:2 FTS



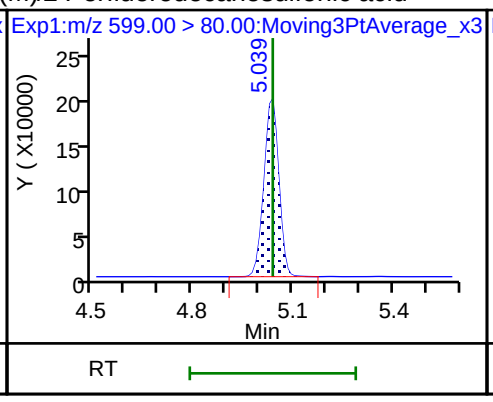
D 40 d3-NMeFOSAA



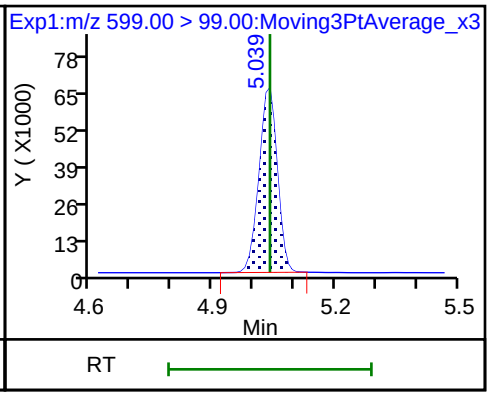
41 N-methylperfluorooctanesulfonami (M)



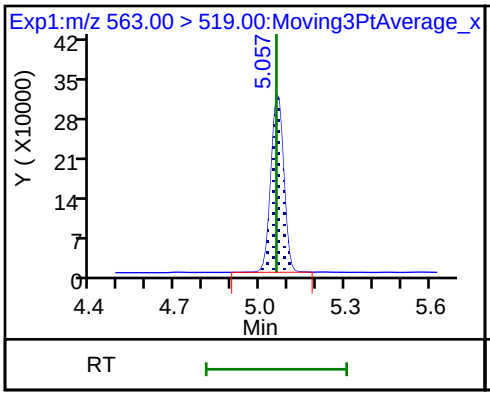
42 Perfluorodecanesulfonic acid



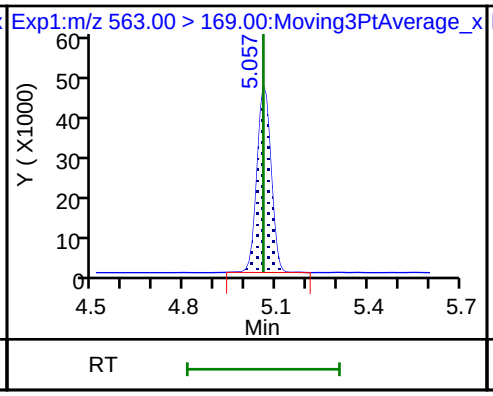
42 Perfluorodecanesulfonic acid



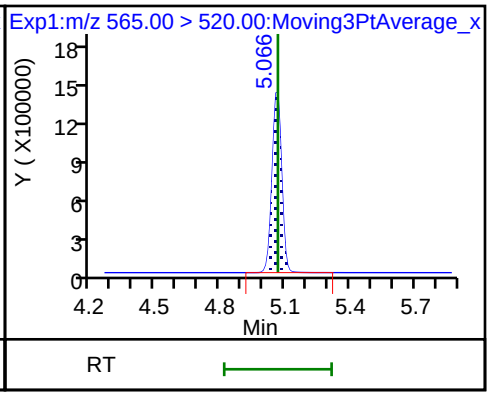
45 Perfluoroundecanoic acid



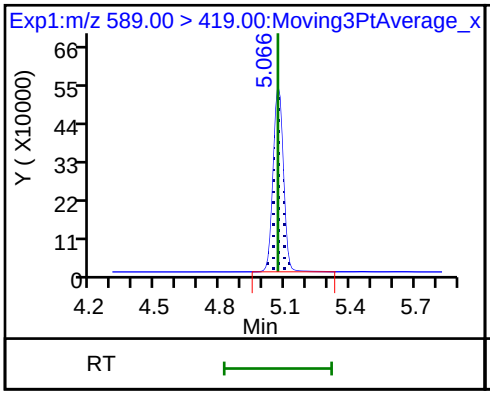
45 Perfluoroundecanoic acid



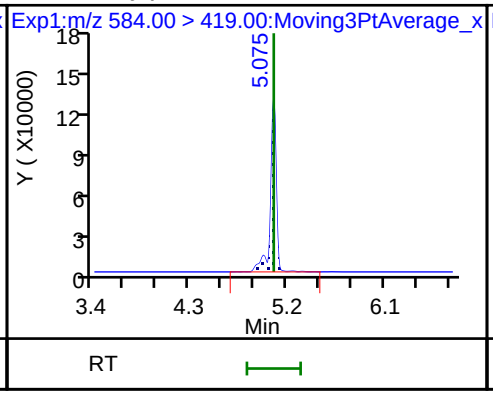
D 43 13C2 PFUnA



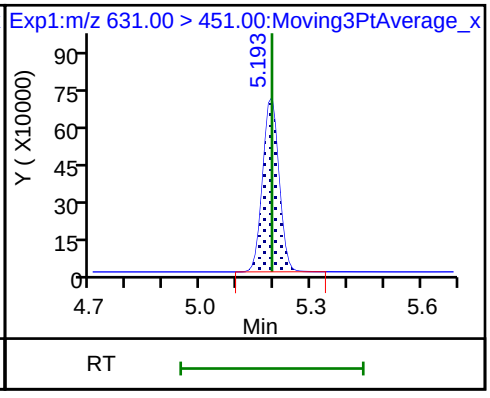
D 44 d5-NEtFOSAA



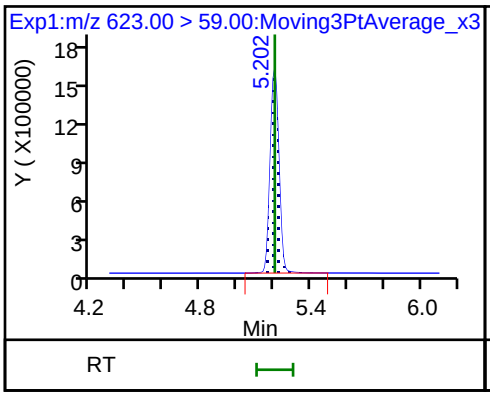
46 N-ethylperfluorooctanesulfonamid



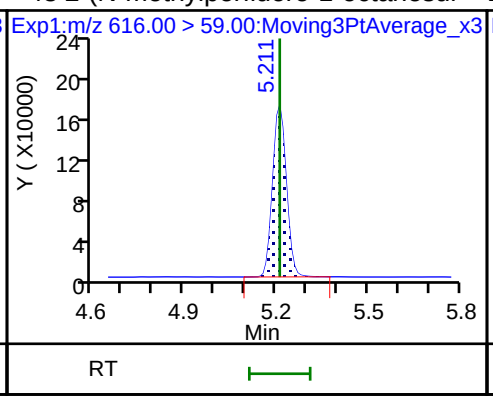
51 11-Chloroeicosafluoro-3-oxaundec



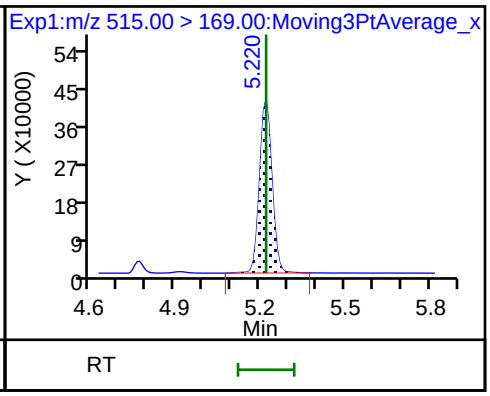
D 47 d7-N-MeFOSE-M



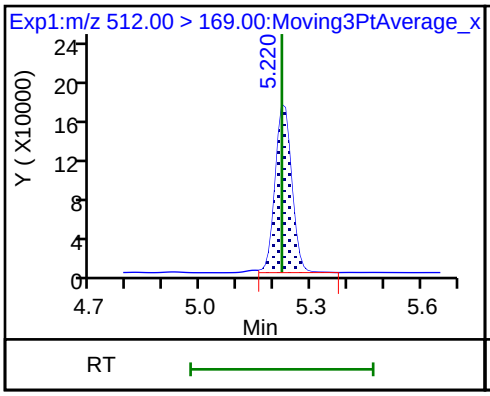
48 2-(N-methylperfluoro-1-octanesul



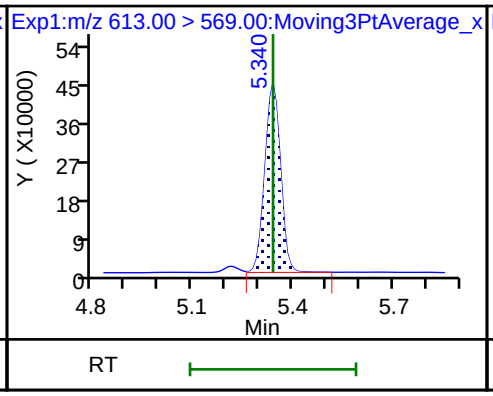
D 49 d-N-MeFOSA-M



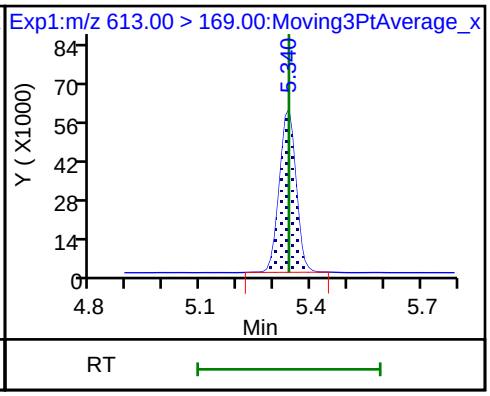
50 NMeFOSA



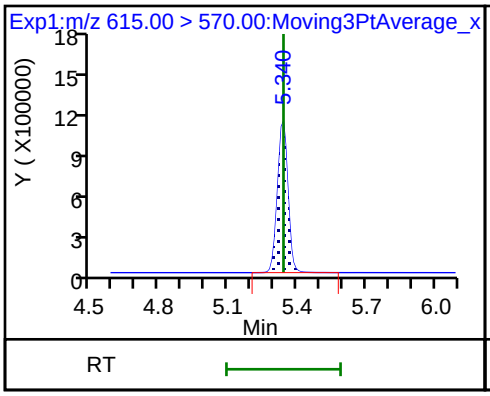
57 Perfluorododecanoic acid



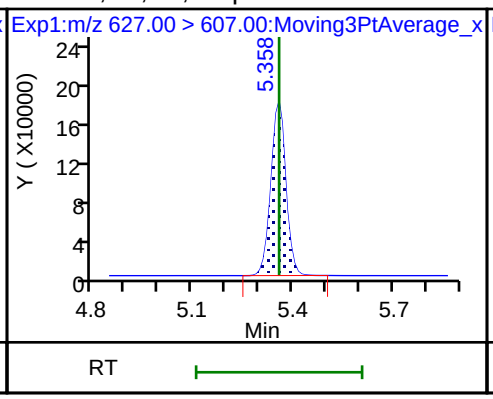
57 Perfluorododecanoic acid



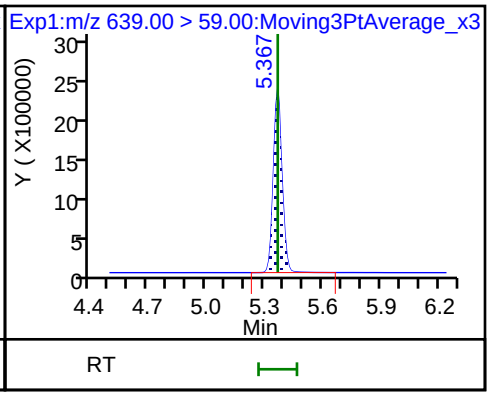
D 56 13C2 PFDoA



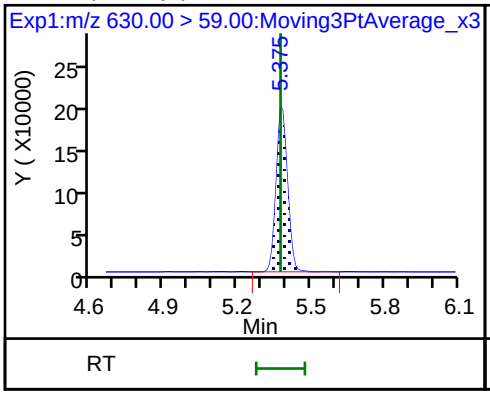
58 1H,1H,2H,2H-perfluorododecanesul



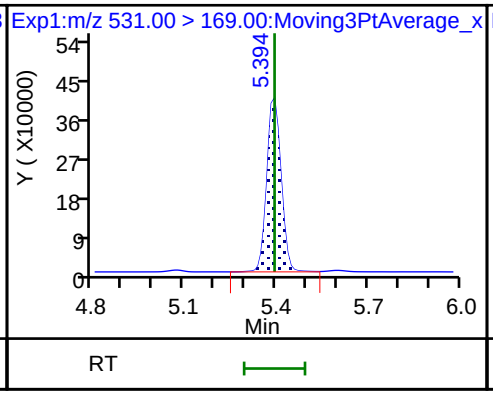
D 52 d9-N-EtFOSE-M



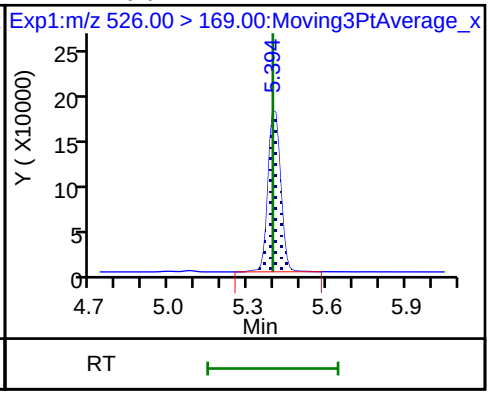
53 2-(N-ethylperfluoro-1-octanesulf



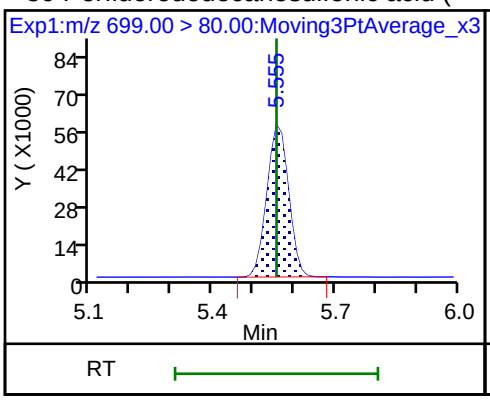
D 54 d-N-EtFOSA-M



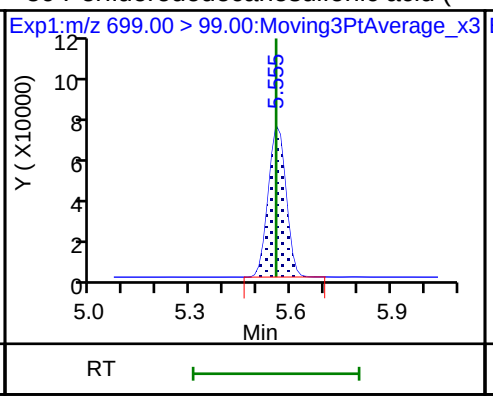
55 N-ethylperfluoro-1-octanesulfona



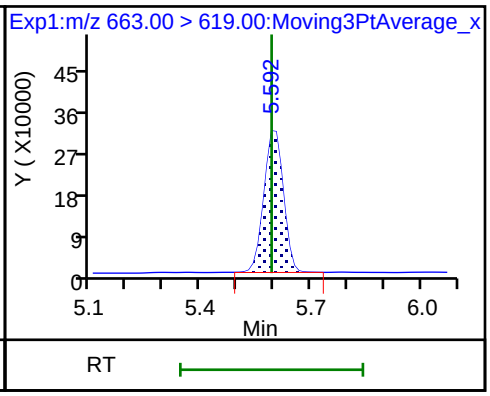
59 Perfluorododecanesulfonic acid (



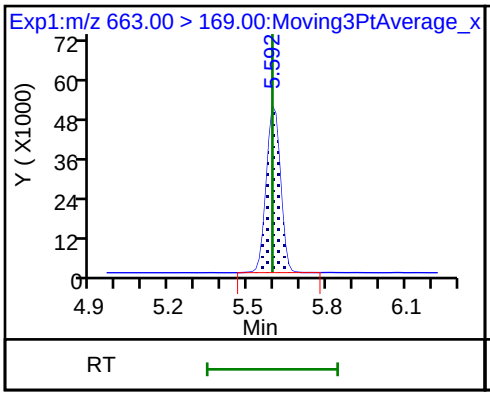
59 Perfluorododecanesulfonic acid (



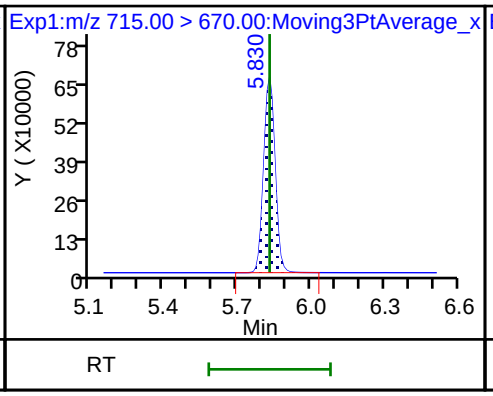
60 Perfluorotridecanoic acid



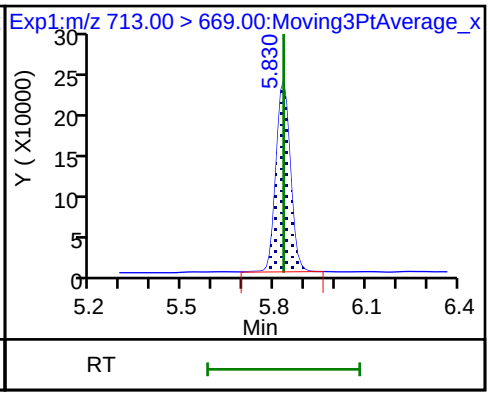
60 Perfluorotridecanoic acid



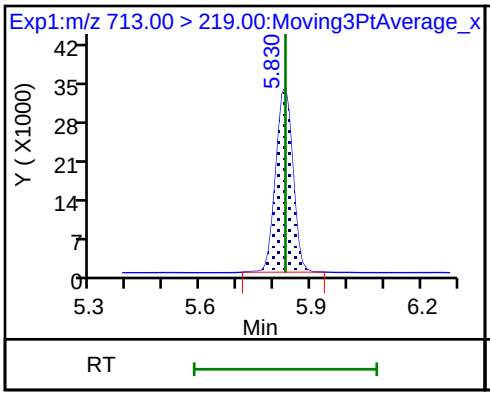
D 61 13C2 PFTeDA



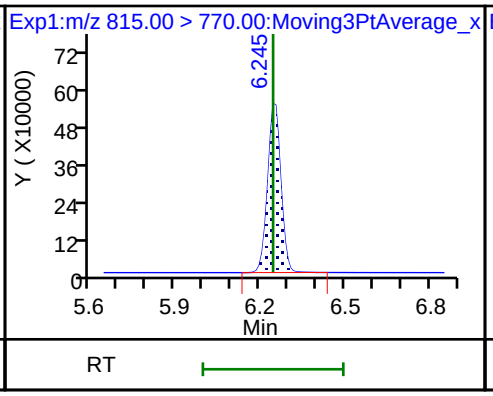
62 Perfluorotetradecanoic acid



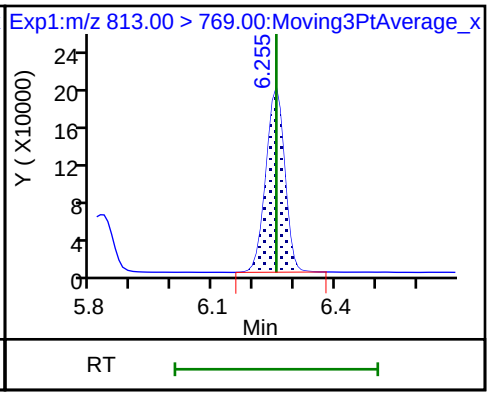
62 Perfluorotetradecanoic acid



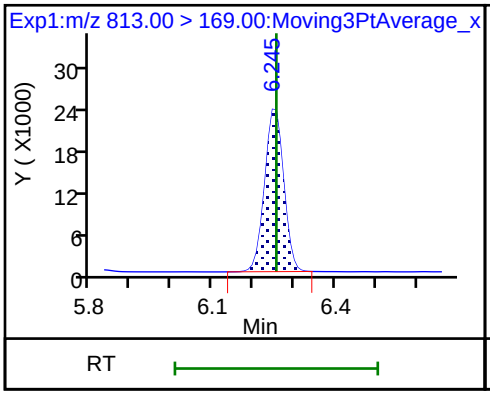
D 64 13C2 PFHxDA



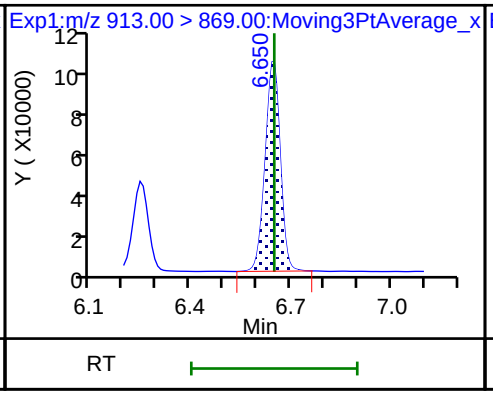
63 Perfluorohexadecanoic acid



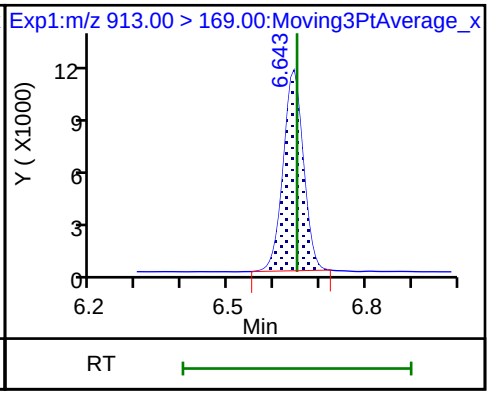
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

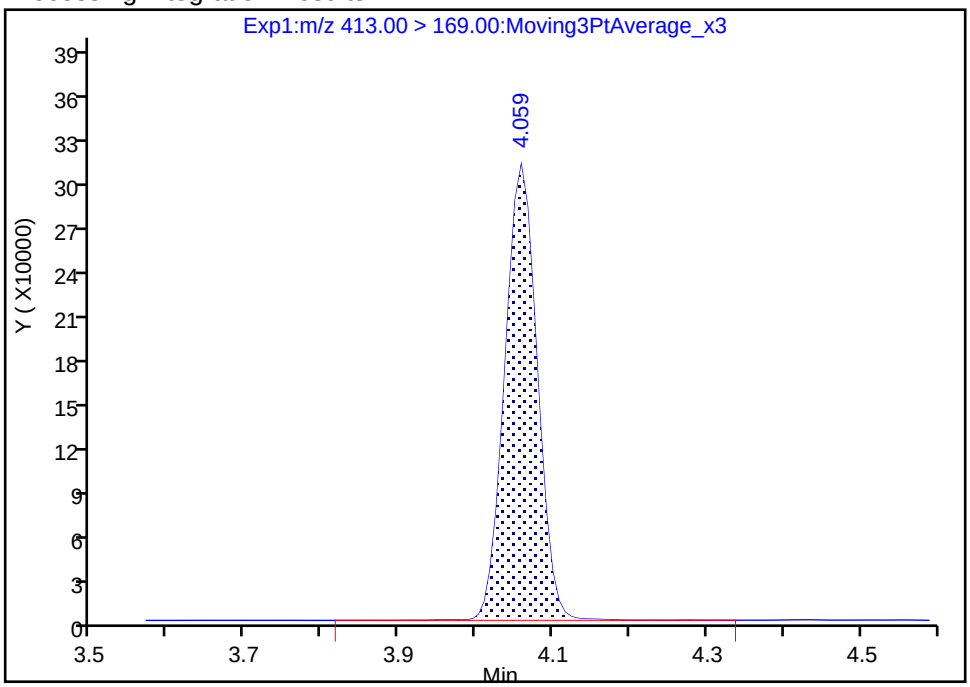
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_006.d				
Injection Date:	05-Jun-2020 00:45:20	Instrument ID:	A15		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	52	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

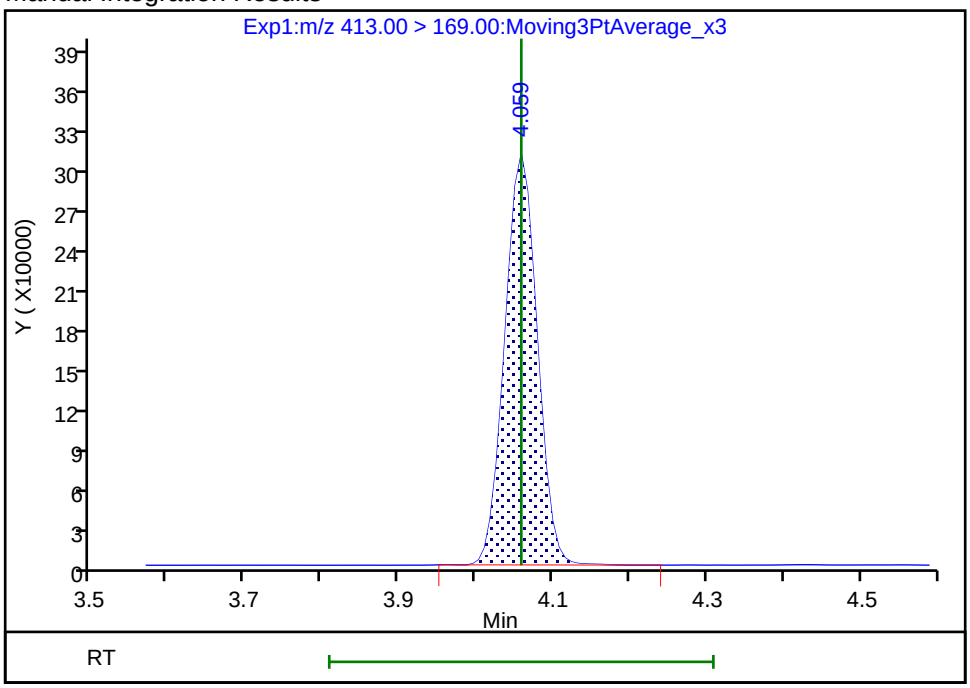
Processing Integration Results

RT: 4.06
Area: 906538
Amount: 1.012508
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 903056
Amount: 0.932265
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 08:00:01
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

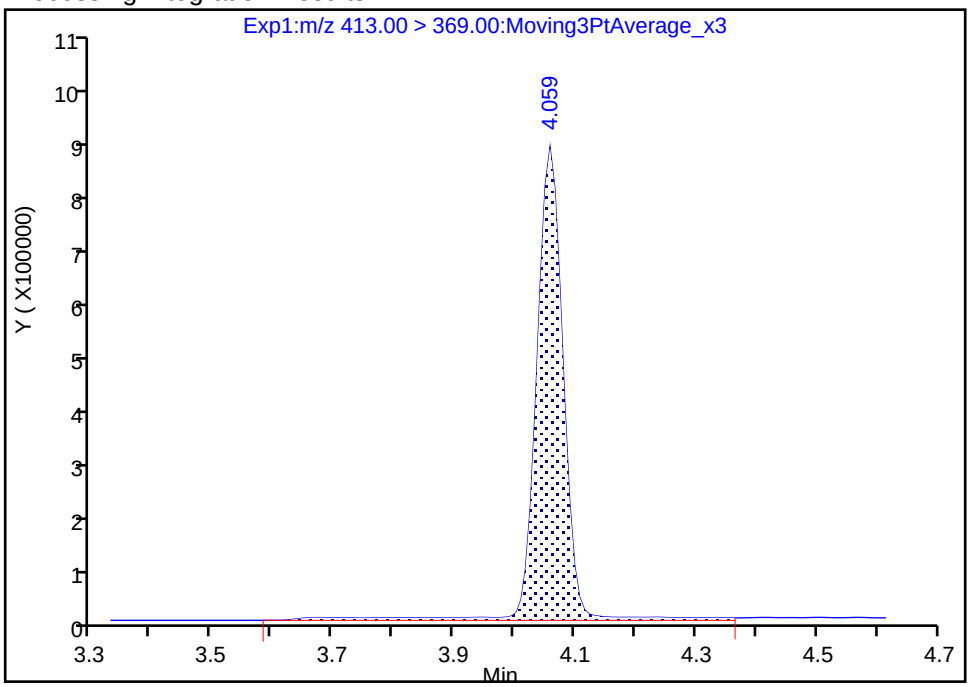
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_006.d
Injection Date: 05-Jun-2020 00:45:20 Instrument ID: A15
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

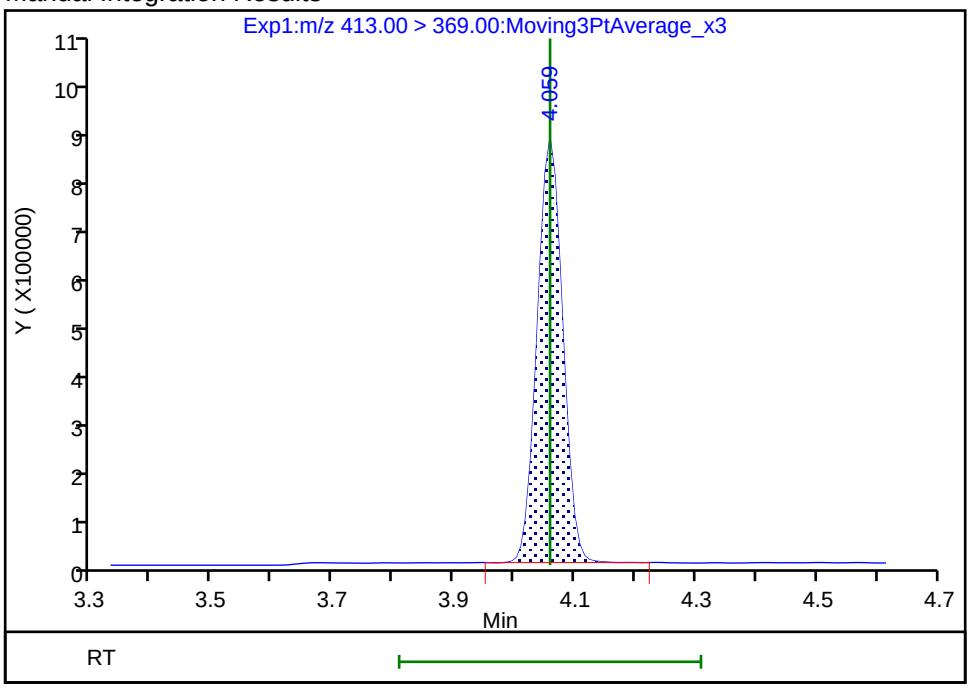
Processing Integration Results

RT: 4.06
Area: 2757083
Amount: 1.012508
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 2538579
Amount: 0.932265
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 08:00:07
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

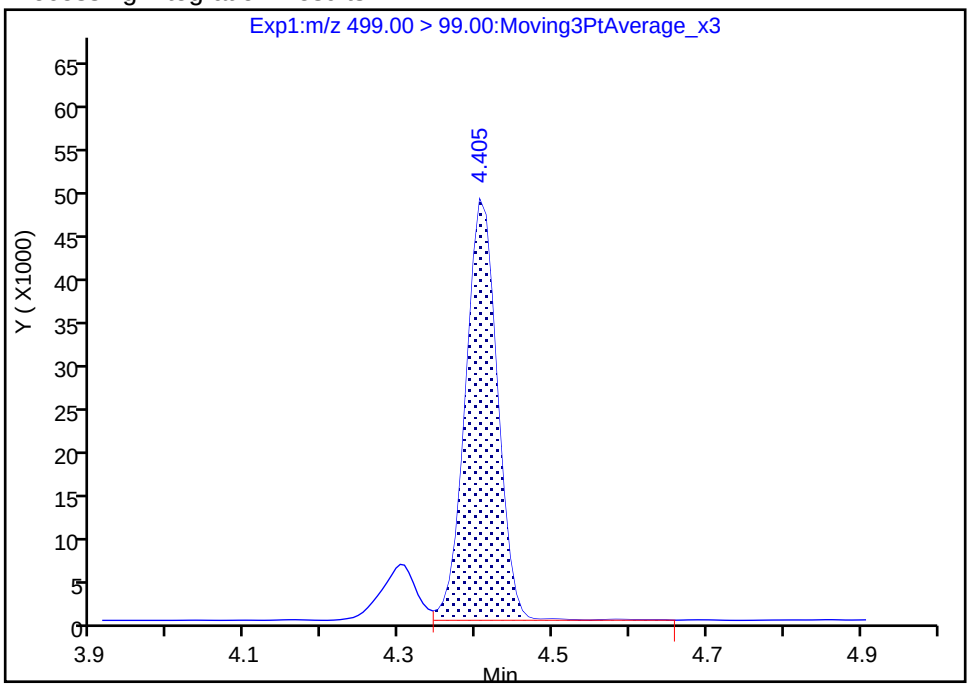
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_006.d
Injection Date: 05-Jun-2020 00:45:20 Instrument ID: A15
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

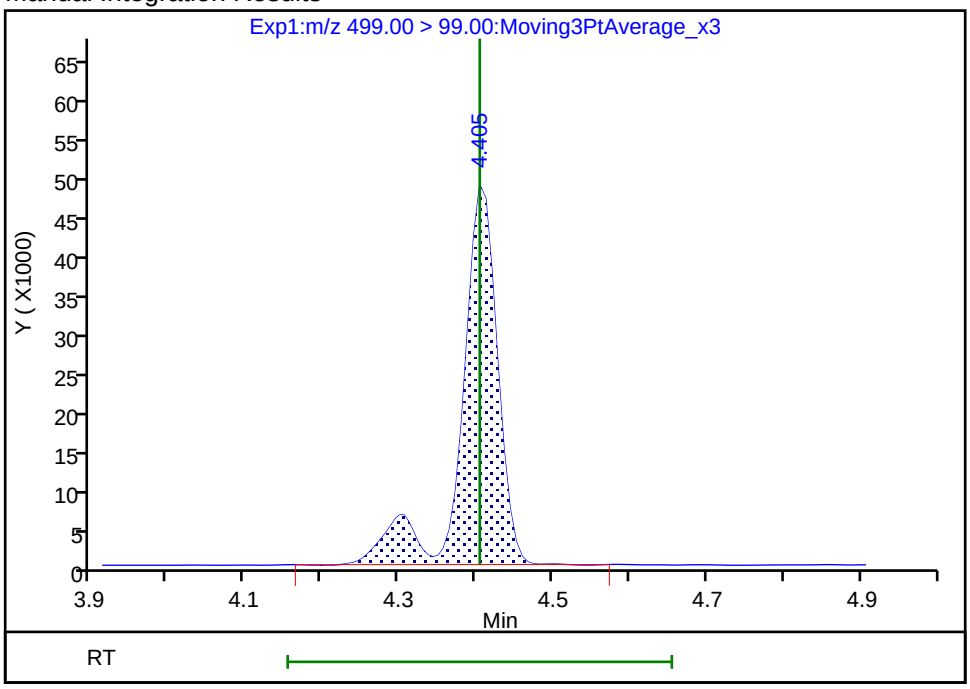
Processing Integration Results

RT: 4.40
Area: 139543
Amount: 0.931799
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 157832
Amount: 0.931799
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 08:00:16
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento

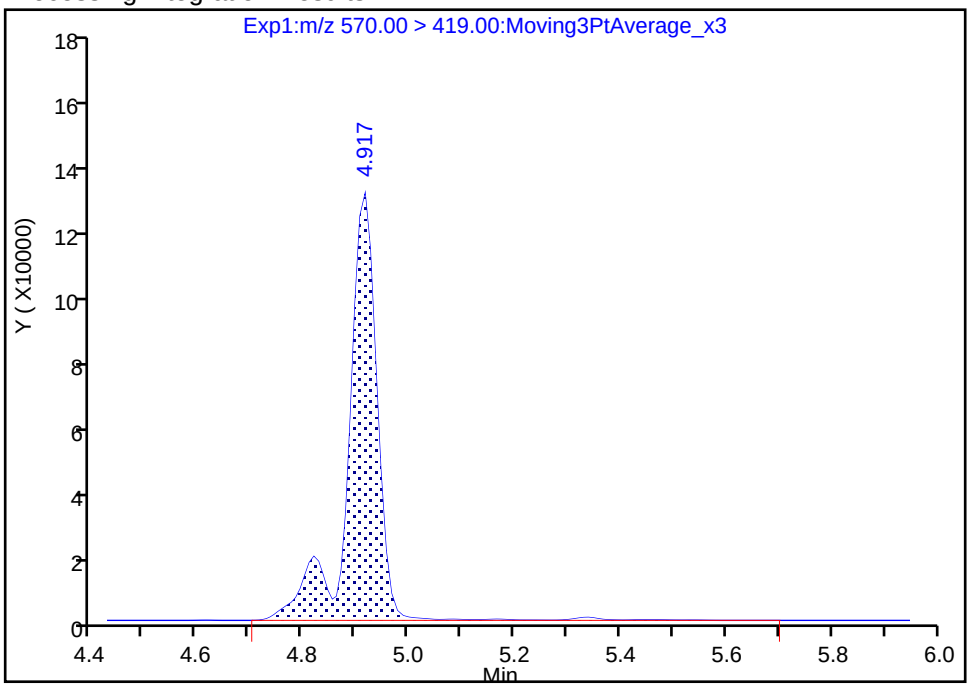
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97045.b\2020.06.04_A15_PFC_B_006.d
Injection Date: 05-Jun-2020 00:45:20 Instrument ID: A15
Lims ID: CCV L4
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

41 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

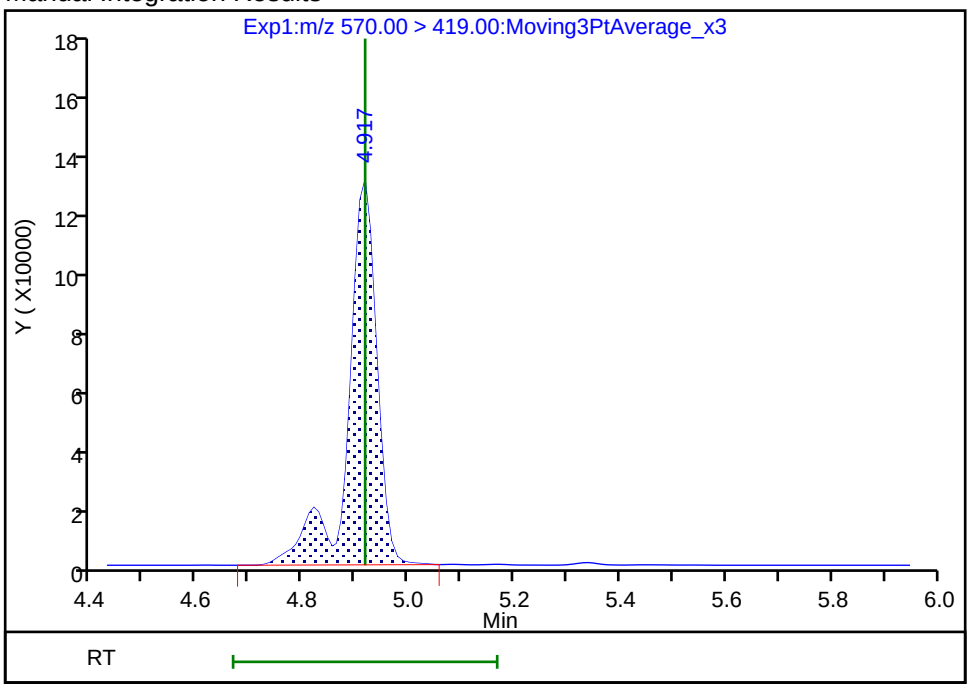
Processing Integration Results

RT: 4.92
Area: 495966
Amount: 1.036032
Amount Units: ng/ml



Manual Integration Results

RT: 4.92
Area: 487575
Amount: 1.018504
Amount Units: ng/ml



Reviewer: sorndeek, 08-Jun-2020 08:00:31
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-383803/1 Calibration Date: 06/05/2020 05:46

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_B_039.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.9260	0.9416		2.54	2.50	1.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.007	1.009		2.50	2.50	0.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9749	0.9691		2.20	2.21	-0.6	50.0
4:2 FTS	AveID	2.255	2.453		2.54	2.34	8.7	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9375	0.9389		2.50	2.50	0.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7335	0.7446		2.38	2.35	1.5	50.0
HFPO-DA (GenX)	AveID	0.9134	0.9669		2.65	2.50	5.9	40.0
Perfluoroheptanoic acid	AveID	1.011	1.061		2.62	2.50	5.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.123	1.088		2.20	2.28	-3.1	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	7.331	7.462		2.40	2.36	1.8	50.0
6:2 FTS	AveID	1.966	2.035		2.45	2.37	3.5	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.091	1.175		2.56	2.38	7.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.057	1.029		2.43	2.50	-2.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9894	0.996		2.34	2.32	0.7	40.0
Perfluorononanoic acid (PFNA)	AveID	1.014	1.035		2.55	2.50	2.0	40.0
F-53B Major	AveID	2.729	2.823		2.41	2.33	3.4	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7987	0.8142		2.45	2.40	1.9	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9658	1.065		2.76	2.50	10.3	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.8783	0.9163		2.61	2.50	4.3	40.0
8:2 FTS	AveID	1.631	1.700		2.50	2.40	4.2	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7297	0.7286		2.50	2.50	-0.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7009	0.7139		2.45	2.41	1.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7214	0.7415		2.57	2.50	2.8	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.7067	0.6730		2.38	2.50	-4.8	40.0
F-53B Minor	AveID	2.579	2.605		2.38	2.36	1.0	50.0
NMeFOSE	AveID	1.047	0.9590		2.29	2.50	-8.4	40.0
NMeFOSA	AveID	0.9416	1.049		2.79	2.50	11.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9816	0.9742		2.48	2.50	-0.7	40.0
10:2 FTS	AveID	1.287	1.383		2.59	2.41	7.5	50.0
NEtFOSE	AveID	1.024	1.013		2.47	2.50	-1.0	40.0
NEtFOSA	AveID	1.002	1.144		2.85	2.50	14.2	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2435	0.2513		2.50	2.42	3.2	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-383803/1 Calibration Date: 06/05/2020 05:46

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_B_039.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7891	0.8196		2.60	2.50	3.9	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.000	1.087		2.72	2.50	8.7	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8423		2.45	2.50	-2.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4920	0.4587		2.33	2.50	-6.8	50.0
13C4 PFBA	Ave	1.583	1.498		2.37	2.50	-5.3	50.0
13C5 PFPeA	Ave	1.414	1.343		2.37	2.50	-5.0	50.0
13C3 PFBS	Ave	0.9803	0.9593		2.28	2.33	-2.1	50.0
M2-4:2 FTS	Ave	0.1305	0.1121		2.01	2.34	-14.1	50.0
13C2 PFHxA	Ave	1.374	1.345		2.45	2.50	-2.1	50.0
13C3 HFPO-DA	Ave	0.3145	0.3113		2.47	2.50	-1.0	50.0
13C4 PFHpA	Ave	1.090	1.055		2.42	2.50	-3.2	50.0
18O2 PFHxS	Ave	0.4715	0.4563		2.29	2.37	-3.2	50.0
M2-6:2 FTS	Ave	0.1440	0.1276		2.10	2.38	-11.4	50.0
13C4 PFOA	Ave	0.9856	0.9602		2.44	2.50	-2.6	50.0
13C4 PFOS	Ave	0.3660	0.3562		2.33	2.39	-2.7	50.0
13C5 PFNA	Ave	0.7544	0.7497		2.48	2.50	-0.6	50.0
13C2 PFDA	Ave	0.7192	0.6590		2.29	2.50	-8.4	50.0
13C8 FOSA	Ave	0.7278	0.6683		2.30	2.50	-8.2	50.0
M2-8:2 FTS	Ave	0.1717	0.1456		2.03	2.40	-15.2	50.0
d3-NMeFOSAA	Ave	0.2685	0.2462		2.29	2.50	-8.3	50.0
13C2 PFUnA	Ave	0.6132	0.5905		2.41	2.50	-3.7	50.0
d5-NEtFOSAA	Ave	0.2733	0.2555		2.34	2.50	-6.5	50.0
d7-N-MeFOSE-M	Ave	0.1833	0.1811		12.3	12.5	-1.2	50.0
d-N-MeFOSA-M	Ave	0.2300	0.2162		2.35	2.50	-6.0	50.0
13C2 PFDoA	Ave	0.5432	0.5380		2.48	2.50	-1.0	50.0
d9-N-EtFOSE-M	Ave	0.2246	0.2149		12.0	12.5	-4.3	50.0
d-N-EtFOSA-M	Ave	0.2334	0.1996		2.14	2.50	-14.5	50.0
13C2 PFTeDA	Ave	0.3551	0.3283		2.31	2.50	-7.6	50.0
13C2 PFHxDA	Ave	0.2944	0.2727		2.32	2.50	-7.4	50.0
13C8 PFOA	Ave	0.6050	0.5813		2.35	2.45	-3.9	50.0
13C8 PFOS	Ave	0.1244	0.1181		2.27	2.39	-5.1	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 05-Jun-2020 05:46:23 ALS Bottle#: 53 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 09:40:23 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: ruangyotsakuld Date: 08-Jun-2020 09:40:22
Ratio Calibration: Average of Initial Calibration

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	2.538	2.549	-0.011	0.627	9196238	2.37		94.7	14874	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.538	2.557	-0.019	1.000	8659316	2.54		102	2199	
D 4 13C5 PFPeA										
267.90 > 223.00	2.886	2.899	-0.013	0.713	8242806	2.37		95.0	12414	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.886	2.899	-0.013	1.000	8314221	2.50		100	511	
D 9 13C3 PFBS										
301.90 > 80.00	2.917	2.940	-0.023	0.721	5475372	2.28		97.9	11305	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.927	2.940	-0.013	1.004	5043900	2.20	Target=2.14	99.4	1989	
298.90 > 99.00	2.917	2.940	-0.023	1.000	2374410		2.12(1.07-3.21)		1396	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.212	3.231	-0.019	0.794	642348	2.01		85.9	1206	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.212	3.231	-0.019	1.000	1575375	2.54		109	12370	
D 11 13C2 PFHxA										
315.00 > 270.00	3.255	3.278	-0.023	0.804	8257796	2.45		97.9	14565	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.255	3.278	-0.023	1.000	7753111	2.50	Target=15.73	100	2002	
313.00 > 119.00	3.255	3.278	-0.023	1.000	506243		15.31(7.86-23.59)		703	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.275	3.288	-0.013	1.123	4111738	2.38	Target=2.69	102	9895	
349.00 > 99.00	3.275	3.288	-0.013	1.123	1537565		2.67(1.35-4.04)		6046	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.381	3.394	-0.013	0.835	1910786	2.47		99.0	8718	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.381	3.394	-0.013	1.000	1847488	2.65		106	13021	
D 18 13C4 PFHpA										
367.00 > 322.00	3.657	3.672	-0.015	0.904	6476221	2.42		96.8	10927	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.657	3.672	-0.015	1.000	6871281	2.62	Target=3.80	105	2250	
363.00 > 169.00	3.657	3.672	-0.015	1.000	1783484		3.85(1.90-5.71)		7092	
D 17 18O2 PFHxS										
403.00 > 84.00	3.657	3.682	-0.025	0.904	2649096	2.29		96.8	13438	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.657	3.682	-0.025	1.000	2771827	2.20	Target=2.99	96.9	8369	
399.00 > 99.00	3.657	3.682	-0.025	1.000	927776		2.99(1.50-4.49)		3139	
19 DONA										
377.00 > 251.00	3.706	3.721	-0.015	0.842	15367586	2.40	Target=2.14	102	17480	
377.00 > 85.00	3.706	3.721	-0.015	0.842	7397869		2.08(1.07-3.21)		14296	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.031	4.042	-0.011	0.996	743989	2.10		88.6	3556	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.031	4.042	-0.011	1.000	1510949	2.45		104	8728	
$ 26 13C8 PFOA										
421.00 > 376.00	4.047	4.051	-0.004	1.000	3492736	2.35		96.1	8688	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.047	4.051	-0.004	0.919	2445844	2.56	Target=3.77	108	7327	
449.00 > 99.00	4.039	4.051	-0.012	0.917	641774		3.81(1.89-5.66)		3671	
D 25 13C4 PFOA										
417.00 > 372.00	4.047	4.059	-0.012	1.000	5893237	2.44		97.4	11298	
* 23 13C2 PFOA										
415.00 > 370.00	4.047	4.059	-0.012		6137389	2.50			14064	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.047	4.059	-0.012	1.000	6064086	2.43	Target=2.88	97.4	618	
413.00 > 169.00	4.047	4.059	-0.012	1.000	2173761		2.79(1.44-4.31)		36409	
$ 28 13C8 PFOS										
507.00 > 99.00	4.404	4.405	-0.001	1.088	693158	2.27		94.9	3746	
D 27 13C4 PFOS										
503.00 > 80.00	4.404	4.405	-0.001	1.088	2089946	2.33		97.3	7091	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.404	4.405	-0.001	1.000	2020963	2.34	Target=4.89	101	3689	
499.00 > 99.00	4.404	4.405	-0.001	1.000	399529		5.06(2.44-7.33)		2463	M
D 30 13C5 PFNA										
468.00 > 423.00	4.420	4.420	0.0	1.092	4601042	2.48		99.4	10618	
31 Perfluorononanoic acid										
463.00 > 419.00	4.420	4.420	0.0	1.000	4761208	2.55	Target=7.00	102	990	
463.00 > 169.00	4.420	4.420	0.0	1.000	664458		7.17(3.50-10.51)		3106	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.598	4.598	0.0	1.044	5751145	2.41		103	13060	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.735	4.730	0.005	1.075	1708761	2.45	Target=2.77	102	3006	
549.00 > 99.00	4.735	4.730	0.005	1.075	601521		2.84(1.38-4.15)		3755	
D 33 13C8 FOSA										
506.00 > 78.00	4.758	4.752	0.006	1.176	4101314	2.30		91.8	5735	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.758	4.752	0.006	1.000	3758034	2.61		104	3321	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.758	4.752	0.006	1.000	4308374	2.76	Target=10.36	110	1636	
513.00 > 169.00	4.758	4.752	0.006	1.000	415149		10.38(5.18-15.54)		234	
D 39 13C2 PFDA										
515.00 > 470.00	4.758	4.752	0.006	1.176	4044543	2.29		91.6	10395	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.766	4.761	0.005	1.000	1455073	2.50		104	5619	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.766	4.761	0.005	1.178	856105	2.03		84.8	5086	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.914	4.907	0.007	1.214	1511259	2.29		91.7	1958	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.924	4.917	0.007	1.002	1101089	2.50		99.8	7275	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.046	5.039	0.007	1.146	1504391	2.45	Target=2.97	102	4069	
599.00 > 99.00	5.046	5.039	0.007	1.146	505429		2.98(1.49-4.46)		3647	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.064	5.057	0.007	0.998	2686999	2.57	Target=7.56	103	1698	
563.00 > 169.00	5.073	5.057	0.016	1.000	357158		7.52(3.78-11.34)		1930	
D 43 13C2 PFUnA										
565.00 > 520.00	5.073	5.066	0.007	1.254	3623944	2.41		96.3	10151	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.073	5.066	0.007	1.254	1568325	2.34		93.5	1834	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.082	5.075	0.007	1.002	1055542	2.38		95.2	1375	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.200	5.193	0.007	1.181	5365073	2.38		101	8540	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.218	5.202	0.016	1.289	5557602	12.3		98.8	8737	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.218	5.211	0.007	1.000	1065890	2.29		91.6	2895	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.237	5.220	0.017	1.294	1326679	2.35		94.0	169	
50 NMeFOSA										
512.00 > 169.00	5.237	5.220	0.017	1.000	1391667	2.79		111	543	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.347	5.340	0.007	1.000	3216985	2.48	Target=7.18	99.3	569	
613.00 > 169.00	5.347	5.340	0.007	1.000	470236		6.84(3.59-10.76)		4477	
D 56 13C2 PFDoA										
615.00 > 570.00	5.347	5.340	0.007	1.321	3302049	2.48		99.0	10682	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.366	5.358	0.008	1.126	1191313	2.59		107	5969	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.381	5.367	0.014	1.330	6593699	12.0		95.7	7645	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.392	5.375	0.017	1.002	1336217	2.47		99.0	2992	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.403	5.394	0.009	1.335	1225118	2.14		85.5	370	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.414	5.394	0.020	1.002	1401413	2.85		114	748	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.566	5.555	0.011	1.264	531849	2.50	Target=0.79	103	4762	
699.00 > 99.00	5.566	5.555	0.011	1.264	611550		0.87(0.39-1.18)		4287	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.603	5.592	0.011	1.048	2706186	2.60	Target=6.63	104	611	
663.00 > 169.00	5.603	5.592	0.011	1.048	370593		7.30(3.32-9.95)		2569	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.848	5.830	0.018	1.445	2014692	2.31		92.4	5862	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.839	5.830	0.009	0.998	2189597	2.72	Target=8.46	109	634	
713.00 > 219.00	5.839	5.830	0.009	0.998	271124		8.08(4.23-12.69)		4203	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.263	6.245	0.017	1.547	1673726	2.32		92.6	4628	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.263	6.255	0.007	1.000	1409721	2.45	Target=7.92	98.0	202	
813.00 > 169.00	6.254	6.255	-0.001	0.999	187197		7.53(3.96-11.88)		1985	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.651	6.650	0.001	1.062	767670	2.33	Target=10.24	93.2	144	
913.00 > 169.00	6.644	6.650	-0.006	1.061	74823		10.26(5.12-15.36)		1026	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00027 Amount Added: 1.00 Units: mL

Report Date: 08-Jun-2020 09:40:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

Injection Date: 05-Jun-2020 05:46:23 Instrument ID: A15

Lims ID: CCV L5

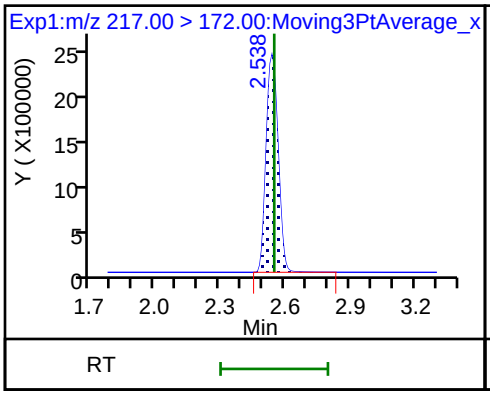
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 53 Worklist Smp#: 1

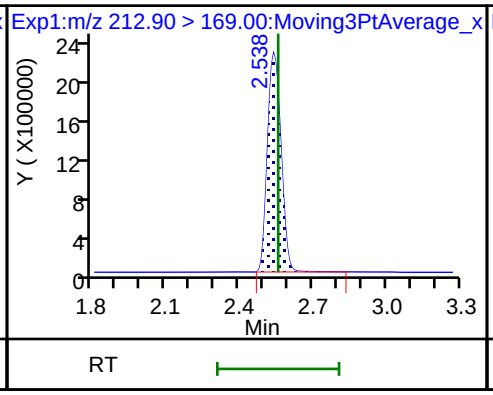
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

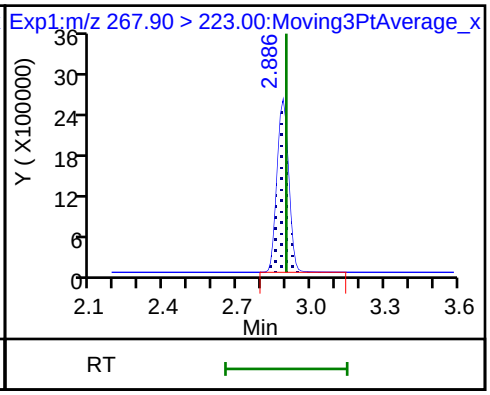
D 1 13C4 PFBA



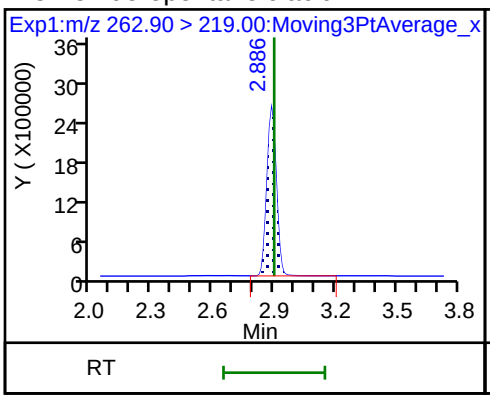
2 Perfluorobutanoic acid



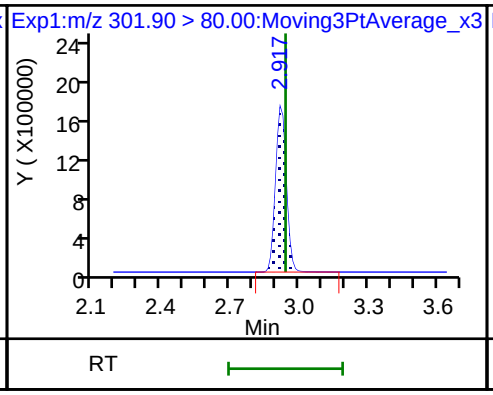
D 4 13C5 PFPeA



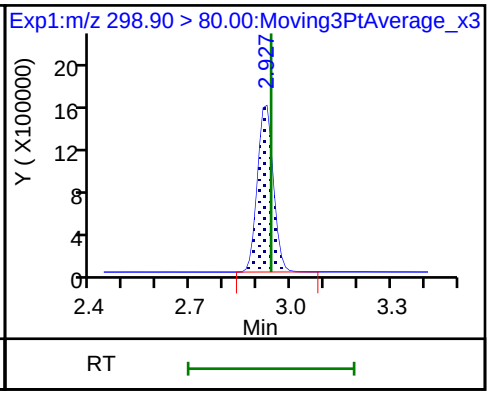
5 Perfluoropentanoic acid



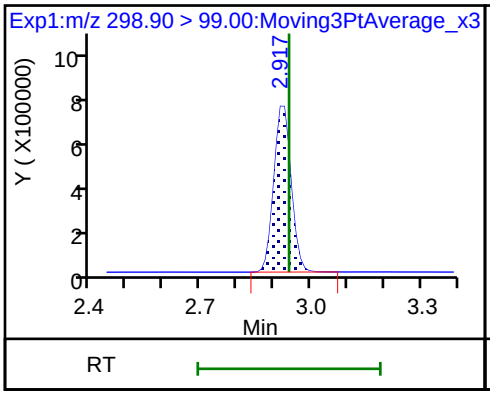
D 9 13C3 PFBS



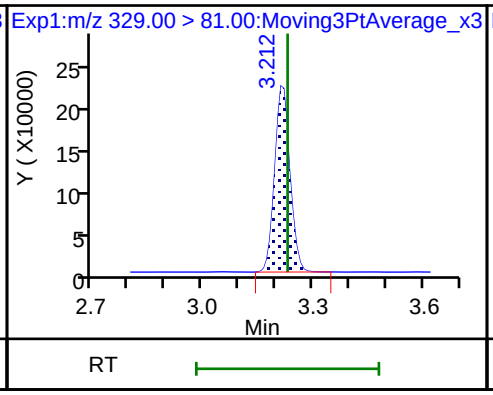
6 Perfluorobutanesulfonic acid



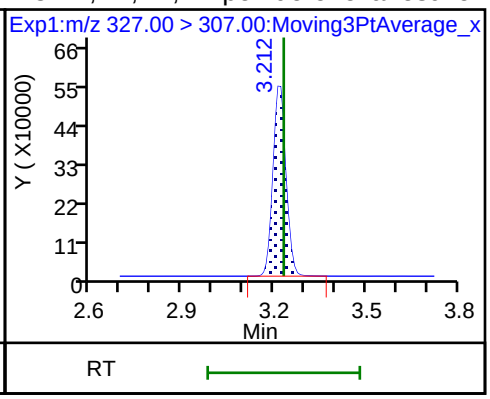
6 Perfluorobutanesulfonic acid



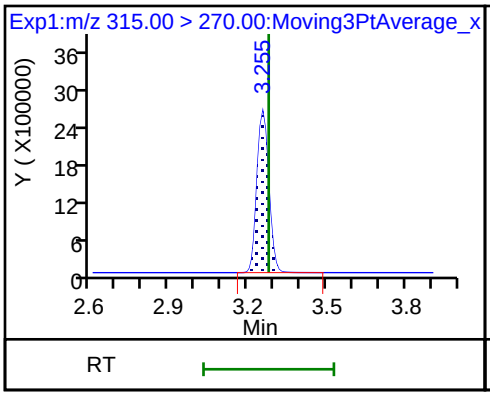
D 7 M2-4:2 FTS



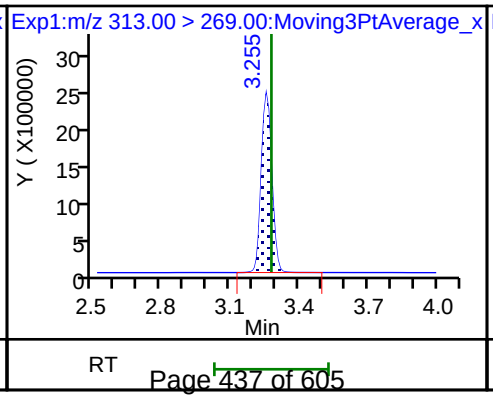
8 1H,1H,2H,2H-perfluorohexanesulfo



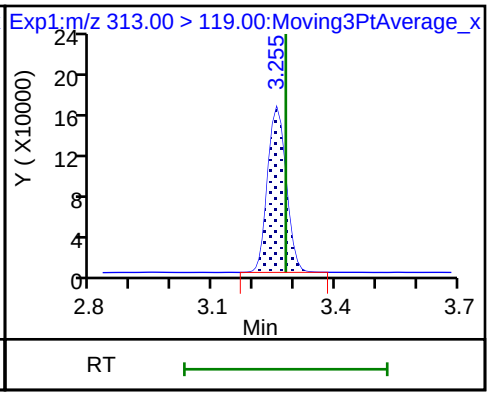
D 11 13C2 PFHxA



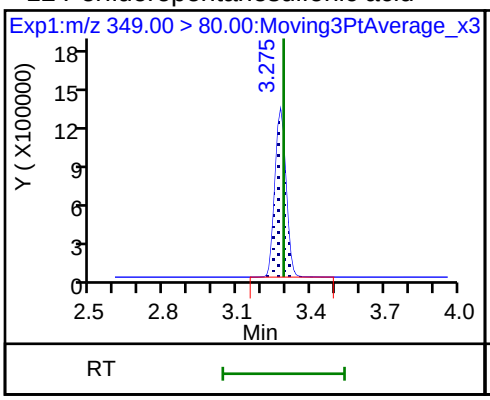
10 Perfluorohexanoic acid



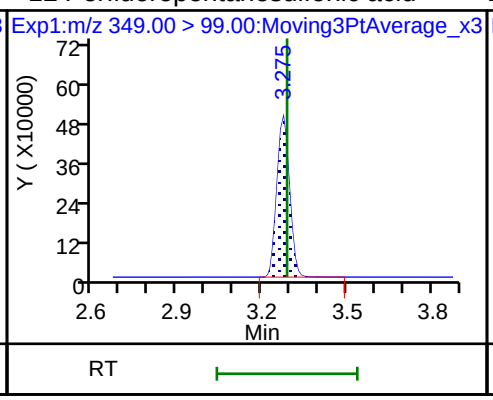
10 Perfluorohexanoic acid



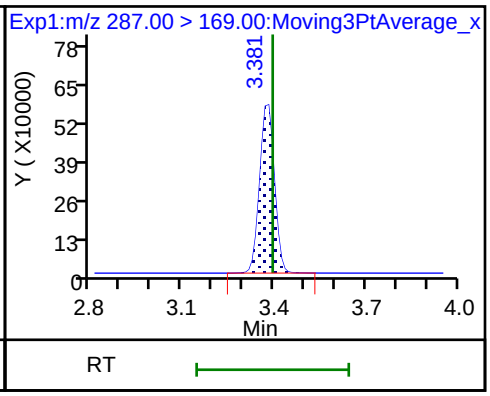
12 Perfluoropentanesulfonic acid



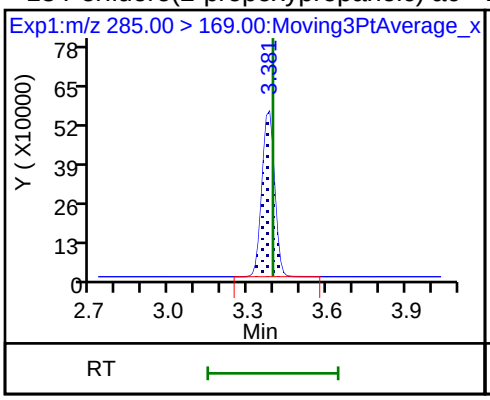
12 Perfluoropentanesulfonic acid



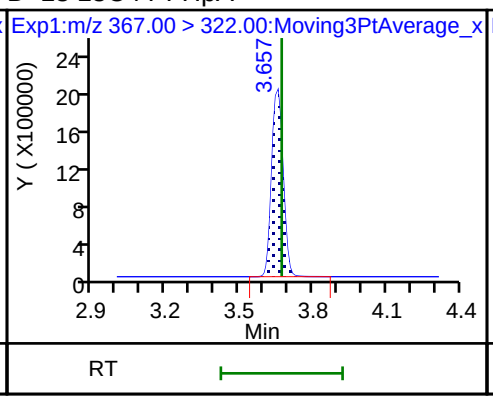
D 14 13C3 HFPO-DA



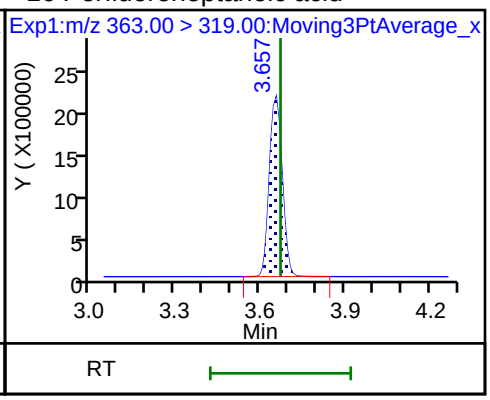
13 Perfluoro(2-propoxypropanoic) ac



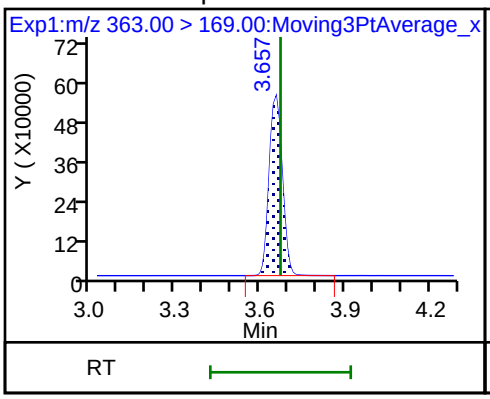
D 18 13C4 PFHpA



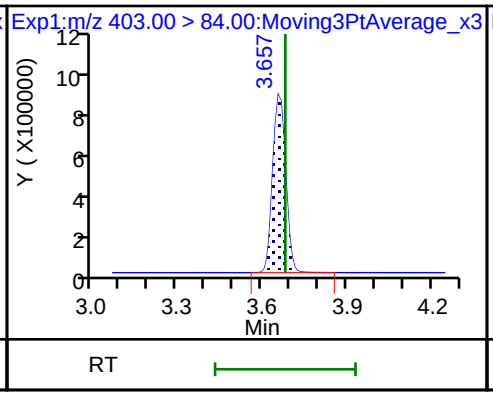
16 Perfluoroheptanoic acid



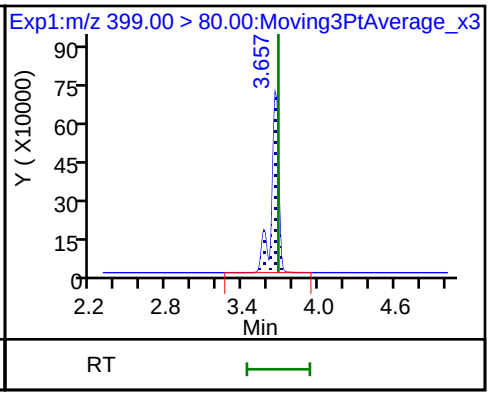
16 Perfluoroheptanoic acid



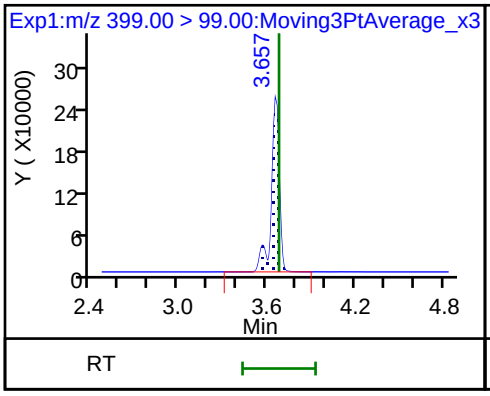
D 17 18O2 PFHxS



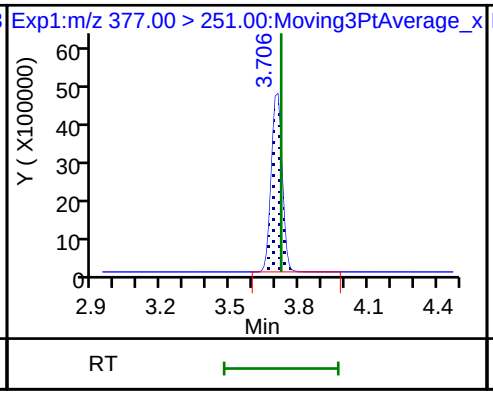
15 Perfluorohexanesulfonic acid



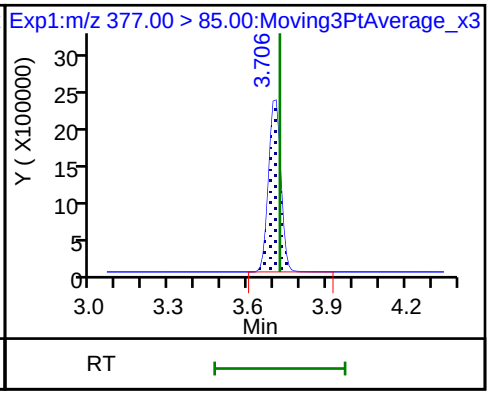
15 Perfluorohexanesulfonic acid



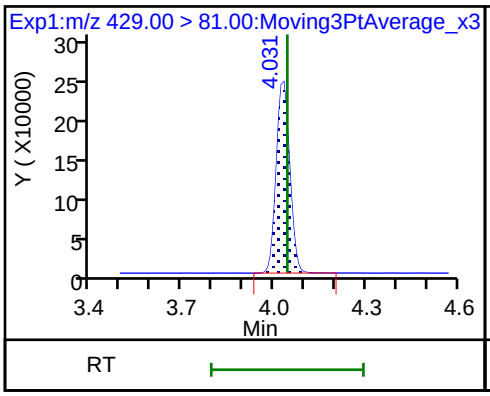
19 DONA



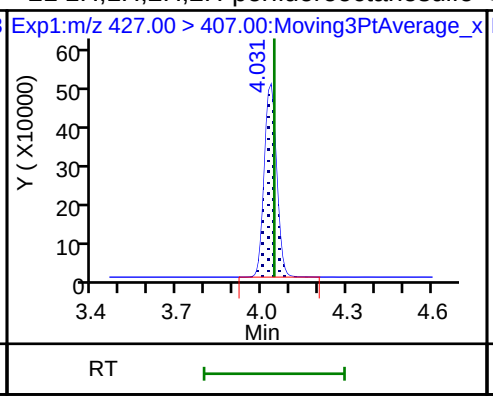
19 DONA



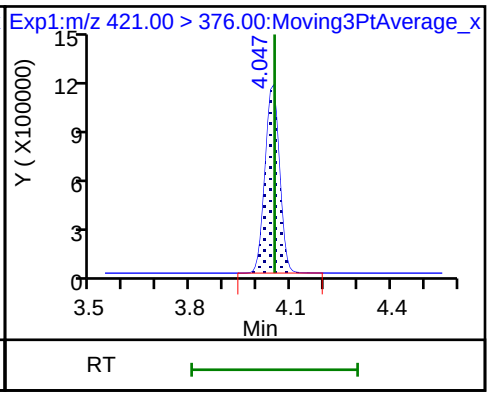
D 20 M2-6:2 FTS



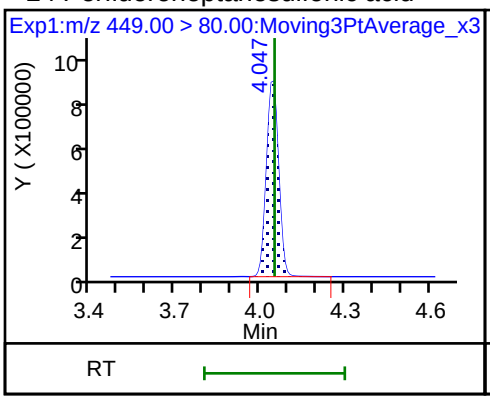
21 1H,1H,2H,2H-perfluorooctanesulfo



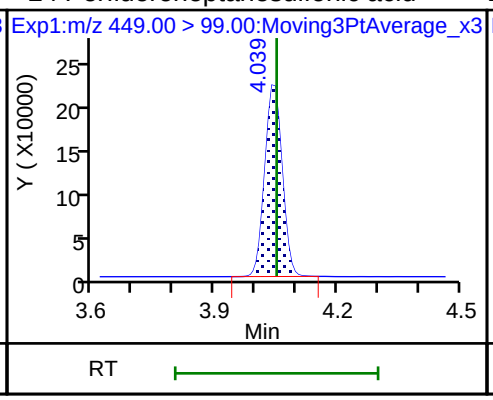
$ 26 13C8 PFOA



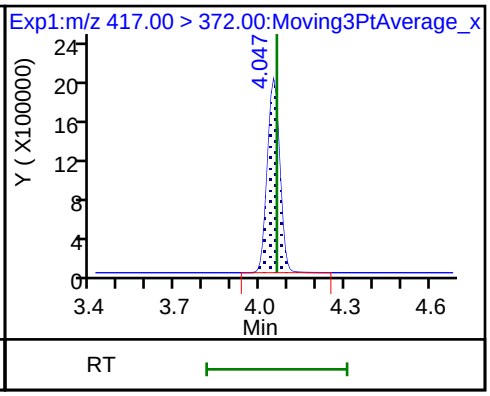
24 Perfluoroheptanesulfonic acid



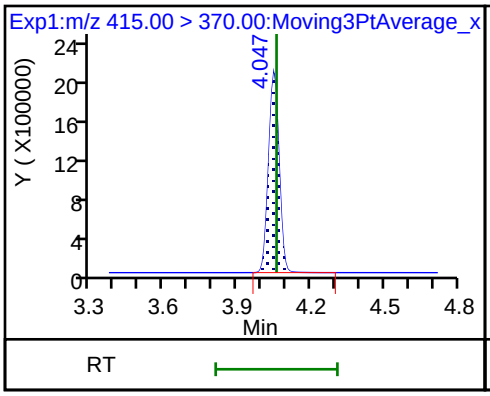
24 Perfluoroheptanesulfonic acid



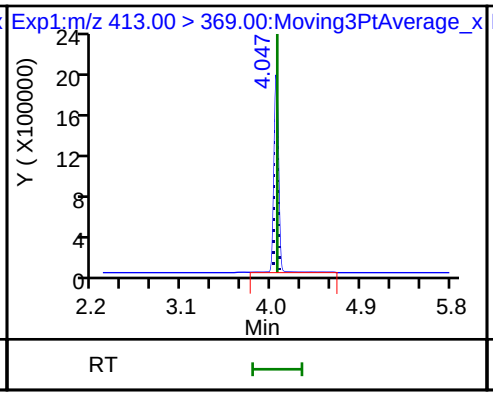
D 25 13C4 PFOA



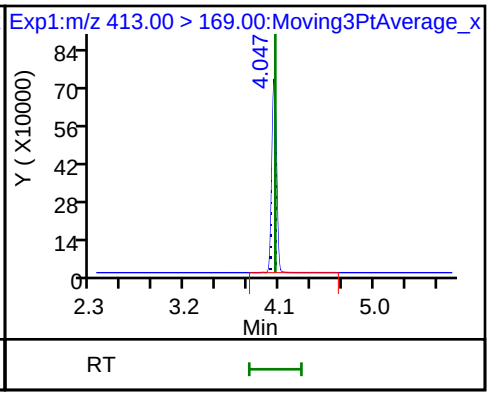
* 23 13C2 PFOA



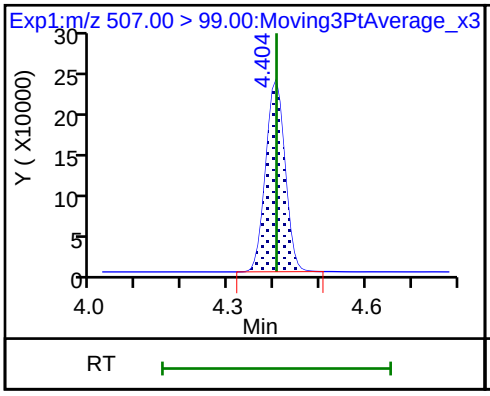
22 Perfluorooctanoic acid



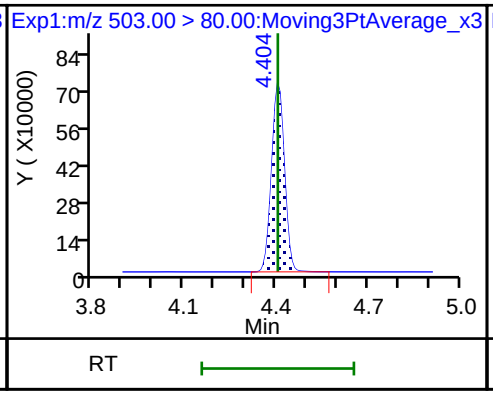
22 Perfluorooctanoic acid



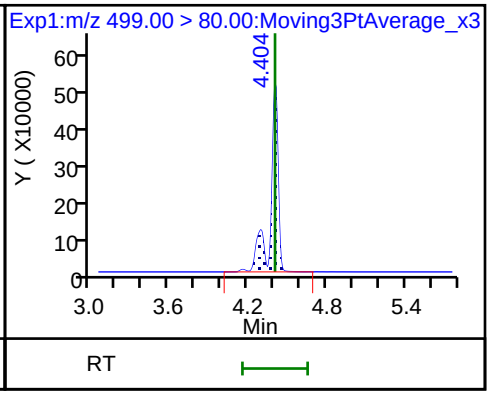
$ 28 13C8 PFOS



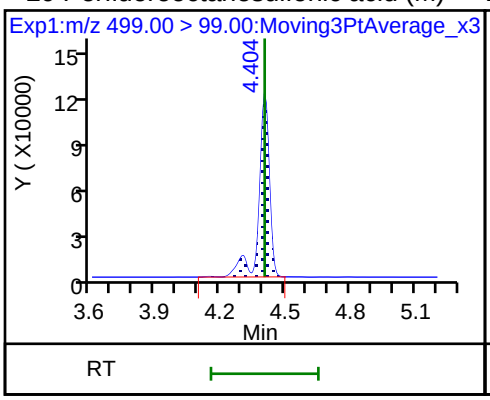
D 27 13C4 PFOS



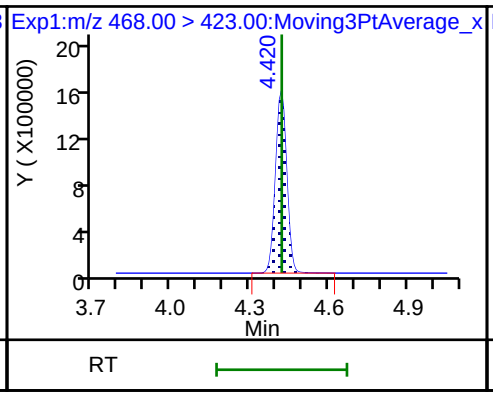
29 Perfluorooctanesulfonic acid



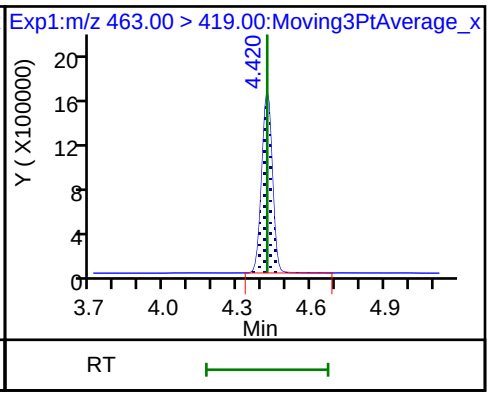
29 Perfluorooctanesulfonic acid (M)



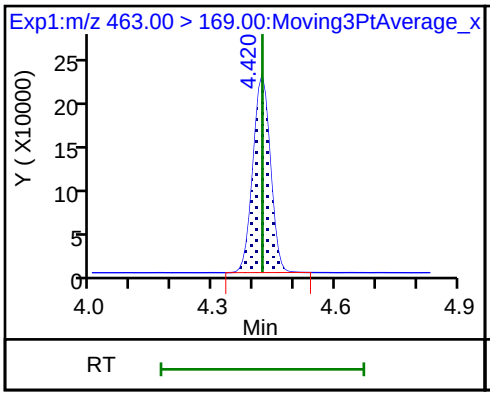
D 30 13C5 PFNA



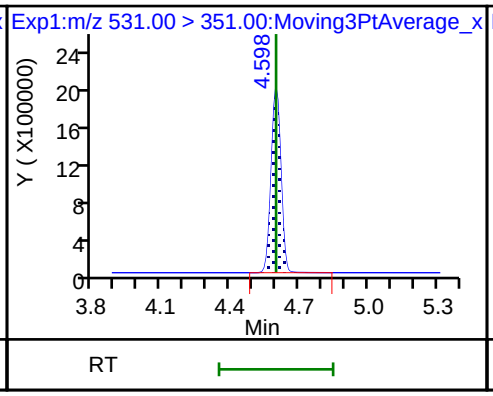
31 Perfluorononanoic acid



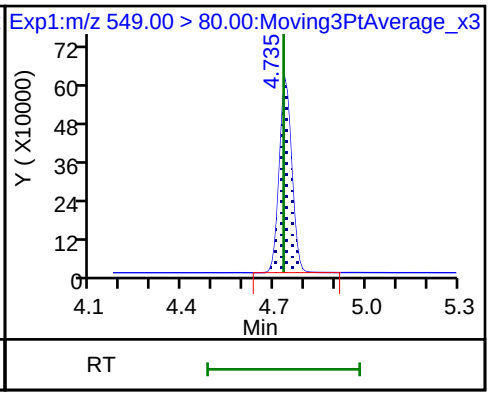
31 Perfluorononanoic acid



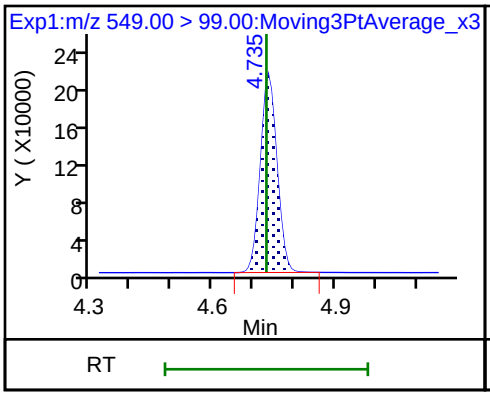
32 9-Chlorohexadecafluoro-3-oxanona



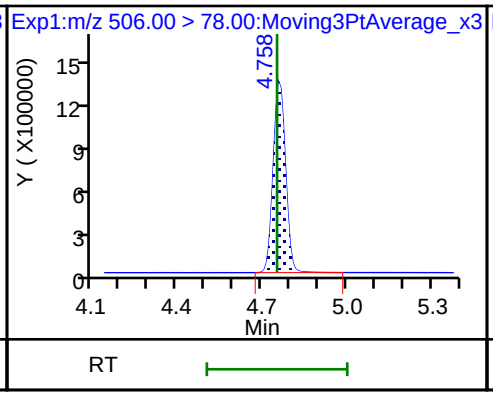
35 Perfluorononanesulfonic acid



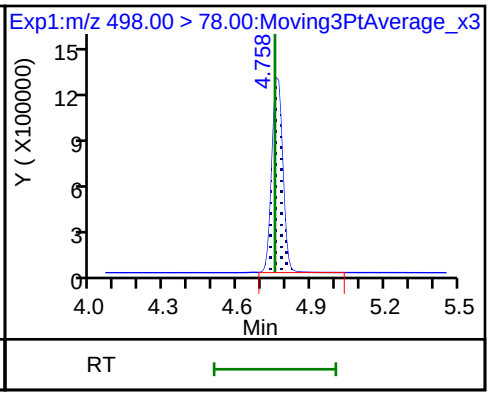
35 Perfluorononanesulfonic acid



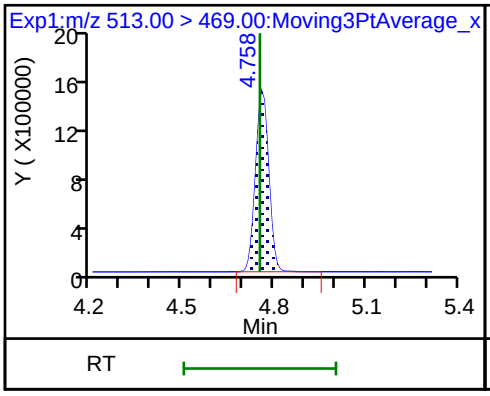
D 33 13C8 FOSA



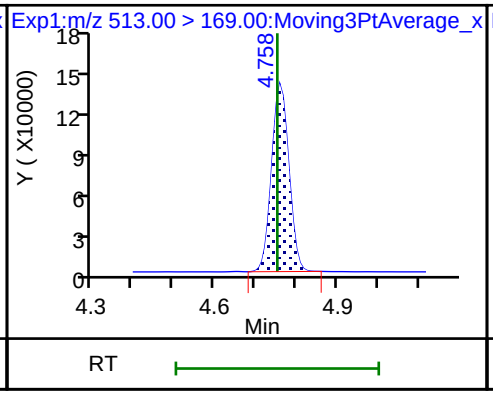
34 Perfluorooctanesulfonamide



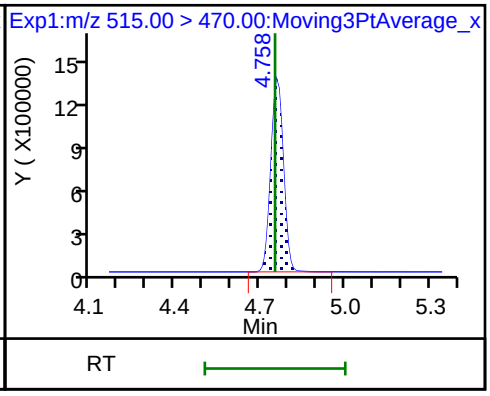
37 Perfluorodecanoic acid



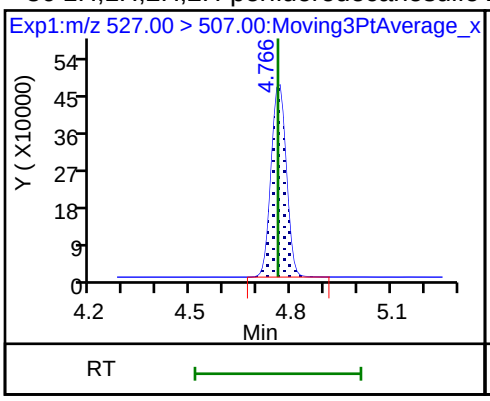
37 Perfluorodecanoic acid



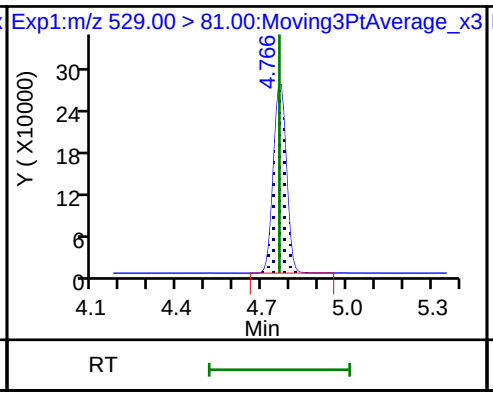
D 39 13C2 PFDA



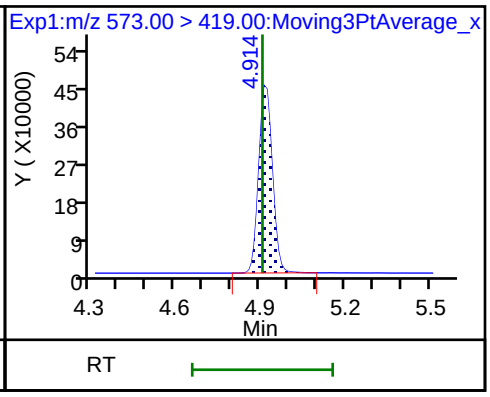
36 1H,1H,2H,2H-perfluorodecanesulfo



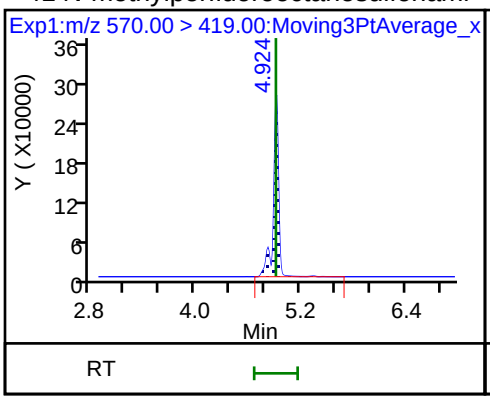
D 38 M2-8:2 FTS



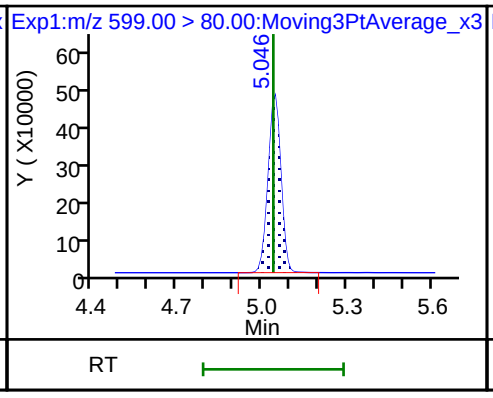
D 40 d3-NMeFOSAA



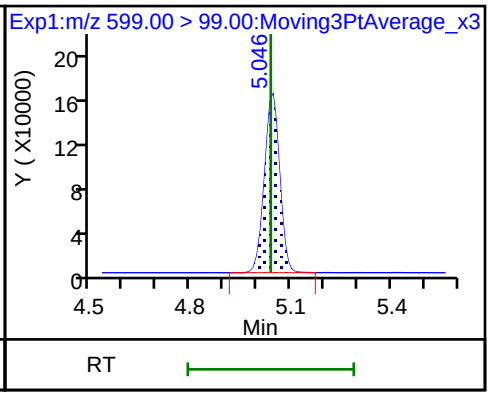
41 N-methylperfluorooctanesulfonami



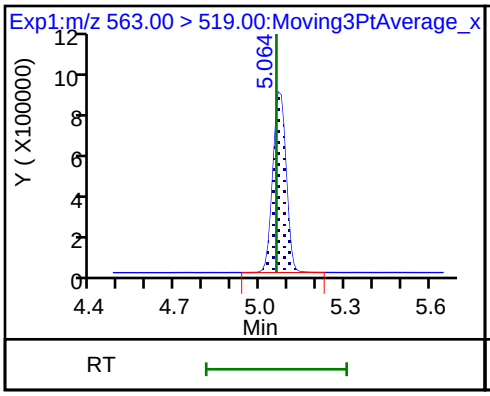
42 Perfluorodecanesulfonic acid



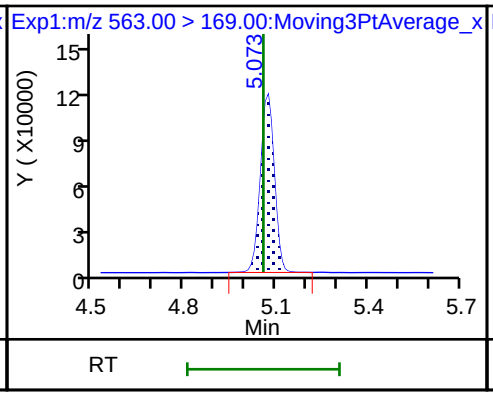
42 Perfluorodecanesulfonic acid



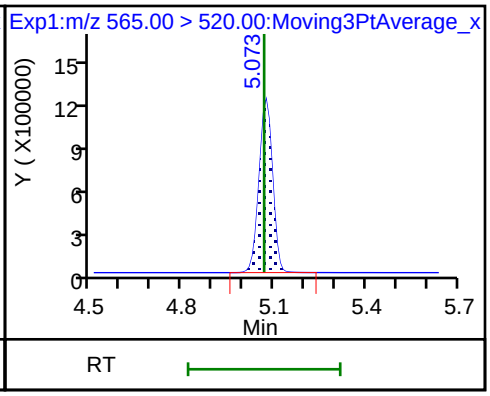
45 Perfluoroundecanoic acid



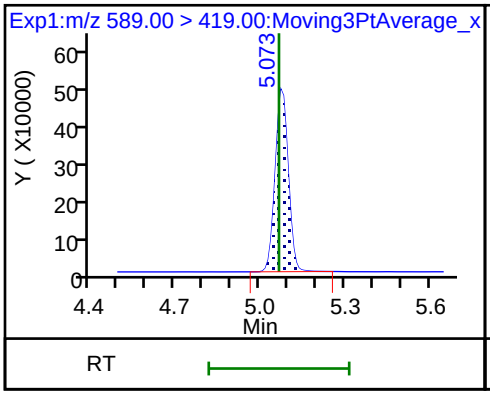
45 Perfluoroundecanoic acid



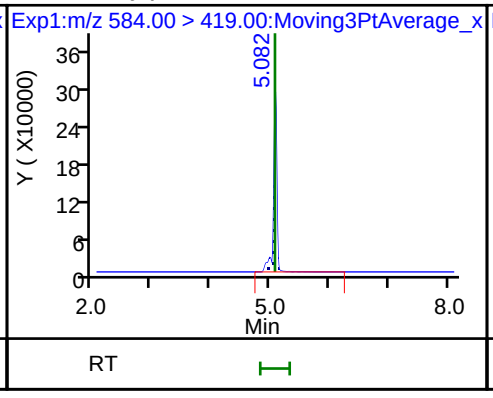
D 43 13C2 PFUnA



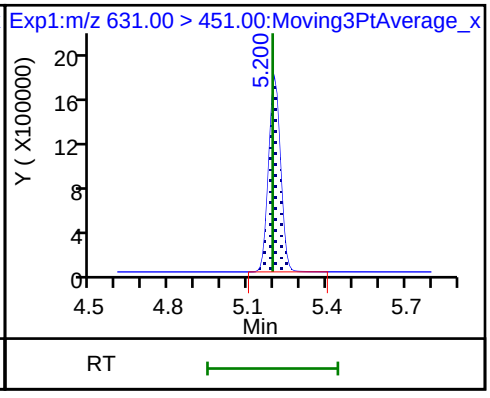
D 44 d5-NEtFOSAA



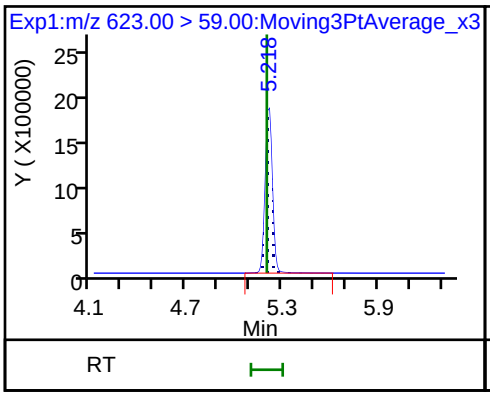
46 N-ethylperfluorooctanesulfonamid



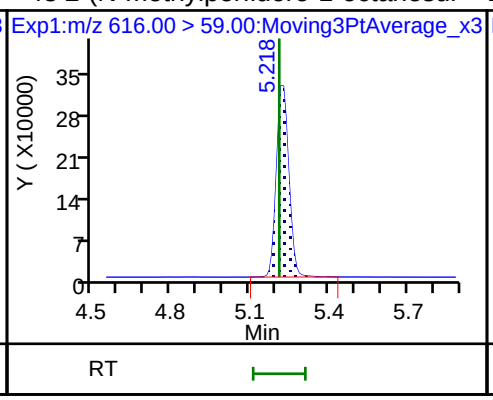
51 11-Chloroeicosafluoro-3-oxaundec



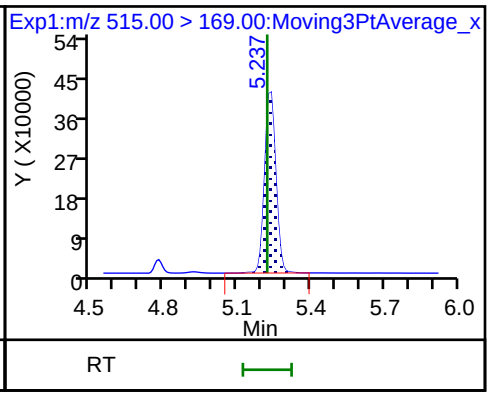
D 47 d7-N-MeFOSE-M



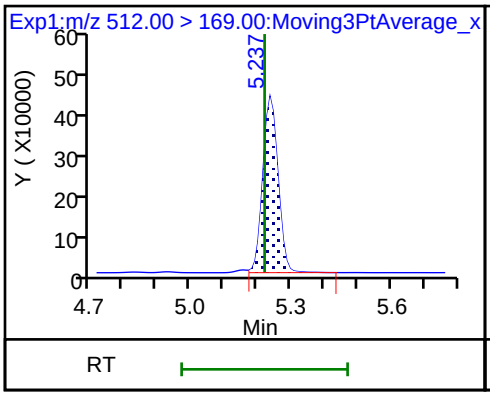
48 2-(N-methylperfluoro-1-octanesul



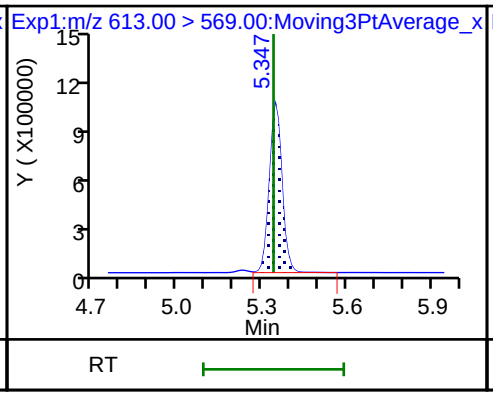
D 49 d-N-MeFOSA-M



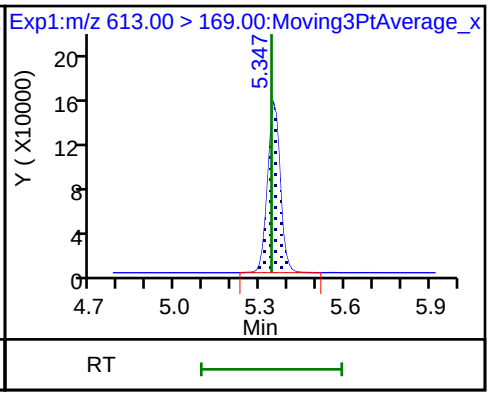
50 NMeFOSA



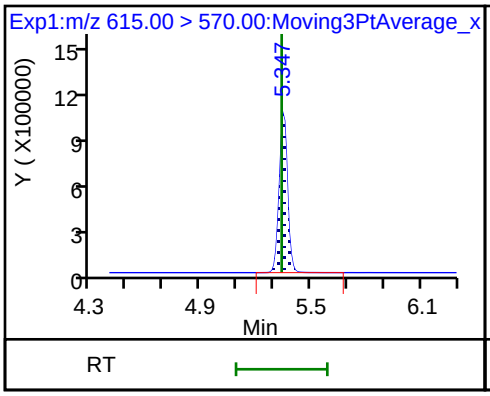
57 Perfluorododecanoic acid



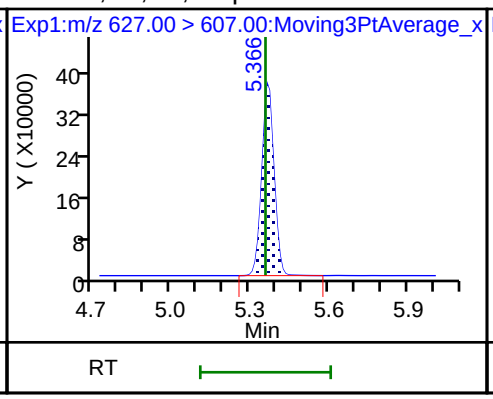
57 Perfluorododecanoic acid



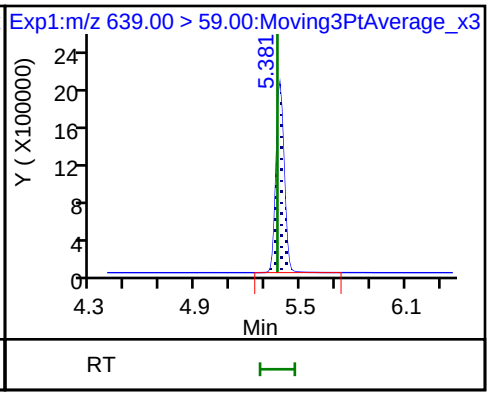
D 56 13C2 PFDoA



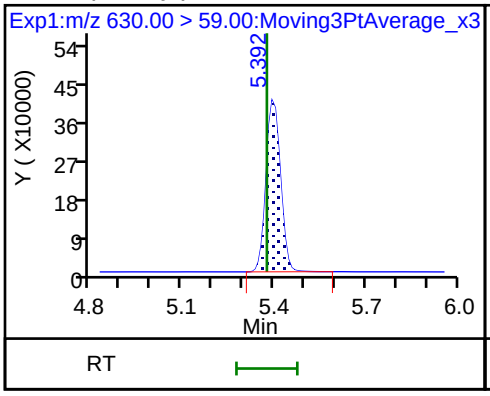
58 1H,1H,2H,2H-perfluorododecanesul



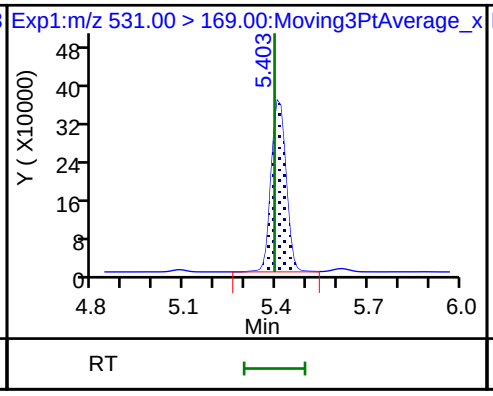
D 52 d9-N-EtFOSE-M



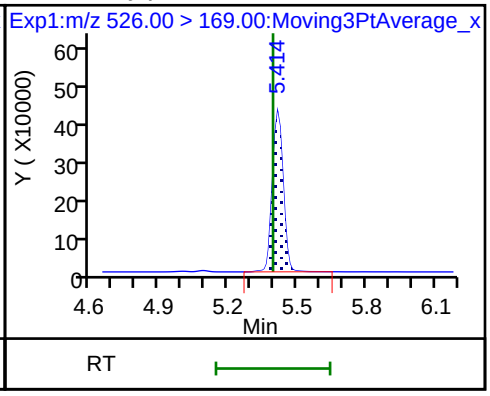
53 2-(N-ethylperfluoro-1-octanesulf



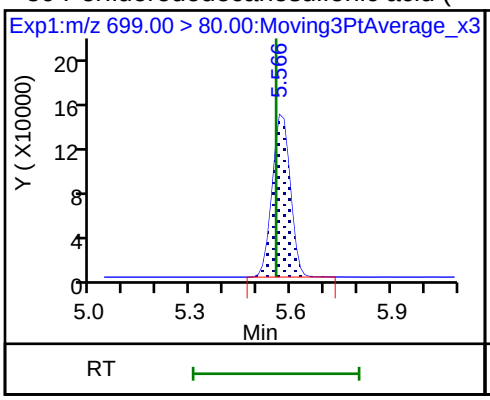
D 54 d-N-EtFOSA-M



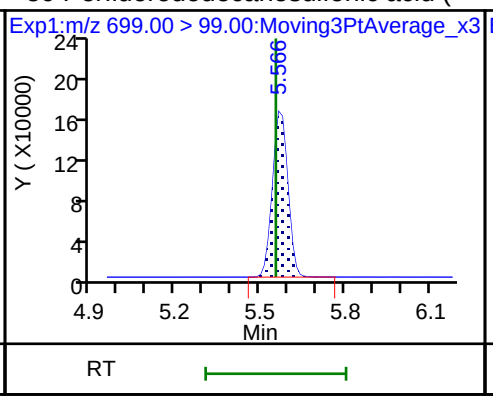
55 N-ethylperfluoro-1-octanesulfona



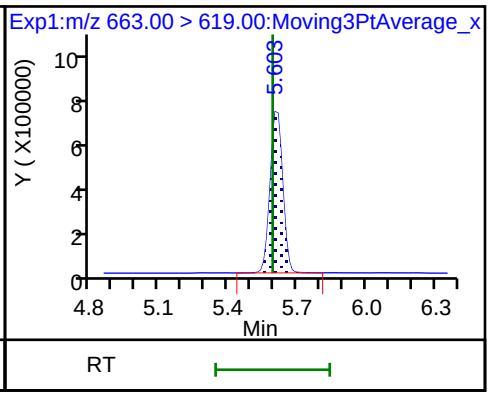
59 Perfluorododecanesulfonic acid (



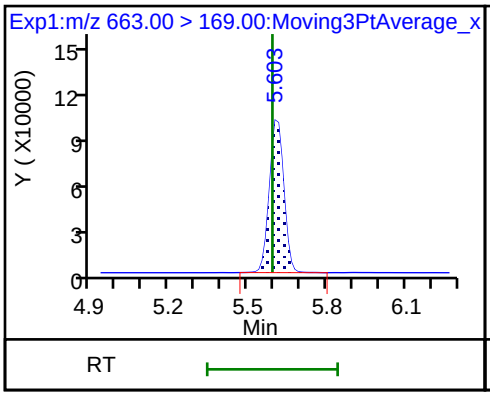
59 Perfluorododecanesulfonic acid (



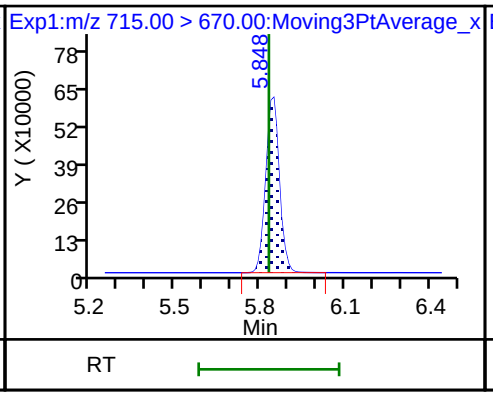
60 Perfluorotridecanoic acid



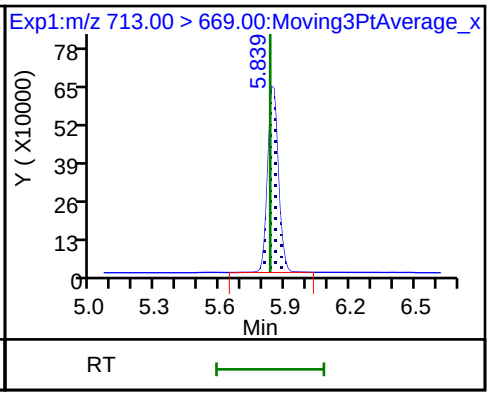
60 Perfluorotridecanoic acid



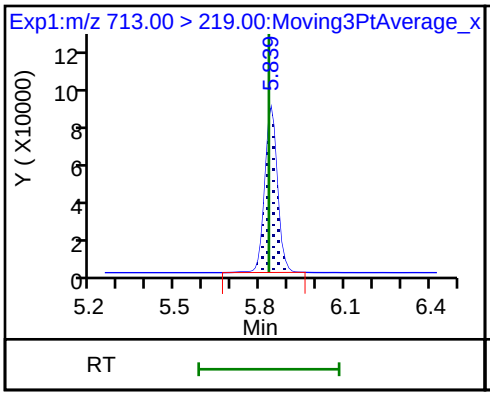
D 61 13C2 PFTeDA



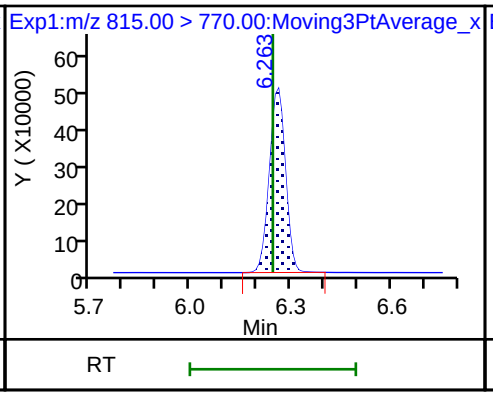
62 Perfluorotetradecanoic acid



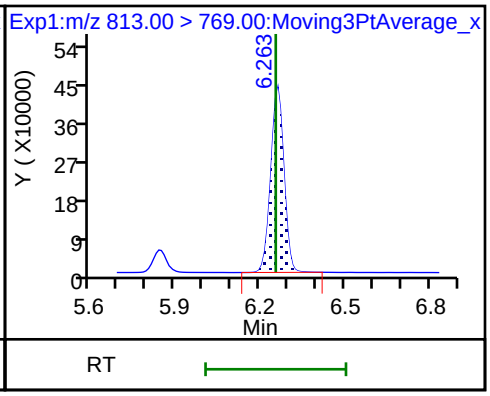
62 Perfluorotetradecanoic acid



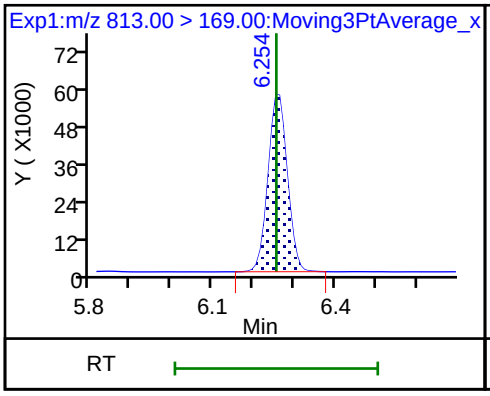
D 64 13C2 PFHxDA



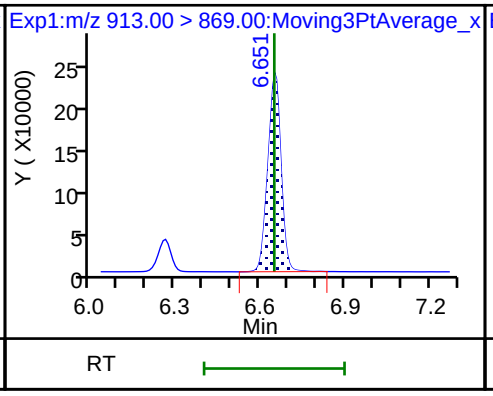
63 Perfluorohexadecanoic acid



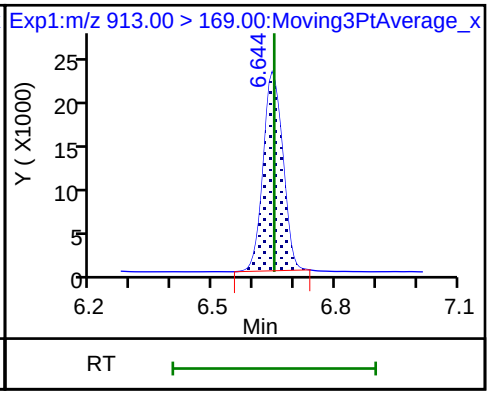
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

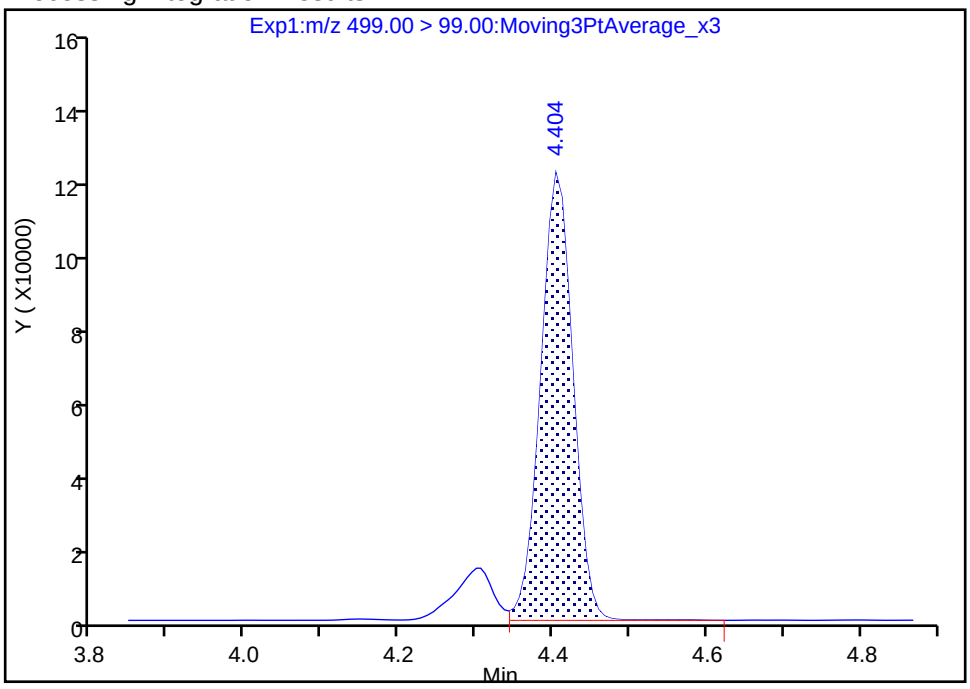
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d
Injection Date: 05-Jun-2020 05:46:23 Instrument ID: A15
Lims ID: CCV L5
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 53 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

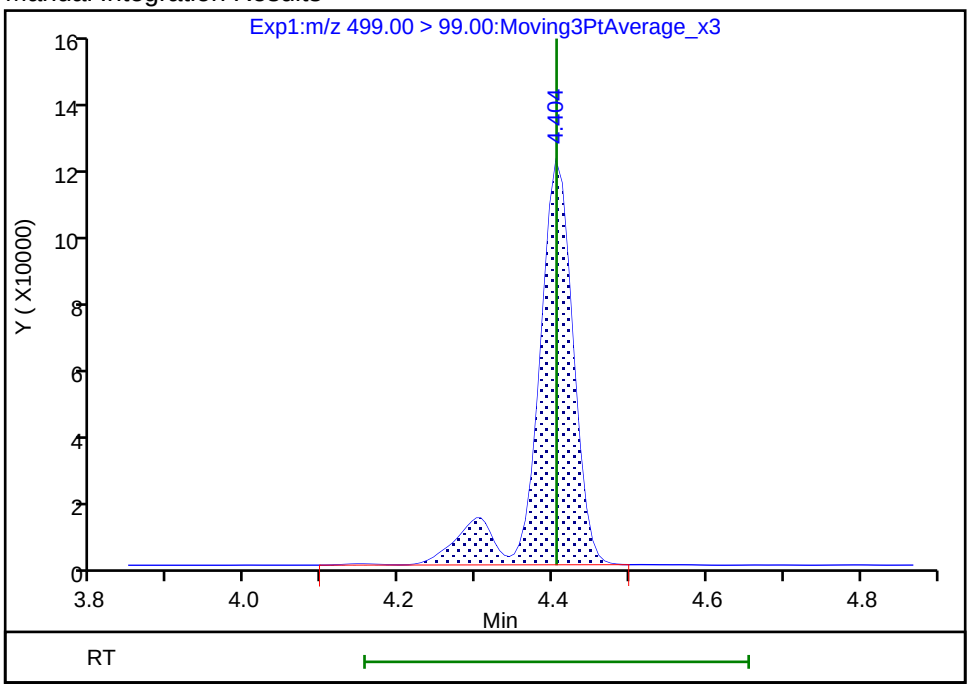
Processing Integration Results

RT: 4.40
Area: 352430
Amount: 2.335836
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 399529
Amount: 2.335836
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:40:03
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-383803/13 Calibration Date: 06/05/2020 07:35

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_B_051.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.9260	0.9464		1.02	1.00	2.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.007	0.9559		0.949	1.00	-5.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9749	1.003		0.910	0.884	2.9	50.0
4:2 FTS	AveID	2.255	2.277		0.943	0.934	1.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9375	0.9089		0.969	1.00	-3.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7335	0.7705		0.985	0.938	5.0	50.0
HFPO-DA (GenX)	AveID	0.9134	0.9408		1.03	1.00	3.0	40.0
Perfluoroheptanoic acid	AveID	1.011	1.021		1.01	1.00	1.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.123	1.074		0.871	0.910	-4.3	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	7.331	7.552		0.970	0.942	3.0	50.0
6:2 FTS	AveID	1.966	2.020		0.974	0.948	2.8	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.091	1.105		0.964	0.952	1.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.057	1.098		1.04	1.00	3.9	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9894	0.9523		0.893	0.928	-3.7	40.0
Perfluorononanoic acid (PFNA)	AveID	1.014	0.9485		0.935	1.00	-6.5	40.0
F-53B Major	AveID	2.729	2.782		0.950	0.932	1.9	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7987	0.8239		0.990	0.960	3.2	50.0
8:2 FTS	AveID	1.631	1.679		0.986	0.958	2.9	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9658	0.8831		0.914	1.00	-8.6	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.8783	0.8872		1.01	1.00	1.0	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7297	0.7140		0.978	1.00	-2.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7009	0.6963		0.958	0.964	-0.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7214	0.6273		0.869	1.00	-13.1	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.7067	0.6405		0.906	1.00	-9.4	40.0
F-53B Minor	AveID	2.579	2.500		0.913	0.942	-3.1	50.0
NMeFOSE	AveID	1.047	1.100		1.05	1.00	5.1	40.0
NMeFOSA	AveID	0.9416	1.032		1.10	1.00	9.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9816	1.062		1.08	1.00	8.2	40.0
10:2 FTS	AveID	1.287	1.270		0.952	0.964	-1.3	50.0
NEtFOSE	AveID	1.024	0.9419		0.920	1.00	-8.0	40.0
NEtFOSA	AveID	1.002	1.153		1.15	1.00	15.1	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2435	0.2612		1.04	0.968	7.3	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-383803/13 Calibration Date: 06/05/2020 07:35

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_B_051.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7891	0.6734		0.853	1.00	-14.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.000	0.9857		0.986	1.00	-1.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9073		1.04	1.00	4.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4920	0.4746		0.965	1.00	-3.5	50.0
13C4 PFBA	Ave	1.583	1.473		2.33	2.50	-7.0	50.0
13C5 PFPeA	Ave	1.414	1.346		2.38	2.50	-4.8	50.0
13C3 PFBS	Ave	0.9803	0.8800		2.09	2.33	-10.2	50.0
M2-4:2 FTS	Ave	0.1305	0.1073		1.92	2.34	-17.8	50.0
13C2 PFHxA	Ave	1.374	1.331		2.42	2.50	-3.1	50.0
13C3 HFPO-DA	Ave	0.3145	0.3067		2.44	2.50	-2.5	50.0
13C4 PFHpA	Ave	1.090	1.039		2.38	2.50	-4.7	50.0
18O2 PFHxS	Ave	0.4715	0.4323		2.17	2.37	-8.3	50.0
M2-6:2 FTS	Ave	0.1440	0.1229		2.03	2.38	-14.6	50.0
13C4 PFOA	Ave	0.9856	0.9364		2.38	2.50	-5.0	50.0
13C4 PFOS	Ave	0.3660	0.3427		2.24	2.39	-6.4	50.0
13C5 PFNA	Ave	0.7544	0.7509		2.49	2.50	-0.5	50.0
13C2 PFDA	Ave	0.7192	0.6441		2.24	2.50	-10.4	50.0
13C8 FOSA	Ave	0.7278	0.6730		2.31	2.50	-7.5	50.0
M2-8:2 FTS	Ave	0.1717	0.1509		2.11	2.40	-12.1	50.0
d3-NMeFOSAA	Ave	0.2685	0.2370		2.21	2.50	-11.7	50.0
13C2 PFUnA	Ave	0.6132	0.5809		2.37	2.50	-5.3	50.0
d5-NEtFOSAA	Ave	0.2733	0.2554		2.34	2.50	-6.6	50.0
d7-N-MeFOSE-M	Ave	0.1833	0.1629		11.1	12.5	-11.2	50.0
d-N-MeFOSA-M	Ave	0.2300	0.2022		2.20	2.50	-12.1	50.0
13C2 PFDoA	Ave	0.5432	0.5651		2.60	2.50	4.0	50.0
d9-N-EtFOSE-M	Ave	0.2246	0.2246		12.5	12.5	-0.0	50.0
d-N-EtFOSA-M	Ave	0.2334	0.1824		1.95	2.50	-21.9	50.0
13C2 PFTeDA	Ave	0.3551	0.3455		2.43	2.50	-2.7	50.0
13C2 PFHxDA	Ave	0.2944	0.2855		2.42	2.50	-3.0	50.0
13C8 PFOA	Ave	0.6050	0.5797		2.35	2.45	-4.2	50.0
13C8 PFOS	Ave	0.1244	0.1133		2.18	2.39	-9.0	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_051.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 05-Jun-2020 07:35:43 ALS Bottle#: 52 Worklist Smp#: 13
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 09:41:22 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: ruangyotsakuld Date: 08-Jun-2020 09:41:22
Ratio Calibration: Average of Initial Calibration

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	2.546	2.549	-0.003	0.628	9629332	2.33		93.0	16390	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.554	2.557	-0.003	1.003	3645235	1.02		102	1018	
D 4 13C5 PFPeA										
267.90 > 223.00	2.896	2.899	-0.003	0.714	8796729	2.38		95.2	12317	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.896	2.899	-0.003	1.000	3363558	0.9489		94.9	253	
D 9 13C3 PFBS										
301.90 > 80.00	2.927	2.940	-0.013	0.722	5350219	2.09		89.8	10639	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.927	2.940	-0.013	1.000	2041242	0.9099	Target=2.14	103	716	
298.90 > 99.00	2.927	2.940	-0.013	1.000	972864		2.10(1.07-3.21)		673	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.220	3.231	-0.011	0.794	654979	1.92		82.2	1196	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.220	3.231	-0.011	1.000	596525	0.9430		101	4896	
D 11 13C2 PFHxA										
315.00 > 270.00	3.265	3.278	-0.013	0.805	8702429	2.42		96.9	16084	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.265	3.278	-0.013	1.000	3163682	0.9694	Target=15.73	96.9	1071	
313.00 > 119.00	3.265	3.278	-0.013	1.000	210280		15.05(7.86-23.59)		570	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.285	3.288	-0.003	1.122	1663143	0.9853	Target=2.69	105	5326	
349.00 > 99.00	3.285	3.288	-0.003	1.122	608667		2.73(1.35-4.04)		4043	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.380	3.394	-0.014	0.834	2005142	2.44		97.5	7715	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.380	3.394	-0.014	1.000	754590	1.03		103	6753	
D 18 13C4 PFHpA										
367.00 > 322.00	3.666	3.672	-0.006	0.904	6792236	2.38		95.3	12840	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.666	3.672	-0.006	1.000	2773242	1.01	Target=3.80	101	1032	
363.00 > 169.00	3.666	3.672	-0.006	1.000	726042		3.82(1.90-5.71)		2693	
D 17 18O2 PFHxS										
403.00 > 84.00	3.666	3.682	-0.016	0.904	2673605	2.17		91.7	8284	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.666	3.682	-0.016	1.000	1105269	0.8706	Target=2.99	95.7	3608	
399.00 > 99.00	3.666	3.682	-0.016	1.000	382361		2.89(1.50-4.49)		2434	
19 DONA										
377.00 > 251.00	3.715	3.721	-0.006	0.841	6375633	0.9704	Target=2.14	103	9922	
377.00 > 85.00	3.715	3.721	-0.006	0.841	2929116		2.18(1.07-3.21)		7498	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.038	4.042	-0.004	0.996	763455	2.03		85.4	4031	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.038	4.042	-0.004	1.000	615526	0.9742		103	4179	
$ 26 13C8 PFOA										
421.00 > 376.00	4.055	4.051	0.004	1.000	3710085	2.35		95.8	12295	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.055	4.051	0.004	0.918	942502	0.9641	Target=3.77	101	3388	
449.00 > 99.00	4.055	4.051	0.004	0.918	253393		3.72(1.89-5.66)		2143	
D 25 13C4 PFOA										
417.00 > 372.00	4.063	4.059	0.004	1.002	6122113	2.38		95.0	10345	
* 23 13C2 PFOA										
415.00 > 370.00	4.055	4.059	-0.004		6537728	2.50			12115	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.063	4.059	0.004	1.000	2688624	1.04	Target=2.88	104	214	
413.00 > 169.00	4.063	4.059	0.004	1.000	890057		3.02(1.44-4.31)		1937	
$ 28 13C8 PFOS										
507.00 > 99.00	4.411	4.405	0.006	1.088	708074	2.18		91.0	4440	
D 27 13C4 PFOS										
503.00 > 80.00	4.419	4.405	0.014	1.090	2141842	2.24		93.6	7173	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.419	4.405	0.014	1.000	791996	0.8932	Target=4.89	96.3	2904	
499.00 > 99.00	4.419	4.405	0.014	1.000	158491		5.00(2.44-7.33)		1391	
D 30 13C5 PFNA										
468.00 > 423.00	4.435	4.420	0.015	1.094	4908875	2.49		99.5	8765	
31 Perfluorononanoic acid										
463.00 > 419.00	4.435	4.420	0.015	1.000	1862366	0.9352	Target=7.00	93.5	372	
463.00 > 169.00	4.435	4.420	0.015	1.000	275250		6.77(3.50-10.51)		1503	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.614	4.598	0.016	1.044	2323751	0.9500		102	9203	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.749	4.730	0.019	1.075	708834	0.99	Target=2.77	103	1721	
549.00 > 99.00	4.749	4.730	0.019	1.075	240827		2.94(1.38-4.15)		2985	
D 33 13C8 FOSA										
506.00 > 78.00	4.774	4.752	0.022	1.177	4399859	2.31		92.5	8936	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.774	4.752	0.022	1.000	1561405	1.01		101	3180	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.774	4.752	0.022	1.000	1487494	0.9144	Target=10.36	91.4	637	
513.00 > 169.00	4.774	4.752	0.022	1.000	160249		9.28(5.18-15.54)		215	
D 39 13C2 PFDA										
515.00 > 470.00	4.774	4.752	0.022	1.177	4211024	2.24		89.6	11712	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.774	4.761	0.013	1.000	634521	0.9856		103	5259	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.774	4.761	0.013	1.177	945051	2.11		87.9	4956	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.932	4.907	0.025	1.216	1549708	2.21		88.3	2849	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.932	4.917	0.015	1.000	442578	0.9784		97.8	489	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.054	5.039	0.015	1.144	601491	0.9576	Target=2.97	99.3	2892	
599.00 > 99.00	5.054	5.039	0.015	1.144	206267		2.92(1.49-4.46)		1940	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.081	5.057	0.024	1.000	952947	0.8695	Target=7.56	86.9	722	
563.00 > 169.00	5.081	5.057	0.024	1.000	164805		5.78(3.78-11.34)		1465	
D 43 13C2 PFUnA										
565.00 > 520.00	5.081	5.066	0.015	1.253	3797985	2.37		94.7	10423	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.091	5.066	0.025	1.255	1669513	2.34		93.4	2691	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.091	5.075	0.016	1.000	427749	0.9064		90.6	2184	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.208	5.193	0.015	1.179	2110140	0.9129		96.9	5577	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.226	5.202	0.024	1.289	5323533	11.1		88.8	7482	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.236	5.211	0.025	1.002	468402	1.05		105	1192	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.245	5.220	0.025	1.294	1321706	2.20		87.9	110	
50 NMeFOSA										
512.00 > 169.00	5.245	5.220	0.025	1.000	545412	1.10		110	572	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.356	5.340	0.016	0.998	1568959	1.08	Target=7.18	108	301	
613.00 > 169.00	5.365	5.340	0.025	1.000	197903		7.93(3.59-10.76)		1441	
D 56 13C2 PFDoA										
615.00 > 570.00	5.365	5.340	0.025	1.323	3694591	2.60		104	11583	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.381	5.358	0.023	1.127	483088	0.9515		98.7	4216	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.388	5.367	0.021	1.329	7340080	12.5		100	5412	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.410	5.375	0.035	1.004	553076	0.9200		92.0	1903	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.421	5.394	0.027	1.337	1192318	1.95		78.1	518	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.421	5.394	0.027	1.000	549950	1.15		115	646	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.587	5.555	0.032	1.264	226597	1.04	Target=0.79	107	1985	
699.00 > 99.00	5.587	5.555	0.032	1.264	268130		0.85(0.39-1.18)		3977	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.612	5.592	0.020	1.046	995157	0.8534	Target=6.63	85.3	217	
663.00 > 169.00	5.624	5.592	0.032	1.048	174464		5.70(3.32-9.95)		1732	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.853	5.830	0.023	1.444	2258697	2.43		97.3	6024	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.853	5.830	0.023	1.000	890515	0.9856	Target=8.46	98.6	256	
713.00 > 219.00	5.844	5.830	0.014	0.998	111493		7.99(4.23-12.69)		2389	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.261	6.245	0.016	1.544	1866563	2.42		97.0	5634	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.270	6.255	0.015	1.001	677419	1.04	Target=7.92	104	101	
813.00 > 169.00	6.270	6.255	0.015	1.001	82060		8.26(3.96-11.88)		1326	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.656	6.650	0.006	1.063	354377	0.9647	Target=10.24	96.5	73.2	
913.00 > 169.00	6.656	6.650	0.006	1.063	37866		9.36(5.12-15.36)		733	

Reagents:

LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 08-Jun-2020 09:41:23 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_051.d

Injection Date: 05-Jun-2020 07:35:43 Instrument ID: A15

Lims ID: CCV L4

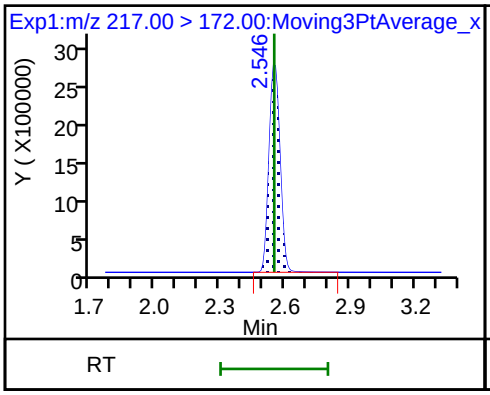
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 52 Worklist Smp#: 13

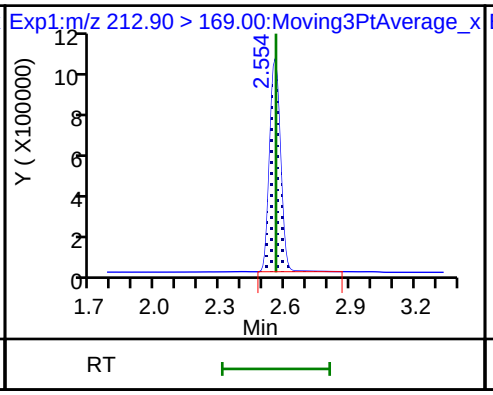
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

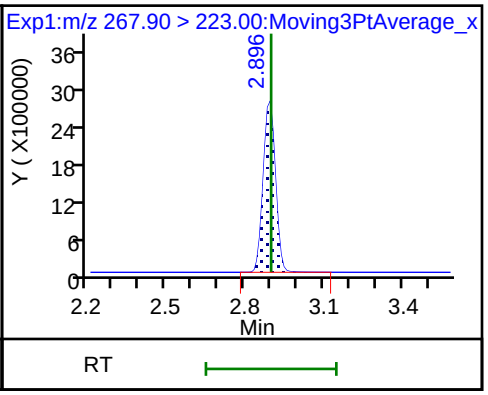
D 1 13C4 PFBA



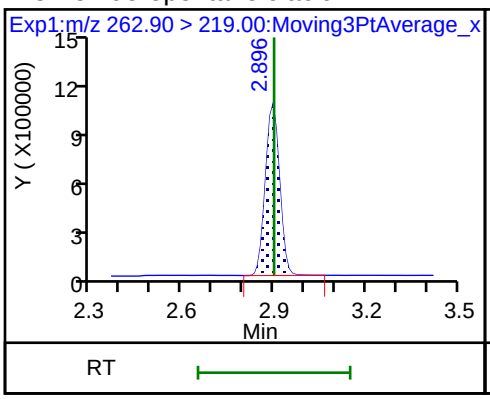
2 Perfluorobutanoic acid



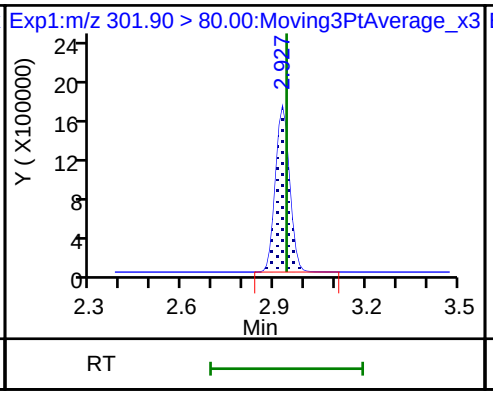
D 4 13C5 PFPeA



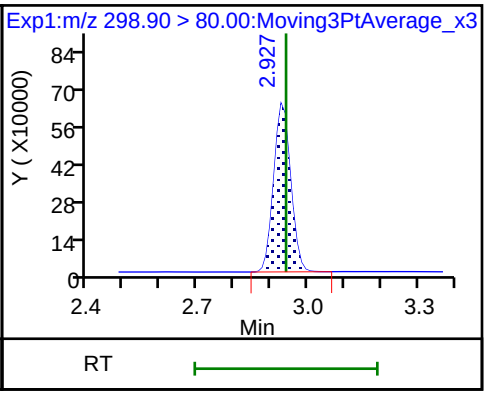
5 Perfluoropentanoic acid



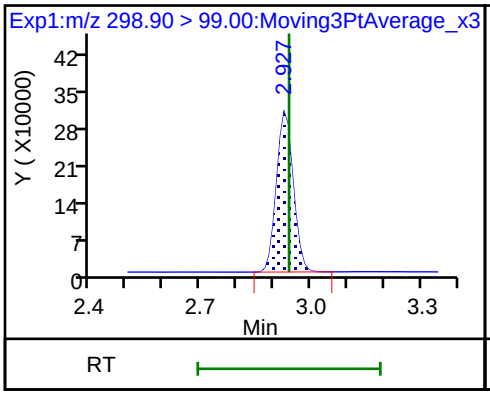
D 9 13C3 PFBS



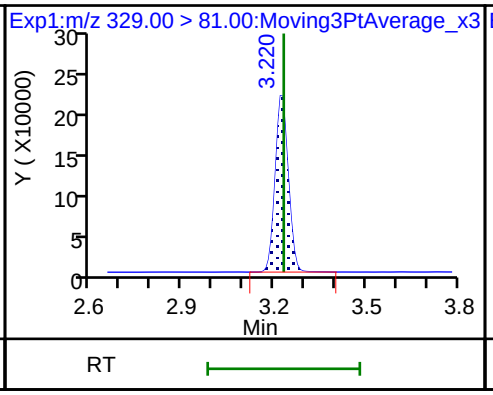
6 Perfluorobutanesulfonic acid



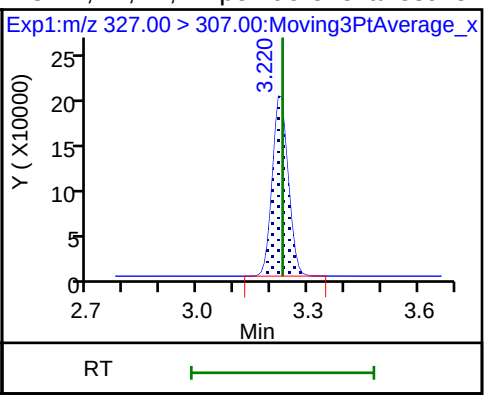
6 Perfluorobutanesulfonic acid



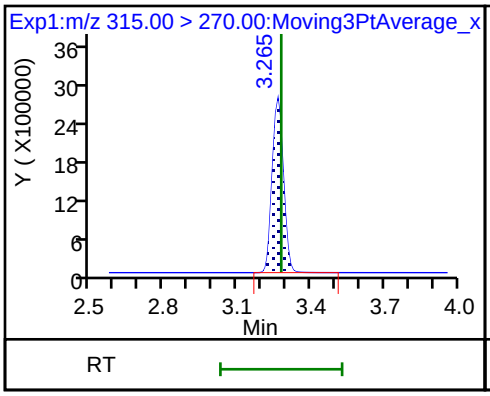
D 7 M2-4:2 FTS



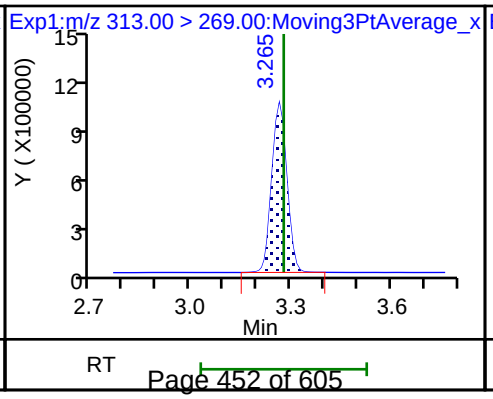
8 1H,1H,2H,2H-perfluorohexanesulfo



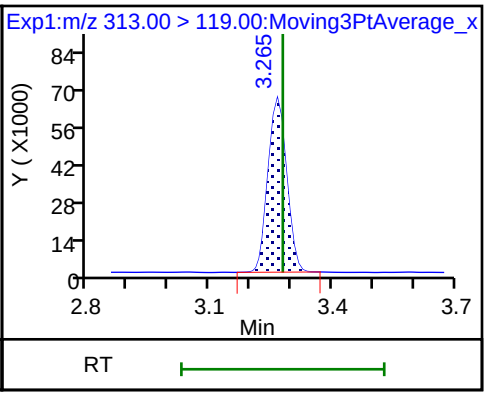
D 11 13C2 PFHxA



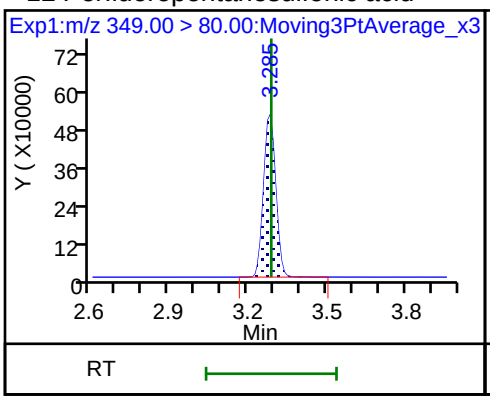
10 Perfluorohexanoic acid



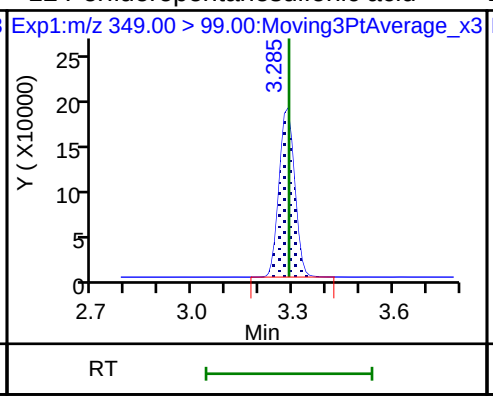
10 Perfluorohexanoic acid



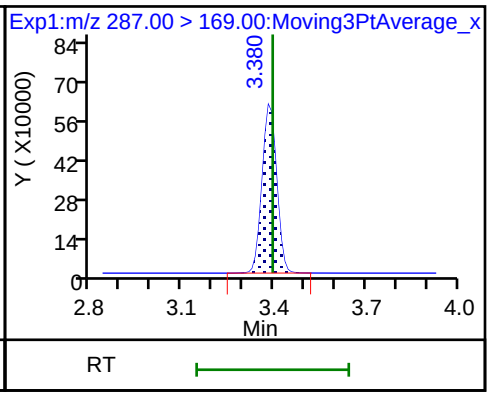
12 Perfluoropentanesulfonic acid



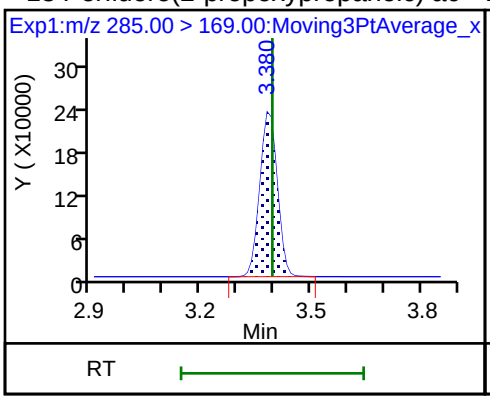
12 Perfluoropentanesulfonic acid



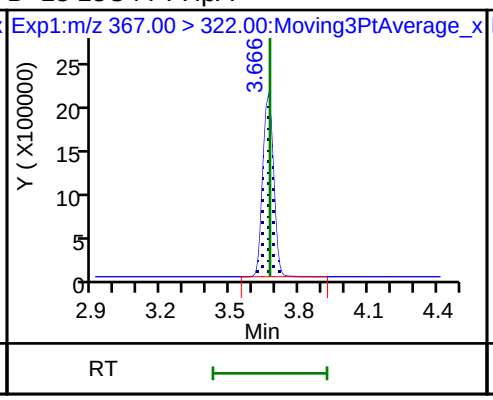
D 14 13C3 HFPO-DA



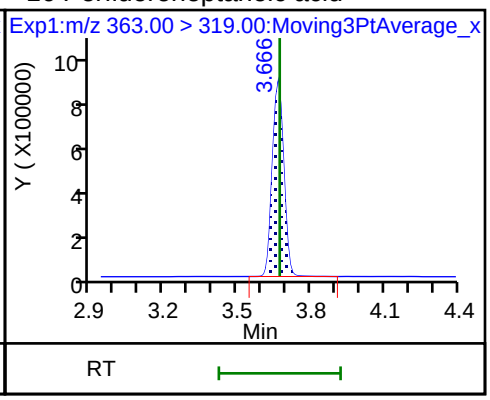
13 Perfluoro(2-propoxypropanoic) ac



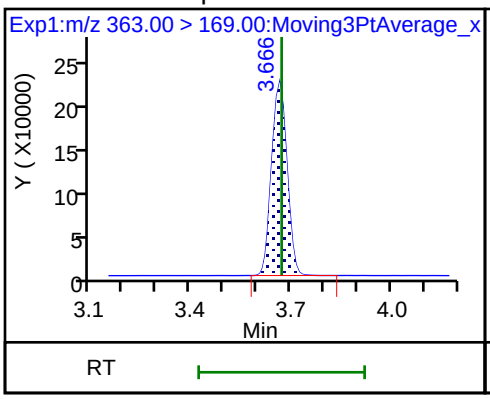
D 18 13C4 PFHpA



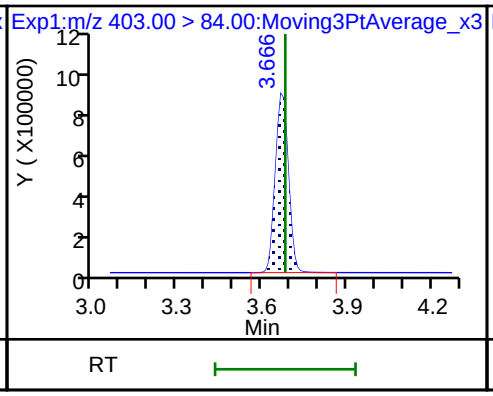
16 Perfluoroheptanoic acid



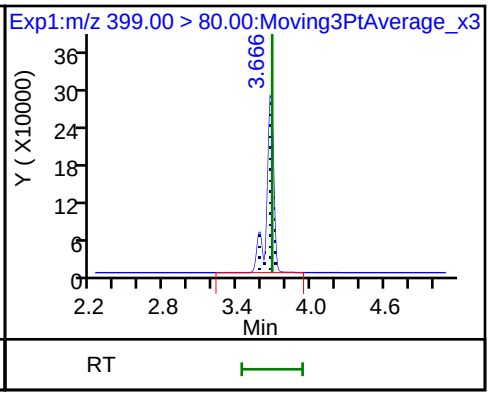
16 Perfluoroheptanoic acid



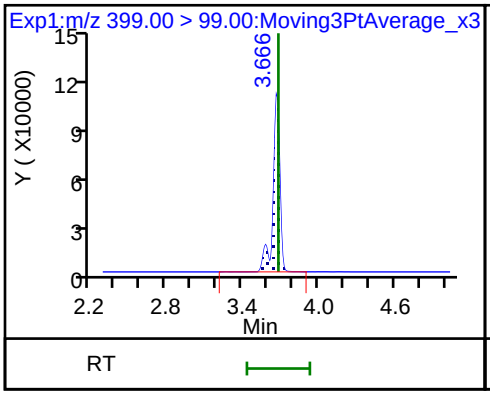
D 17 18O2 PFHxS



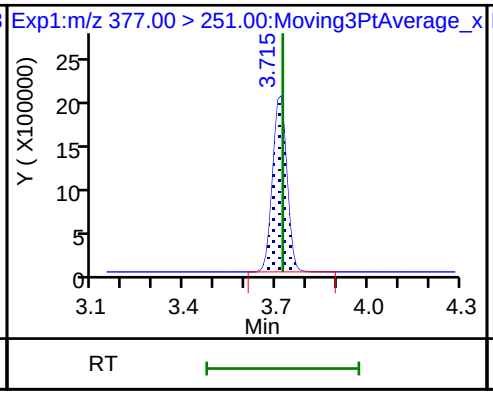
15 Perfluorohexanesulfonic acid



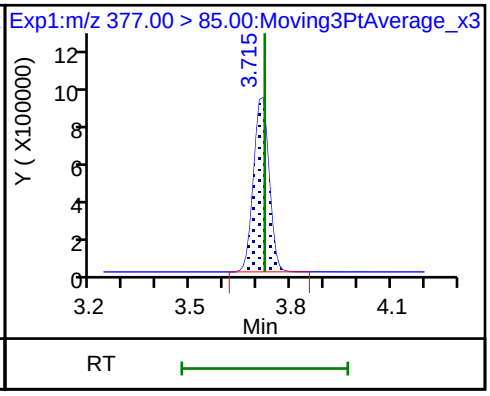
15 Perfluorohexanesulfonic acid



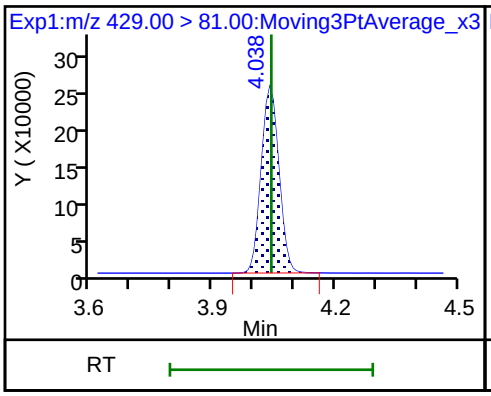
19 DONA



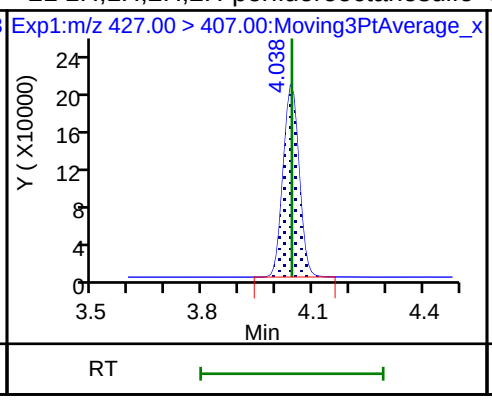
19 DONA



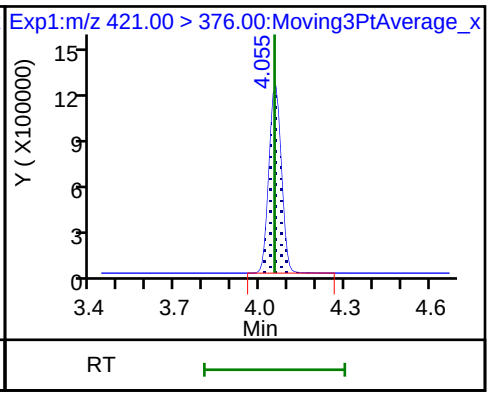
D 20 M2-6:2 FTS



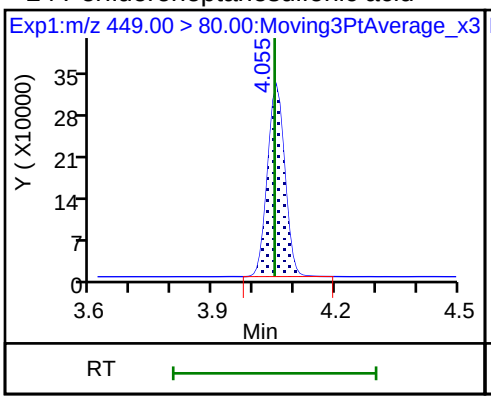
21 1H,1H,2H,2H-perfluorooctanesulfo



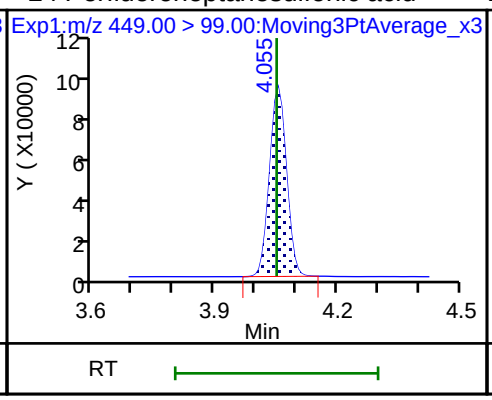
$ 26 13C8 PFOA



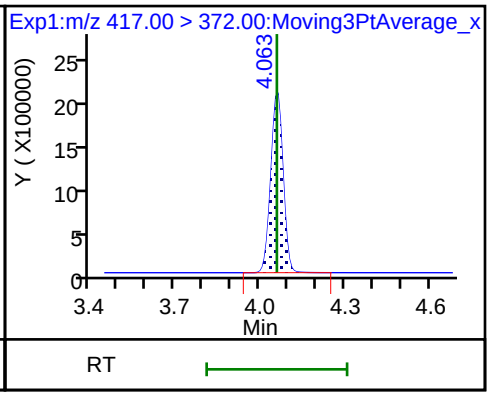
24 Perfluoroheptanesulfonic acid



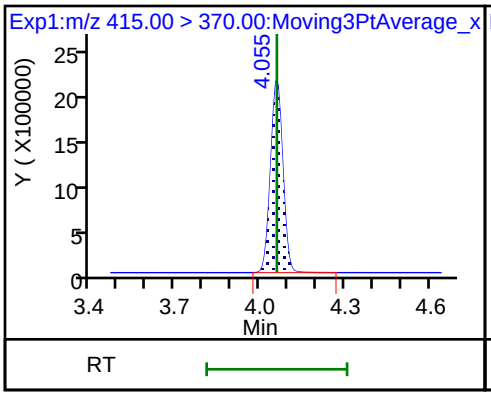
24 Perfluoroheptanesulfonic acid



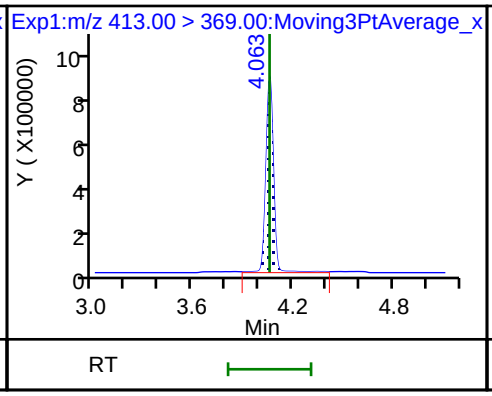
D 25 13C4 PFOA



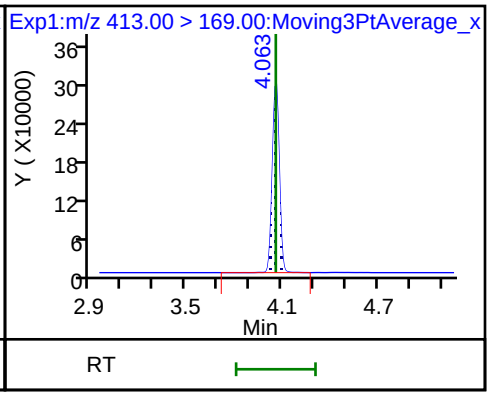
* 23 13C2 PFOA



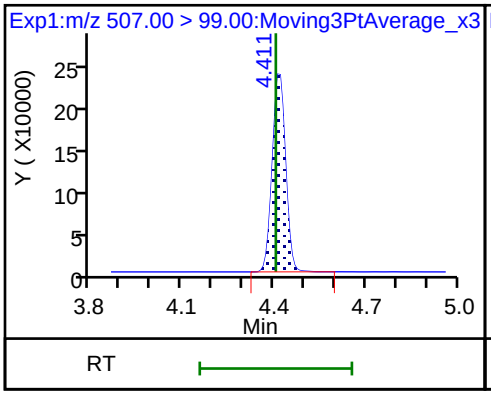
22 Perfluorooctanoic acid



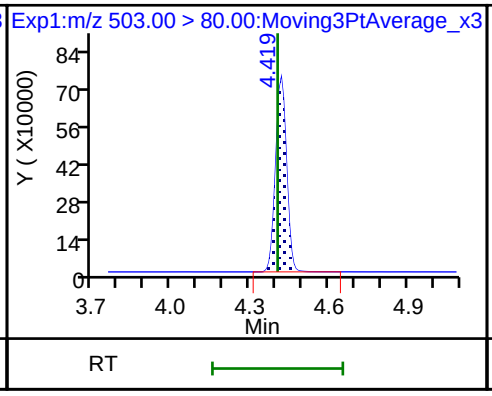
22 Perfluorooctanoic acid



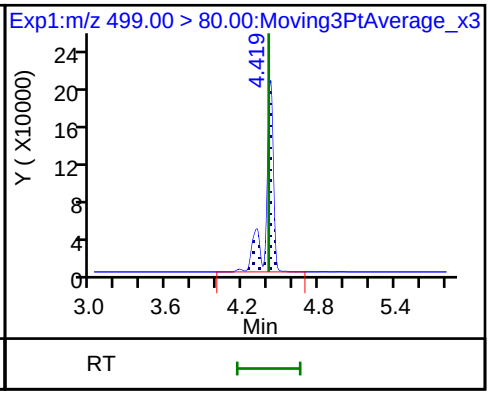
$ 28 13C8 PFOS



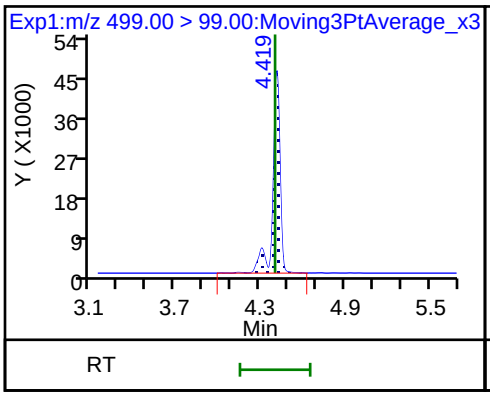
D 27 13C4 PFOS



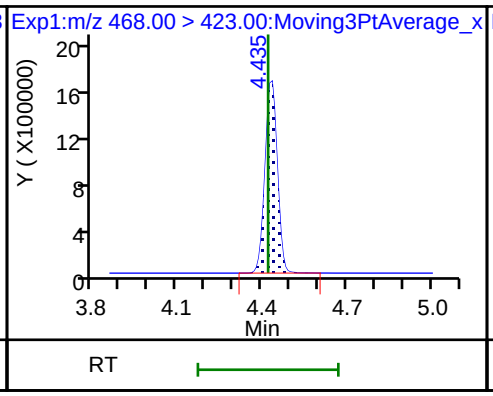
29 Perfluorooctanesulfonic acid



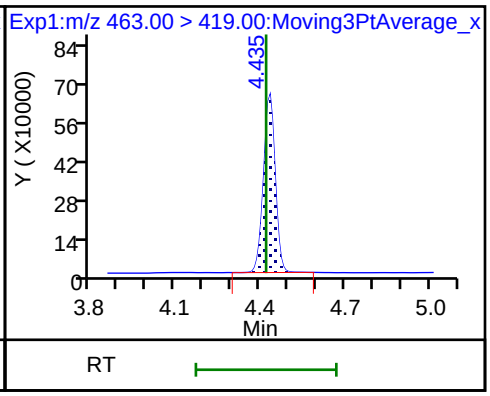
29 Perfluorooctanesulfonic acid



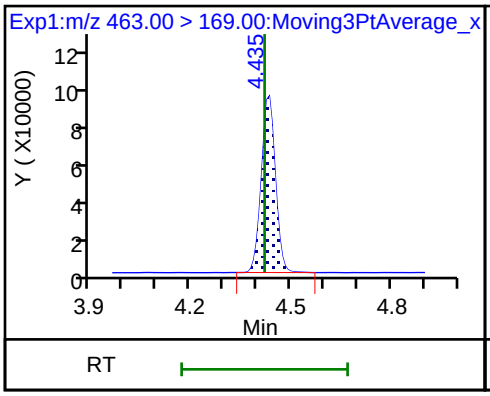
D 30 13C5 PFNA



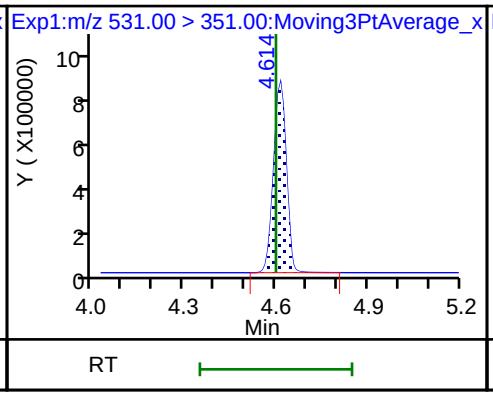
31 Perfluorononanoic acid



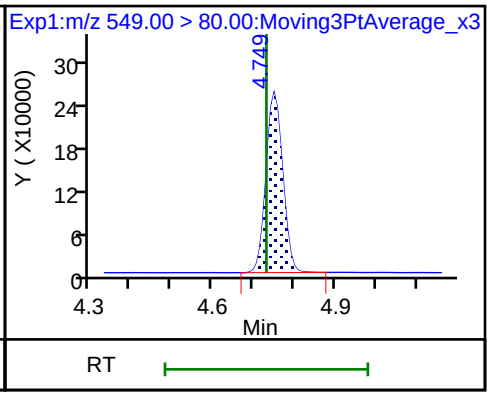
31 Perfluorononanoic acid



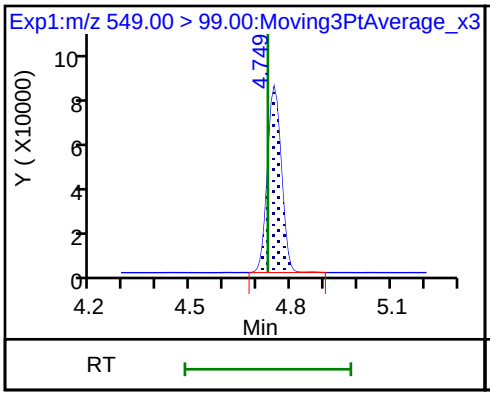
32 9-Chlorohexadecafluoro-3-oxanona



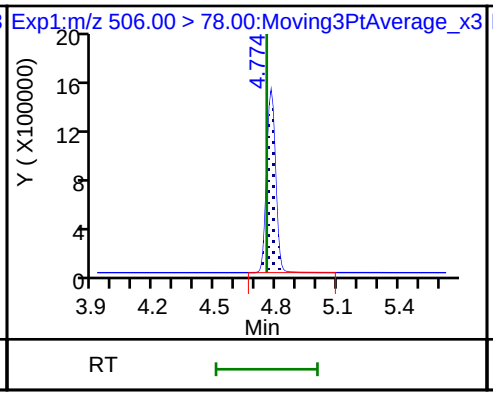
35 Perfluorononanesulfonic acid



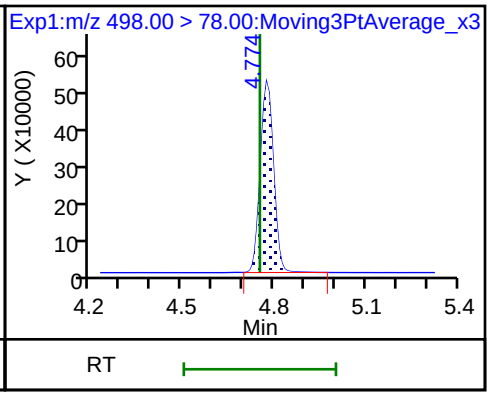
35 Perfluorononanesulfonic acid



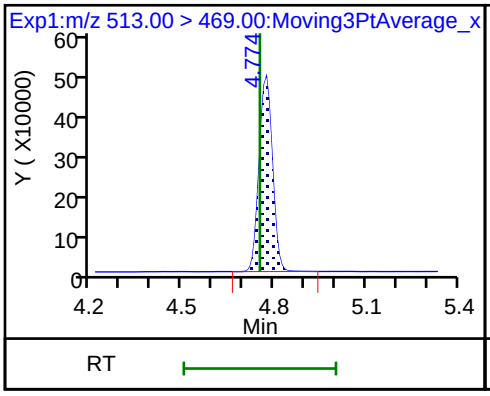
D 33 13C8 FOSA



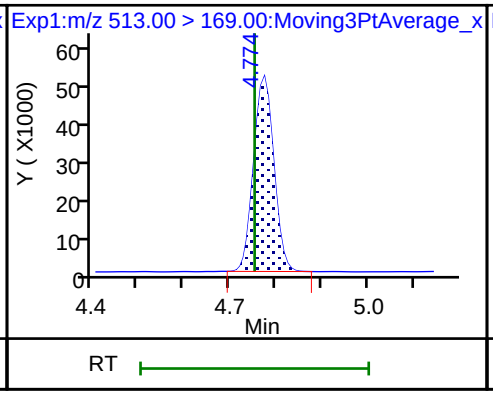
34 Perfluorooctanesulfonamide



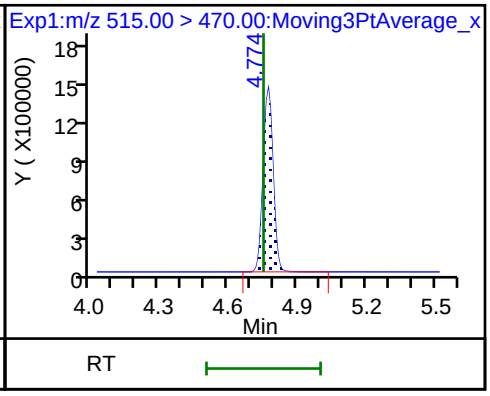
37 Perfluorodecanoic acid



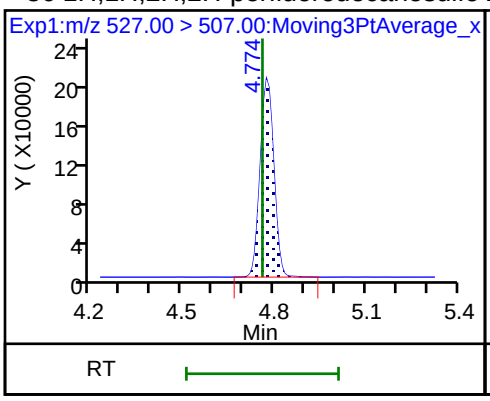
37 Perfluorodecanoic acid



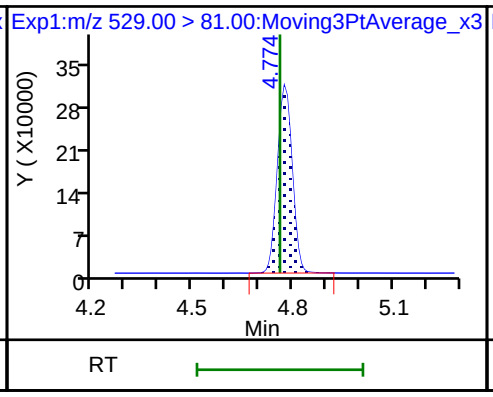
D 39 13C2 PFDA



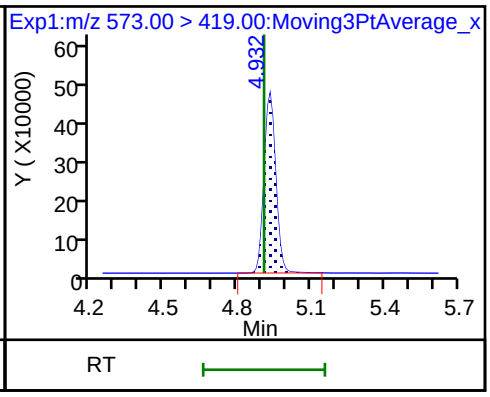
36 1H,1H,2H,2H-perfluorodecanesulfo



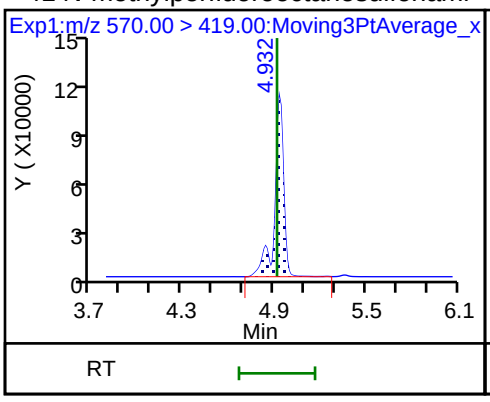
D 38 M2-8:2 FTS



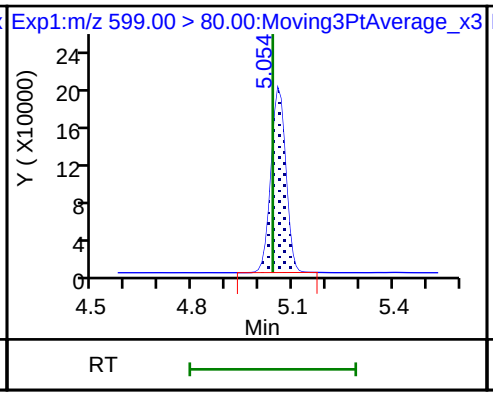
D 40 d3-NMeFOSAA



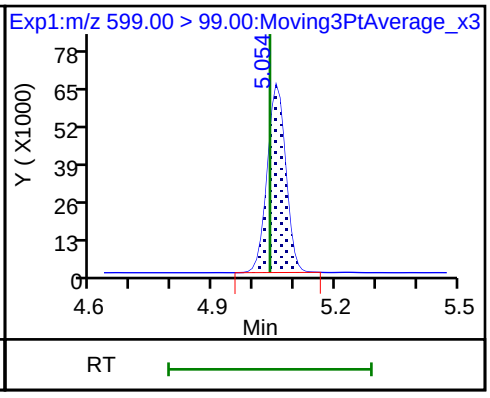
41 N-methylperfluorooctanesulfonami



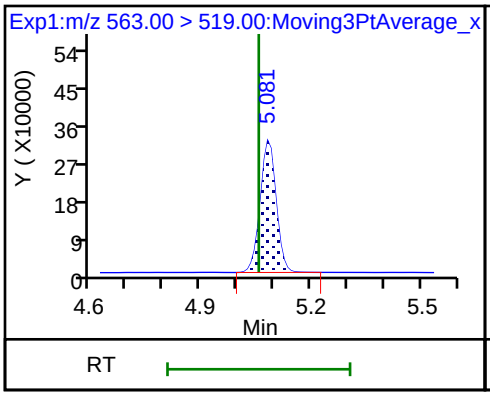
42 Perfluorodecanesulfonic acid



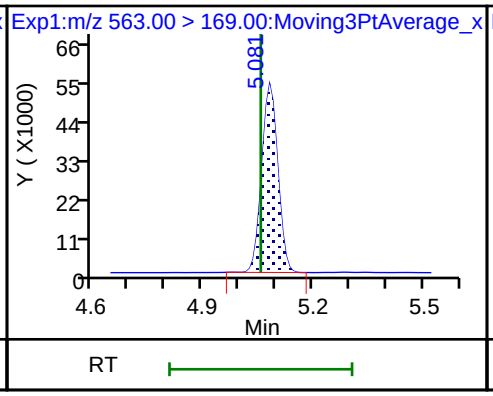
42 Perfluorodecanesulfonic acid



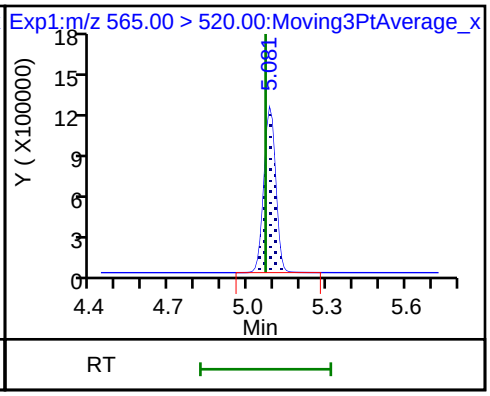
45 Perfluoroundecanoic acid



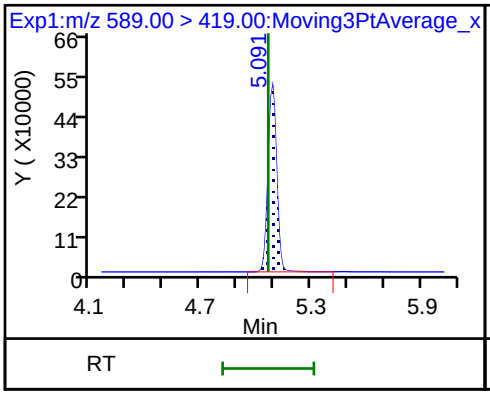
45 Perfluoroundecanoic acid



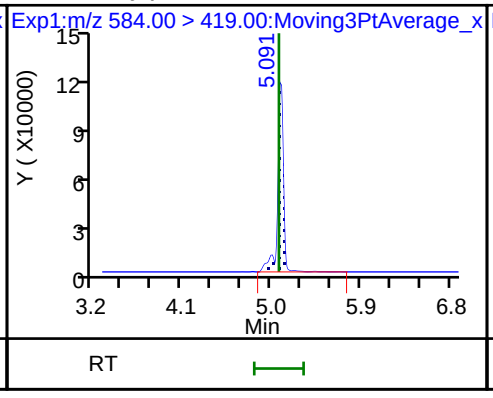
D 43 13C2 PFUnA



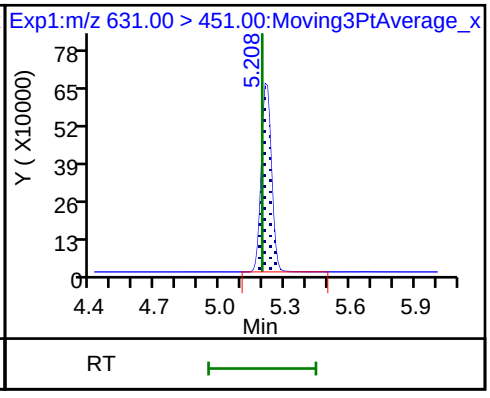
D 44 d5-NEtFOSAA



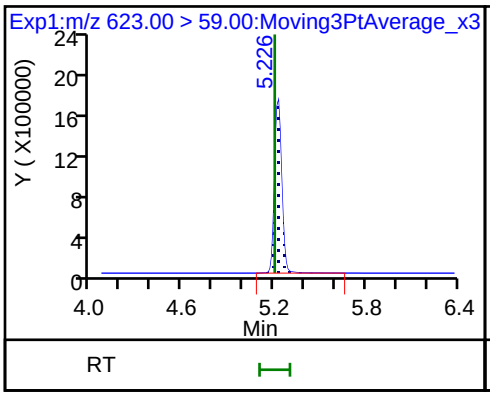
46 N-ethylperfluorooctanesulfonamid



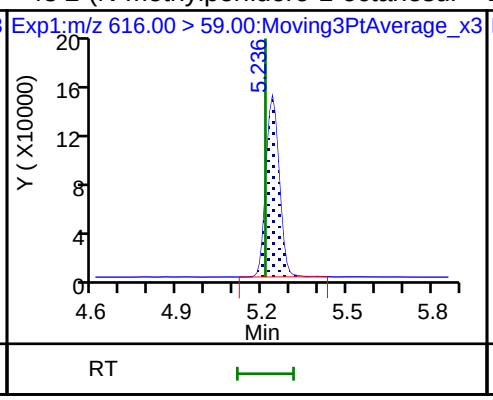
51 11-Chloroeicosafluoro-3-oxaundec



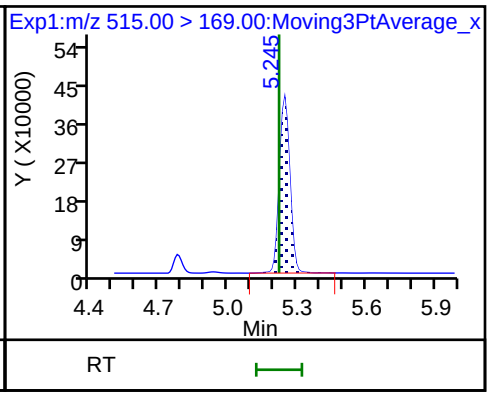
D 47 d7-N-MeFOSE-M



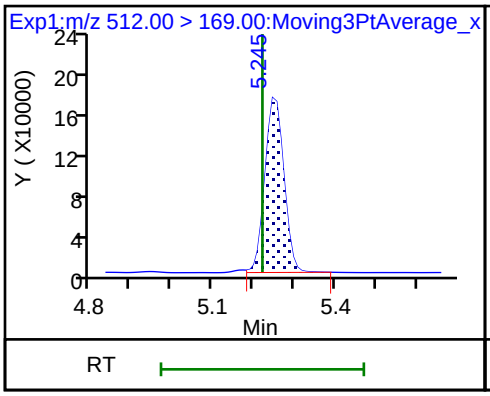
48 2-(N-methylperfluoro-1-octanesul



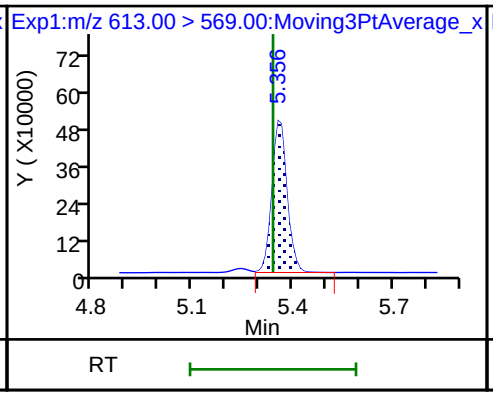
D 49 d-N-MeFOSA-M



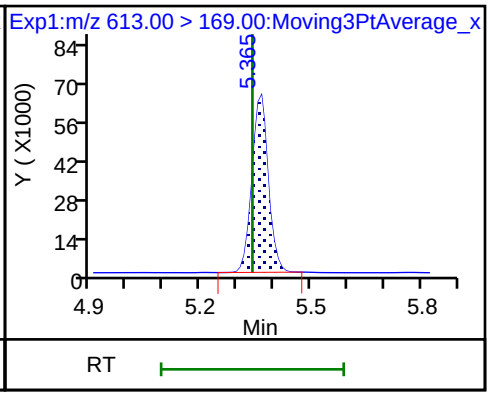
50 NMeFOSA



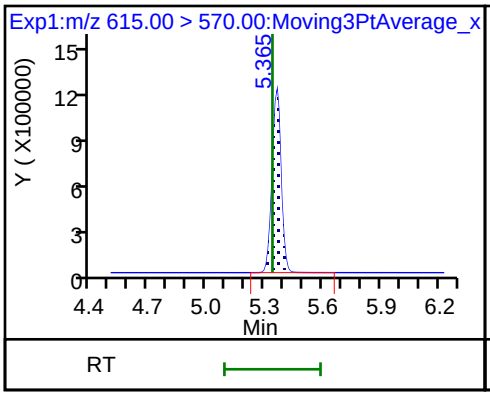
57 Perfluorododecanoic acid



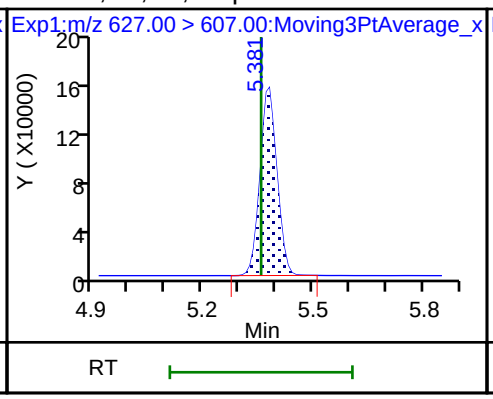
57 Perfluorododecanoic acid



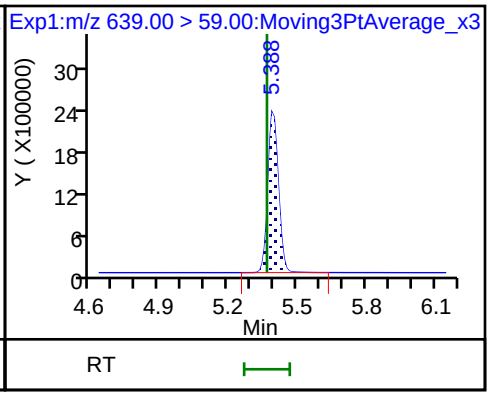
D 56 13C2 PFDoA



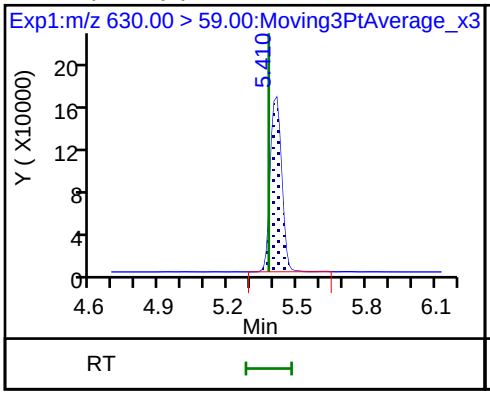
58 1H,1H,2H,2H-perfluorododecanesul



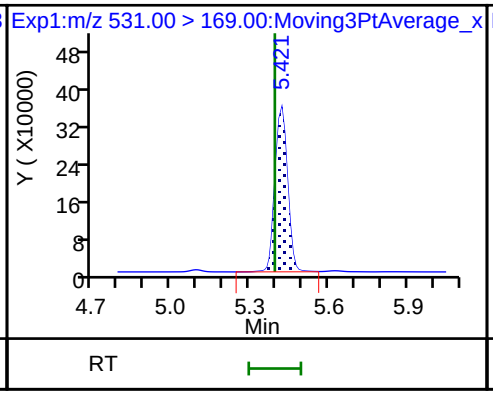
D 52 d9-N-EtFOSE-M



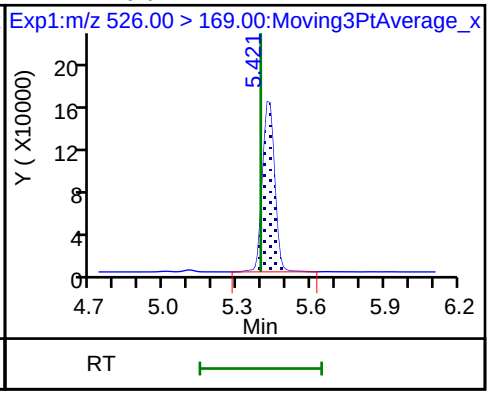
53 2-(N-ethylperfluoro-1-octanesulf



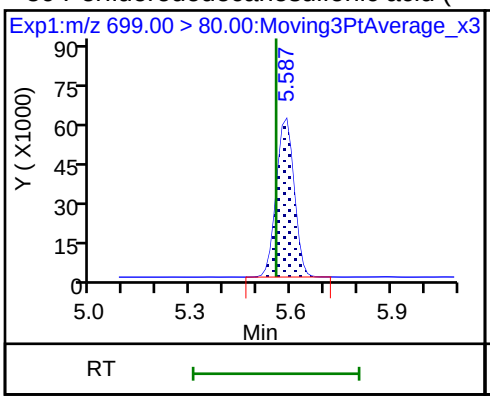
D 54 d-N-EtFOSA-M



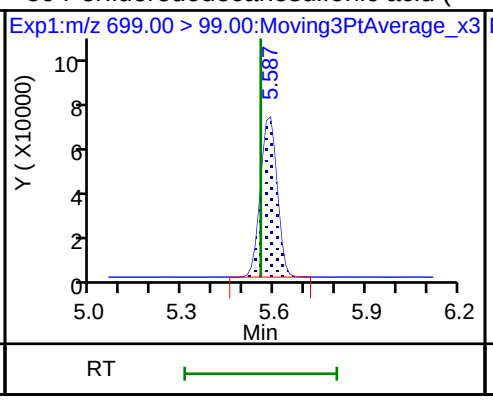
55 N-ethylperfluoro-1-octanesulfona



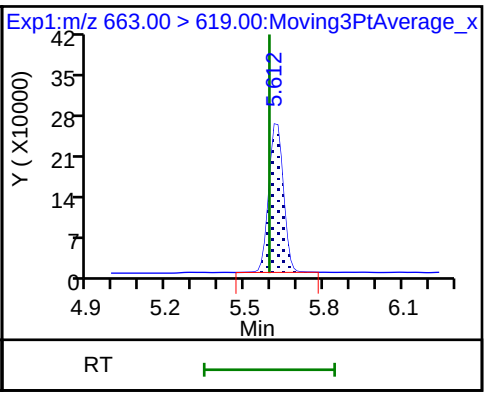
59 Perfluorododecanesulfonic acid (



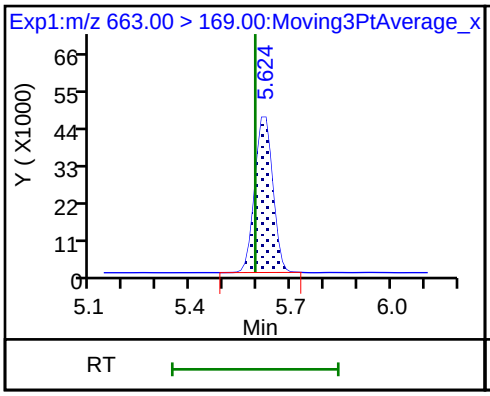
59 Perfluorododecanesulfonic acid (



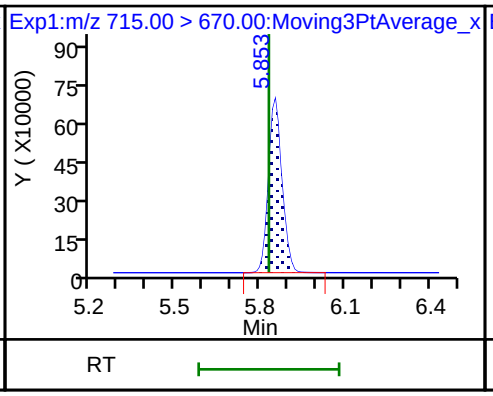
60 Perfluorotridecanoic acid



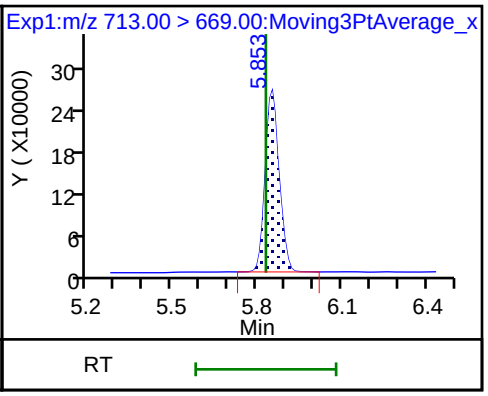
60 Perfluorotridecanoic acid



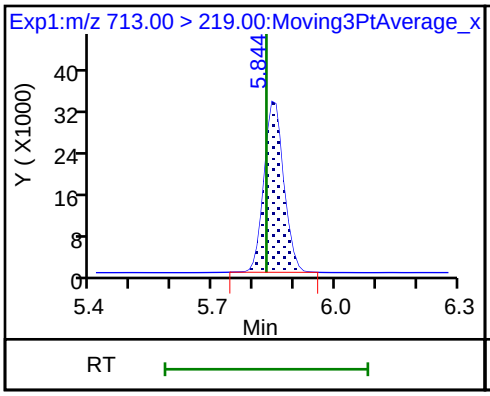
D 61 13C2 PFTeDA



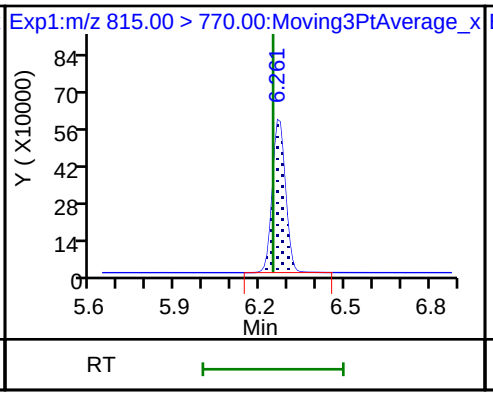
62 Perfluorotetradecanoic acid



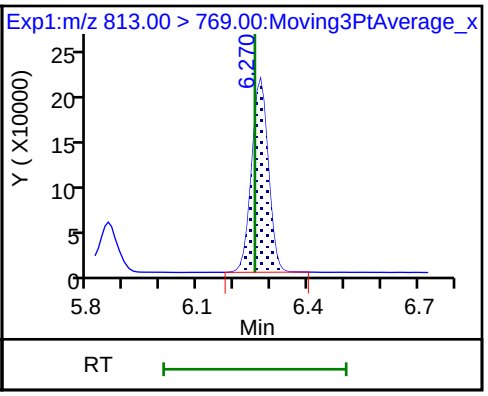
62 Perfluorotetradecanoic acid



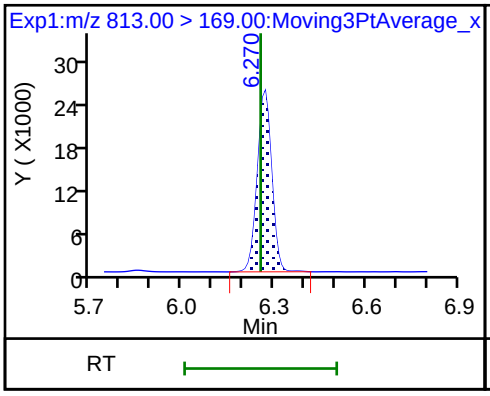
D 64 13C2 PFHxDA



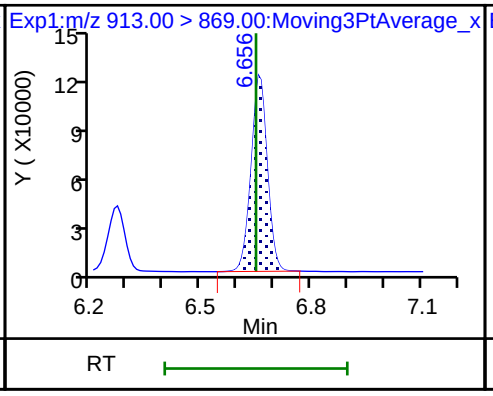
63 Perfluorohexadecanoic acid



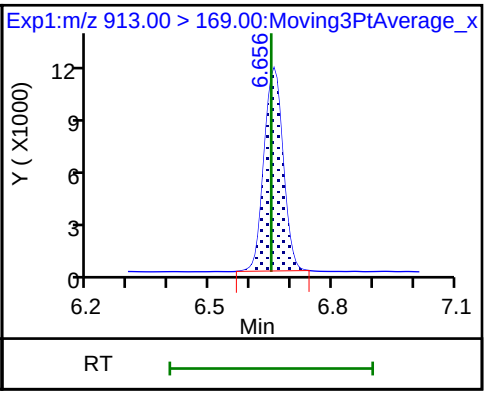
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: ICV 320-382530/11 Calibration Date: 06/02/2020 16:48

Instrument ID: A9 Calib Start Date: 06/02/2020 15:24

GC Column: Acquity ID: 2.10(mm) Calib End Date: 06/02/2020 16:30

Lab File ID: 2020.06.02_A9_PFC_ICAL_015.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.4794	0.5140		2.68	2.50	7.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.044	1.016		2.43	2.50	-2.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.087	1.274		2.93	2.50	17.3	50.0
4:2 FTS	AveID	2.868	3.153		2.57	2.34	9.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.037	1.187		2.86	2.50	14.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	1.009	1.016		2.36	2.35	0.8	50.0
HFPO-DA (GenX)	AveID	0.5790	0.6385		2.76	2.50	10.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.306	1.270		2.43	2.50	-2.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.179	1.161		2.46	2.50	-1.6	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	1.906	2.119		2.78	2.50	11.2	50.0
6:2 FTS	AveID	2.227	2.452		2.61	2.37	10.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.058	1.105		2.49	2.38	4.4	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.257	1.223		2.43	2.50	-2.7	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.091	1.095		2.51	2.50	0.4	40.0
Perfluorononanoic acid (PFNA)	AveID	1.089	1.331		3.06	2.50	22.3	40.0
F-53B Major	AveID	1.149	1.197		2.60	2.50	4.2	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6782	0.6513		2.30	2.40	-4.0	50.0
8:2 FTS	AveID	2.202	2.459		2.67	2.40	11.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.001	1.207		3.02	2.50	20.7	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	3.256	3.063		2.35	2.50	-5.9	40.0
NMeFOSAA	AveID	0.9274	0.9869		2.66	2.50	6.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8058	0.7763		2.32	2.41	-3.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7722	0.8111		2.63	2.50	5.0	40.0
NEtFOSAA	AveID	0.8961	0.9720		2.71	2.50	8.5	40.0
F-53B Minor	AveID	1.563	1.789		2.86	2.50	14.5	50.0
NMeFOSE	AveID	1.404	1.398		2.49	2.50	-0.4	40.0
NMeFOSA	AveID	0.8825	0.9487		2.69	2.50	7.5	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.048	0.9674		2.31	2.50	-7.7	40.0
10:2 FTS	AveID	1.964	2.051		2.52	2.41	4.4	50.0
NEtFOSE	AveID	1.470	1.537		2.61	2.50	4.5	40.0
NEtFOSA	AveID	1.280	1.296		2.53	2.50	1.3	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0899	0.0791		2.13	2.42	-12.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

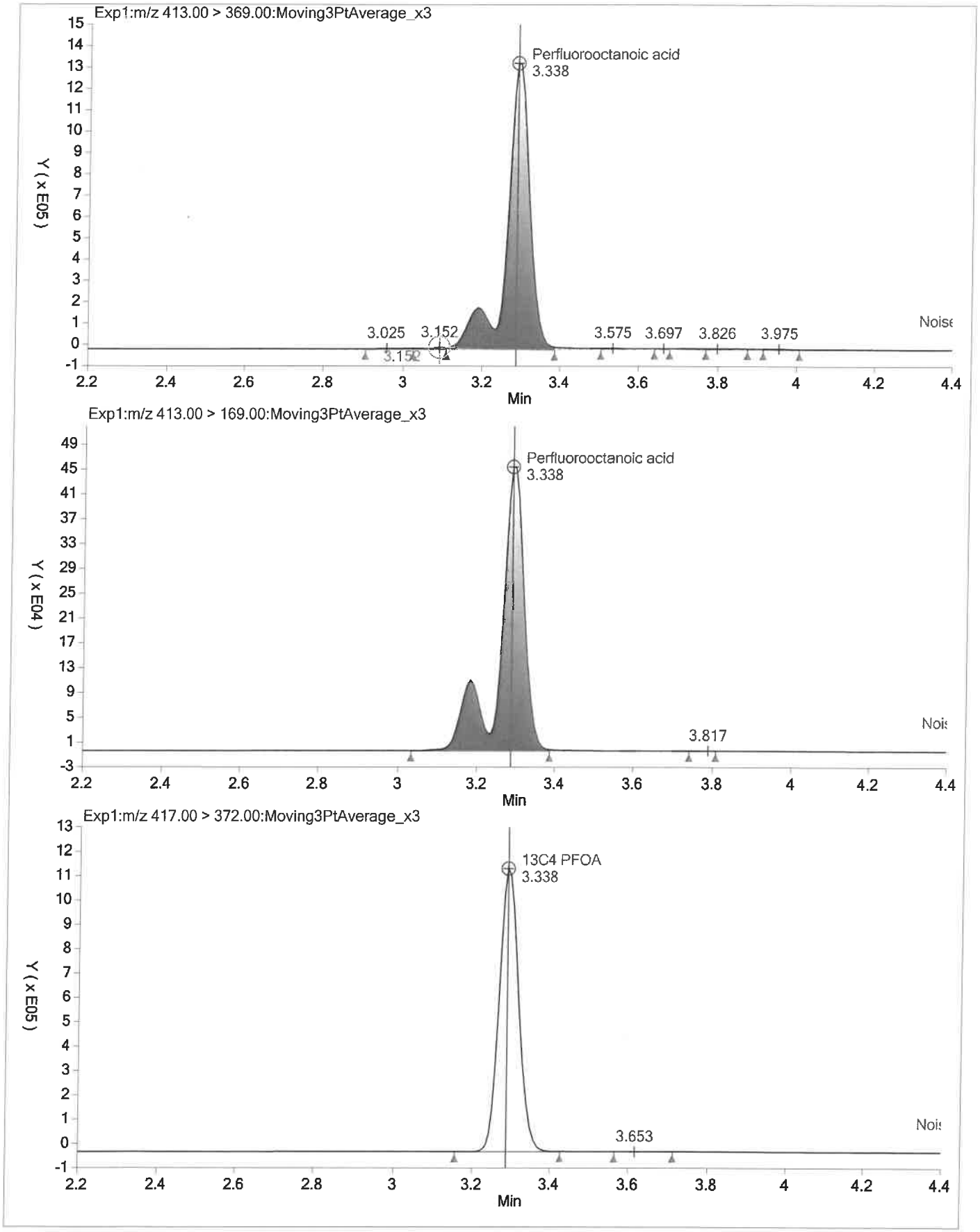
Lab Sample ID: ICV 320-382530/11 Calibration Date: 06/02/2020 16:48

Instrument ID: A9 Calib Start Date: 06/02/2020 15:24

GC Column: Acquity ID: 2.10(mm) Calib End Date: 06/02/2020 16:30

Lab File ID: 2020.06.02_A9_PFC_ICAL_015.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7140	0.6794		2.38	2.50	-4.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1699	0.1849		2.72	2.50	8.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8951		2.49	2.50	-0.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5681	0.5885		2.59	2.50	3.6	50.0
13C4 PFBA	Ave	1.205	1.204		2.50	2.50	-0.1	50.0
13C5 PFPeA	Ave	0.4352	0.4414		2.54	2.50	1.4	50.0
13C3 PFBS	Ave	0.5598	0.5751		2.39	2.33	2.7	50.0
M2-4:2 FTS	Ave	0.1177	0.1185		2.35	2.34	0.7	50.0
13C2 PFHxA	Ave	0.8637	0.8775		2.54	2.50	1.6	50.0
13C3 HFPO-DA	Ave	0.5521	0.5611		2.54	2.50	1.6	50.0
13C4 PFHpA	Ave	0.7783	0.8198		2.63	2.50	5.3	50.0
18O2 PFHxS	Ave	0.7377	0.7907		2.53	2.37	7.2	50.0
M2-6:2 FTS	Ave	0.0988	0.1052		2.53	2.38	6.5	50.0
13C4 PFOA	Ave	0.9544	1.018		2.67	2.50	6.7	50.0
13C4 PFOS	Ave	0.9416	0.9762		2.48	2.39	3.7	50.0
13C5 PFNA	Ave	0.9381	0.996		2.65	2.50	6.2	50.0
13C2 PFDA	Ave	1.098	1.130		2.57	2.50	2.9	50.0
13C8 FOSA	Ave	0.3734	0.3963		2.65	2.50	6.1	50.0
M2-8:2 FTS	Ave	0.1176	0.1276		2.60	2.40	8.5	50.0
d3-NMeFOSAA	Ave	0.4372	0.4342		2.48	2.50	-0.7	50.0
13C2 PFUnA	Ave	0.9597	1.008		2.63	2.50	5.0	50.0
d5-NEtFOSAA	Ave	0.3319	0.3461		2.61	2.50	4.3	50.0
d7-N-MeFOSE-M	Ave	0.1093	0.1161		13.3	12.5	6.2	50.0
d-N-MeFOSA-M	Ave	0.2211	0.2354		2.66	2.50	6.5	50.0
13C2 PFDoA	Ave	0.9094	0.9685		2.66	2.50	6.5	50.0
d9-N-EtFOSE-M	Ave	0.1102	0.1120		12.7	12.5	1.6	50.0
d-N-EtFOSA-M	Ave	0.1665	0.1770		2.66	2.50	6.3	50.0
13C2 PFTeDA	Ave	0.8835	0.8109		2.29	2.50	-8.2	50.0
13C2 PFHxDA	Ave	0.8563	0.8126		2.37	2.50	-5.1	50.0


Exp1:m/z 413.00 > 369.00:Moving3PtAverage_x3
Perfluorooctanoic acid
3.338
3.025
3.152
3.575
3.697
3.826
3.975
Y (x E05)
Min
Exp1:m/z 413.00 > 169.00:Moving3PtAverage_x3
Perfluorooctanoic acid
3.338
3.817
Y (x E04)
Min
Exp1:m/z 417.00 > 372.00:Moving3PtAverage_x3
13C4 PFOA
3.338
3.653
Y (x E05)
Min

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_015.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 02-Jun-2020 16:48:47 ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: ICV (36)
Misc. Info.: Plate: 1 Rack: 3
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist:

Method: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 02-Jun-2020 20:39:24 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1042

First Level Reviewer: adamst Date: 02-Jun-2020 20:38:32
Ratio Calibration: Average of Initial Calibration

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	1.893	1.893	-0.001	0.567	4556263	2.50		99.9	6661	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.893	1.901	-0.009	1.000	2341740	2.68			2164	
D 4 13C5 PFPeA										
267.90 > 223.00	2.198	2.198	0.0	0.658	1670512	2.54		101	6016	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.198	2.198	0.0	1.000	1697228	2.43			369	
D 6 13C3 PFBS										
301.90 > 80.00	2.223	2.233	-0.010	0.666	2024092	2.39		103	4195	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.223	2.233	-0.010	1.000	2773380	2.93	Target=2.39		1845	
298.90 > 99.00	2.223	2.233	-0.010	1.000	1179979		2.35(1.20-3.59)		1598	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.514	2.515	-0.001	0.753	418716	2.35		101	2774	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.514	2.515	-0.001	1.000	1320178	2.57			6021	
D 10 13C2 PFHxA										
315.00 > 270.00	2.546	2.558	-0.012	0.762	3320716	2.54		102	6264	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.546	2.558	-0.012	1.000	3942584	2.86	Target=15.64		1757	
313.00 > 119.00	2.546	2.558	-0.012	1.000	260922		15.11(7.82-23.46)		1251	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.568	2.568	0.0	1.155	2075142	2.36	Target=1.75		3584	
349.00 > 99.00	2.568	2.568	0.0	1.155	1180073		1.76(0.88-2.63)		2391	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.660	2.674	-0.014	0.796	2123166	2.54		102	4972	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.673	2.674	-0.001	1.005	1355528	2.76			3568	
D 15 13C4 PFHpA										
367.00 > 322.00	2.936	2.941	-0.005	0.879	3102448	2.63		105	6617	
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.936	2.941	-0.005	1.000	3939910	2.43	Target=4.39		1479	
363.00 > 169.00	2.936	2.941	-0.005	1.000	905504		4.35(2.20-6.59)		1655	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.942	2.946	-0.004	1.000	3473064	2.46	Target=3.04		2340	
399.00 > 99.00	2.942	2.946	-0.004	1.000	1093261		3.18(1.52-4.56)		1166	M
D 17 18O2 PFHxS										
403.00 > 84.00	2.942	2.946	-0.004	0.881	2830579	2.53		107	4364	
19 DONA										
377.00 > 251.00	2.982	2.994	-0.012	0.803	7826451	2.78	Target=2.17		9894	
377.00 > 85.00	2.982	2.994	-0.012	0.803	3699926		2.12(1.09-3.26)		7034	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.319	3.324	-0.005	0.994	378305	2.53		107	2873	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.319	3.324	-0.005	1.000	925622	2.61			3513	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.333	3.338	-0.005	0.897	3884552	2.49	Target=3.82		2800	
449.00 > 99.00	3.333	3.338	-0.005	0.897	1017646		3.82(1.91-5.72)		2533	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.340	3.346	-0.006	1.000	4712381	2.43	Target=2.82		350	
413.00 > 169.00	3.340	3.346	-0.006	1.000	1664430		2.83(1.41-4.23)		463	
D 26 13C4 PFOA										
417.00 > 372.00	3.340	3.346	-0.006	1.000	3852343	2.67		107	5546	
* 25 13C2 PFOA										
415.00 > 370.00	3.340	3.346	-0.006		3784278	2.50			8250	
D 31 13C4 PFOS										
503.00 > 80.00	3.715	3.720	-0.005	1.112	3531473	2.48		104	5148	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.715	3.720	-0.005	1.000	4045344	2.51	Target=4.25		7393	
499.00 > 99.00	3.715	3.720	-0.005	1.000	891014		4.54(2.13-6.38)		1816	M
D 29 13C5 PFNA										
468.00 > 423.00	3.731	3.736	-0.005	1.117	3769522	2.65		106	7077	
30 Perfluorononanoic acid										
463.00 > 419.00	3.731	3.736	-0.005	1.000	5017983	3.06	Target=5.46		1370	
463.00 > 169.00	3.731	3.736	-0.005	1.000	856803		5.86(2.73-8.19)		2968	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.922	3.928	-0.006	1.056	4421052	2.60			3758	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.061	4.065	-0.004	1.093	2309529	2.30	Target=4.97		4845	
549.00 > 99.00	4.061	4.065	-0.004	1.093	470164		4.91(2.48-7.45)		1722	
D 36 13C8 FOSA										
506.00 > 78.00	4.088	4.092	-0.004	1.224	1499663	2.65		106	3568	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.088	4.092	-0.004	1.000	4593821	2.35			4001	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
38 Perfluorodecanoic acid										
513.00 > 469.00	4.088	4.092	-0.004	1.000	5161267	3.02	Target=14.66		1789	
513.00 > 169.00	4.088	4.092	-0.004	1.000	339389		15.21(7.33-21.99)		305	
D 33 13C2 PFDA										
515.00 > 470.00	4.088	4.092	-0.004	1.224	4274534	2.57		103	5154	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.088	4.092	-0.004	1.224	462397	2.60		108	2387	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.088	4.101	-0.013	1.000	1137097	2.67			5814	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.249	4.262	-0.013	1.272	1643208	2.48		99.3	2891	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.258	4.262	-0.004	1.002	1621622	2.66			535	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.380	4.384	-0.004	1.179	2764453	2.32	Target=4.49		3537	
599.00 > 99.00	4.380	4.384	-0.004	1.179	614948		4.50(2.25-6.74)		2226	
D 46 13C2 PFUnA										
565.00 > 520.00	4.406	4.410	-0.004	1.319	3813957	2.63		105	9177	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.406	4.418	-0.012	1.000	3093299	2.63	Target=10.82		1067	
563.00 > 169.00	4.406	4.418	-0.012	1.000	299672		10.32(5.41-16.23)		233	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.415	4.418	-0.003	1.322	1309796	2.61		104	1958	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.423	4.427	-0.004	1.002	1273104	2.71			3199	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.543	4.547	-0.004	1.223	6610087	2.86			8342	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.552	4.555	-0.003	1.363	2197190	13.3		106	4826	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.561	4.564	-0.003	1.002	614251	2.49			2492	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.570	4.573	-0.003	1.368	890973	2.66		107	249	
50 NMeFOSA										
512.00 > 169.00	4.579	4.582	-0.003	1.002	845301	2.69			1580	
D 56 13C2 PFDoA										
615.00 > 570.00	4.691	4.695	-0.004	1.404	3665185	2.66		107	6606	
52 Perfluorododecanoic acid										
613.00 > 569.00	4.700	4.704	-0.004	1.002	3545822	2.31	Target=8.20		686	
613.00 > 169.00	4.691	4.704	-0.013	1.000	440082		8.06(4.10-12.30)		530	
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.709	4.723	-0.014	1.152	954349	2.52			3234	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.719	4.723	-0.004	1.413	2118317	12.7		102	4678	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.737	4.741	-0.004	1.004	651049	2.61			2679	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.746	4.748	-0.002	1.421	669768	2.66		106	1243	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.754	4.756	-0.002	1.002	868247	2.53			751	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.924	4.927	-0.003	1.325	282791	2.13	Target=0.67		1760	
699.00 > 99.00	4.924	4.927	-0.003	1.325	456771		0.62(0.33-1.00)		2636	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.958	4.961	-0.003	1.057	2490095	2.38	Target=5.48		1356	
663.00 > 169.00	4.958	4.961	-0.003	1.057	449641		5.54(2.74-8.23)		394	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.192	5.195	-0.003	1.554	3068585	2.29		91.8	7307	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.192	5.203	-0.011	1.000	567502	2.72	Target=1.49		664	
713.00 > 219.00	5.192	5.203	-0.011	1.000	392774		1.44(0.75-2.24)		300	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.622	5.625	-0.003	1.683	3075022	2.37		94.9	4343	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.622	5.625	-0.003	1.000	2752374	2.49	Target=5.24		547	
813.00 > 169.00	5.622	5.625	-0.003	1.000	523650		5.26(2.62-7.87)		3291	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.020	6.023	-0.003	1.071	1809572	2.59	Target=4.86		452	
913.00 > 169.00	6.020	6.023	-0.003	1.071	369354		4.90(2.43-7.29)		922	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFCIC_FULL_00036 Amount Added: 1.00 Units: mL

Report Date: 02-Jun-2020 20:39:24 Chrom Revision: 2.3 12-May-2020 19:48:58

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_015.d

Injection Date: 02-Jun-2020 16:48:47 Instrument ID: A9

Lims ID: ICV

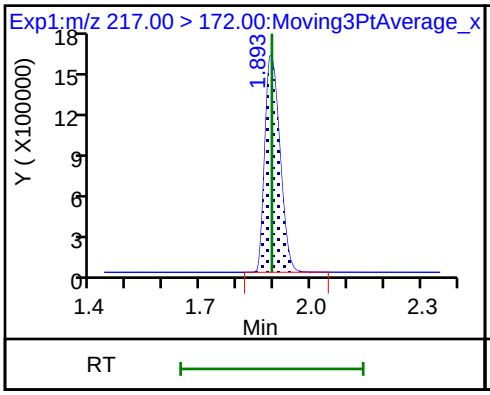
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 9 Worklist Smp#: 11

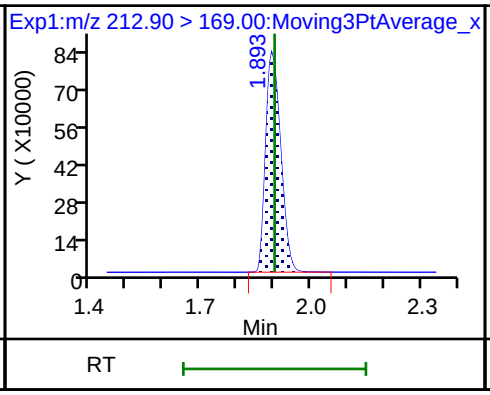
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

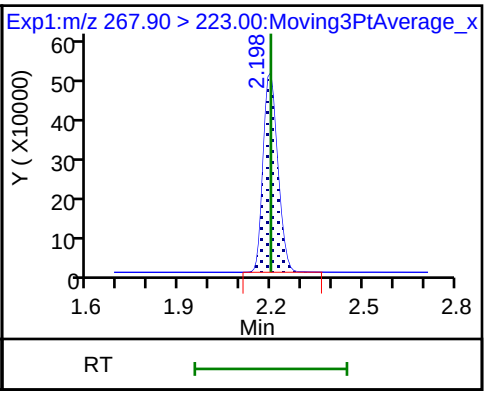
D 1 13C4 PFBA



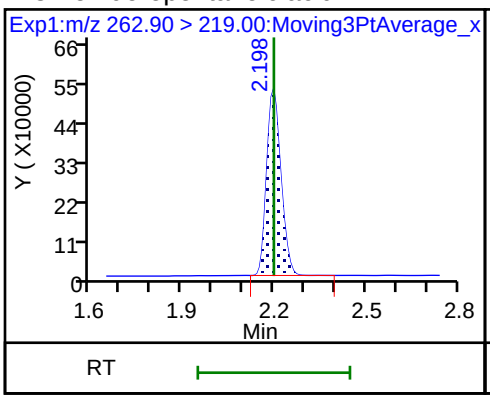
2 Perfluorobutanoic acid



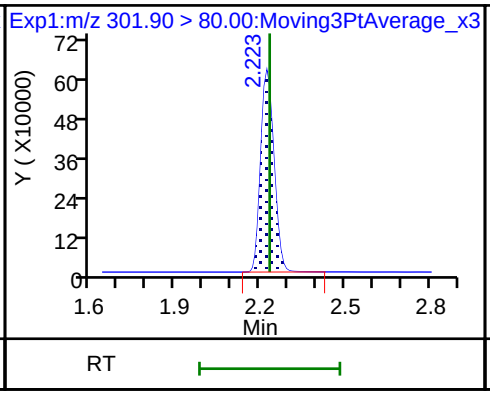
D 4 13C5 PFPeA



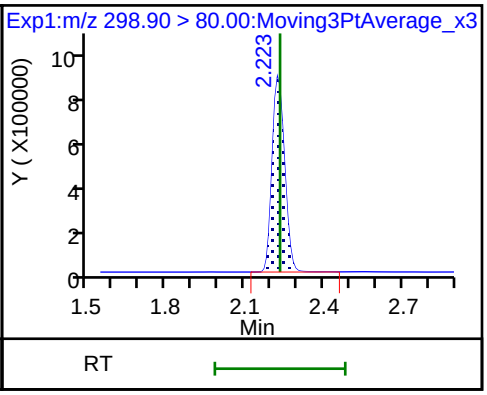
3 Perfluoropentanoic acid



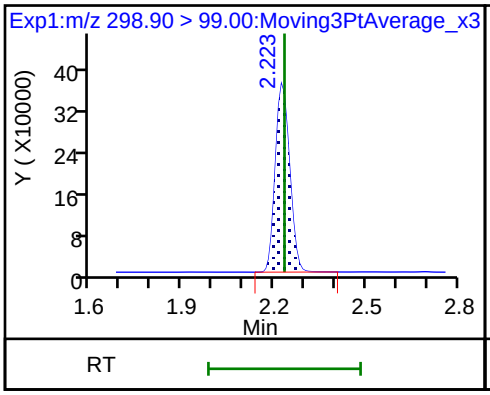
D 6 13C3 PFBS



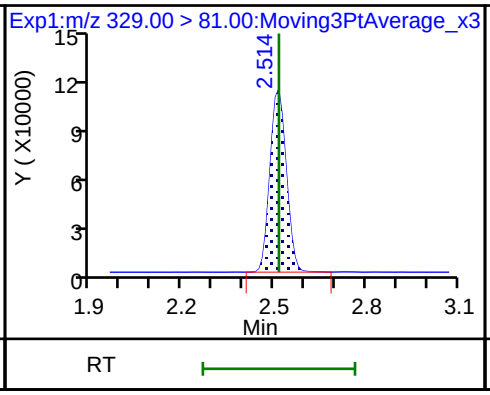
5 Perfluorobutanesulfonic acid



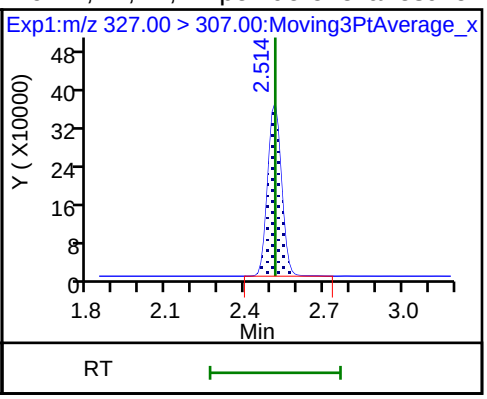
5 Perfluorobutanesulfonic acid



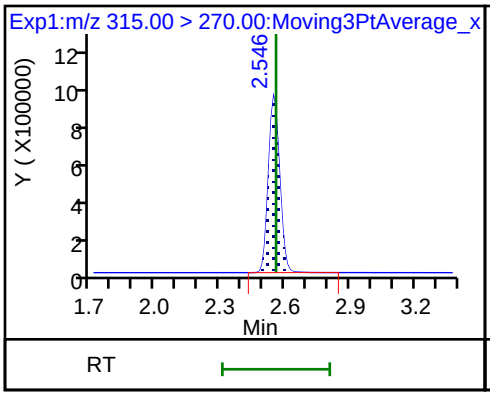
D 8 M2-4:2 FTS



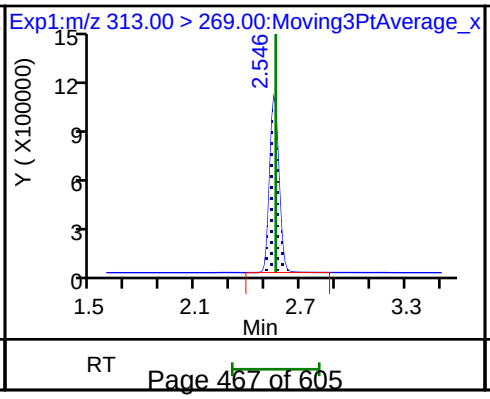
9 1H,1H,2H,2H-perfluorohexanesulfo



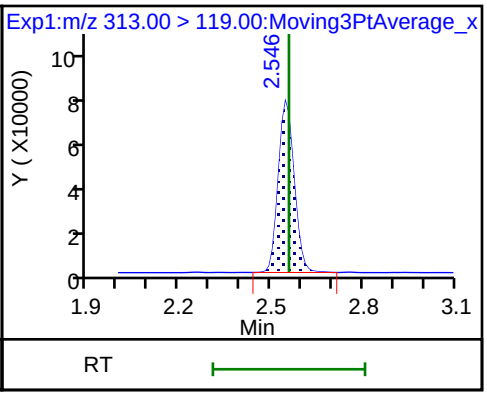
D 10 13C2 PFHxA



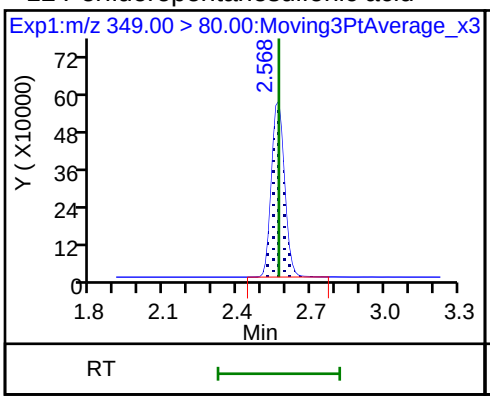
11 Perfluorohexanoic acid



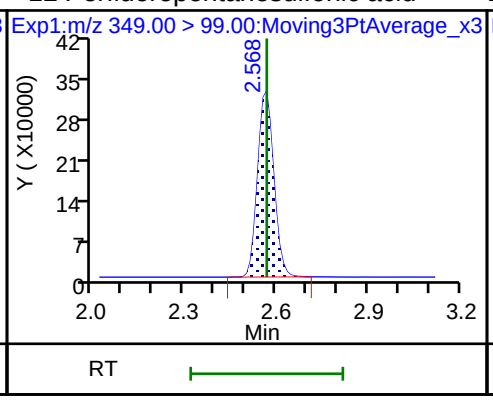
11 Perfluorohexanoic acid



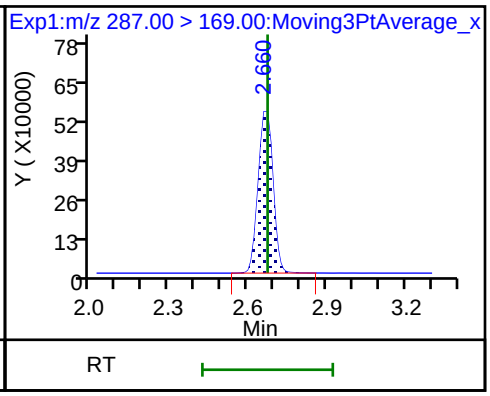
12 Perfluoropentanesulfonic acid



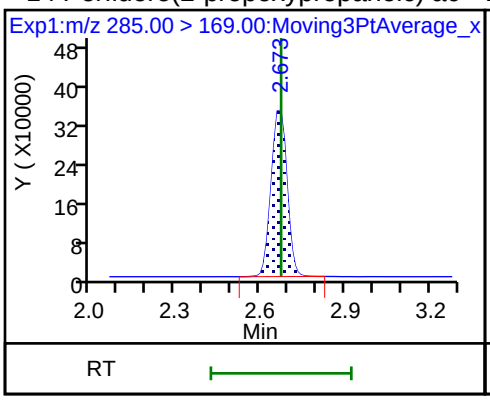
12 Perfluoropentanesulfonic acid



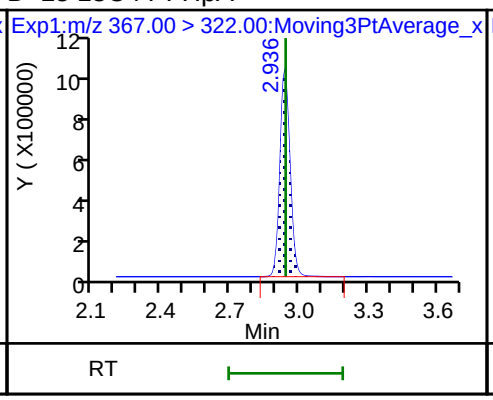
D 13 13C3 HFPO-DA



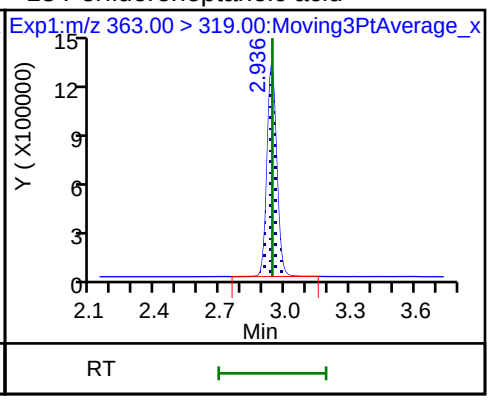
14 Perfluoro(2-propoxypropanoic) ac



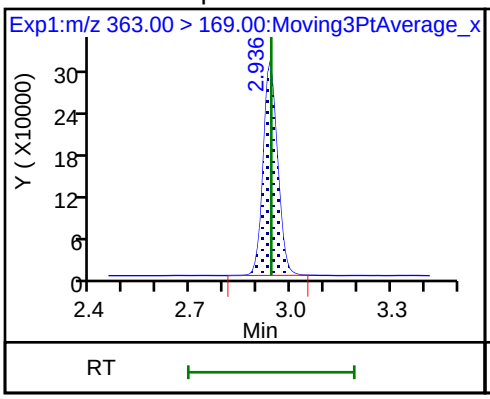
D 15 13C4 PFHpA



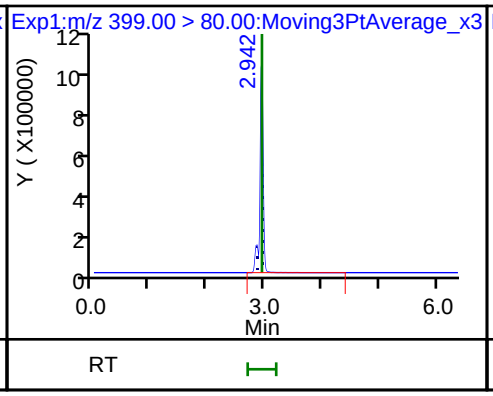
18 Perfluoroheptanoic acid



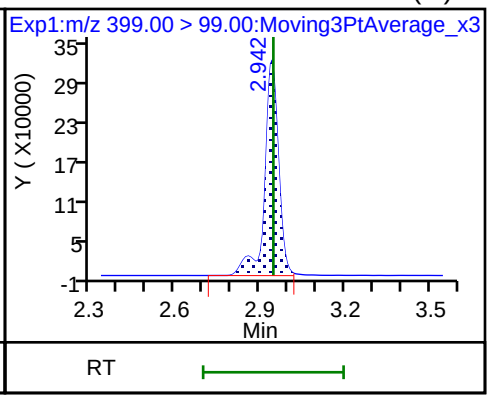
18 Perfluoroheptanoic acid



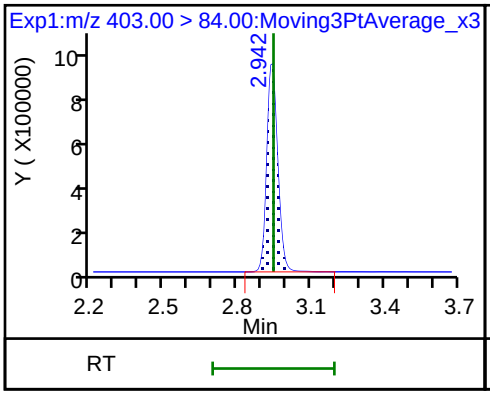
16 Perfluorohexanesulfonic acid



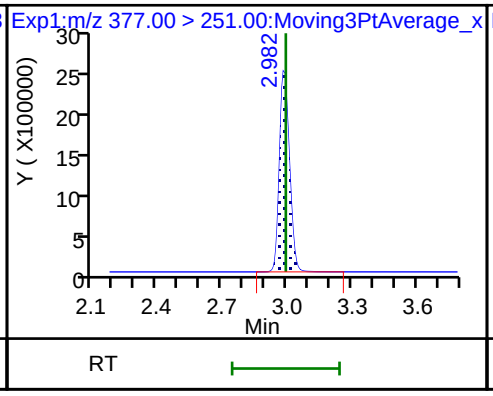
16 Perfluorohexanesulfonic acid (M)



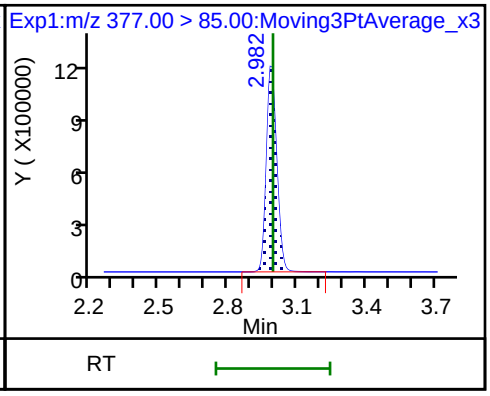
D 17 18O2 PFHxS



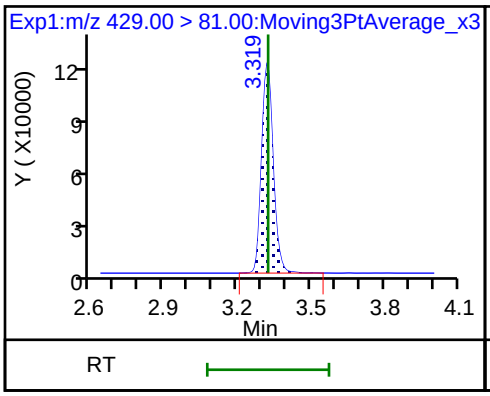
19 DONA



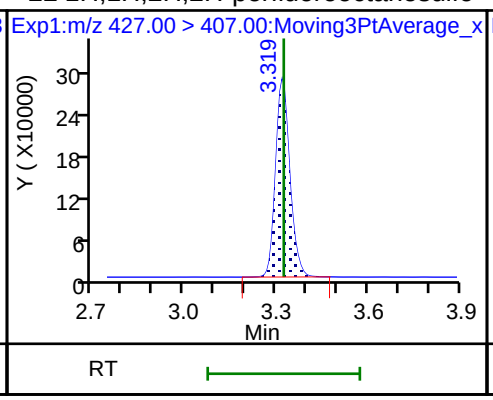
19 DONA



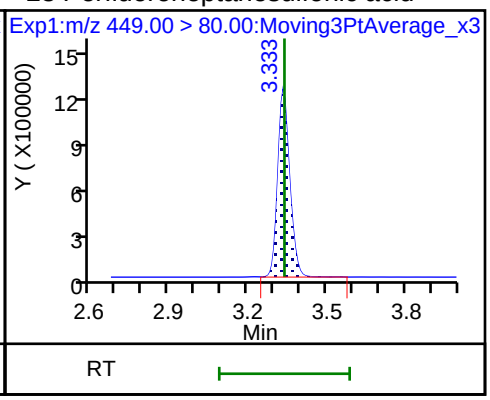
D 20 M2-6:2 FTS



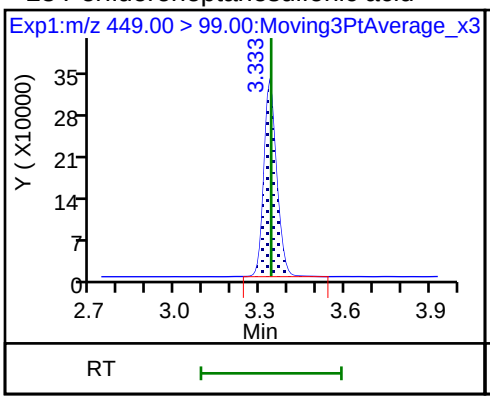
22 1H,1H,2H,2H-perfluorooctanesulfo



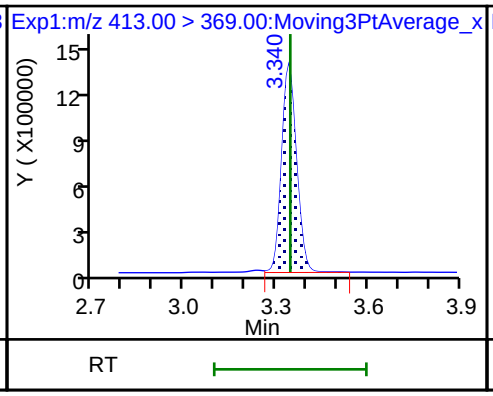
23 Perfluoroheptanesulfonic acid



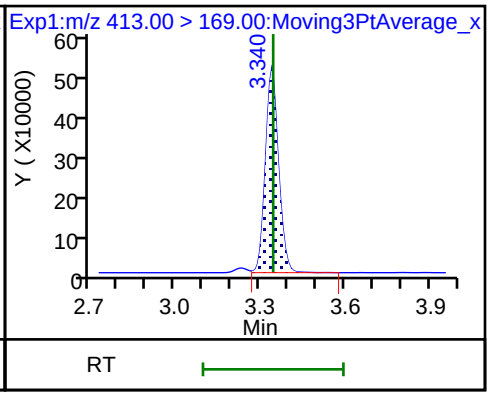
23 Perfluoroheptanesulfonic acid



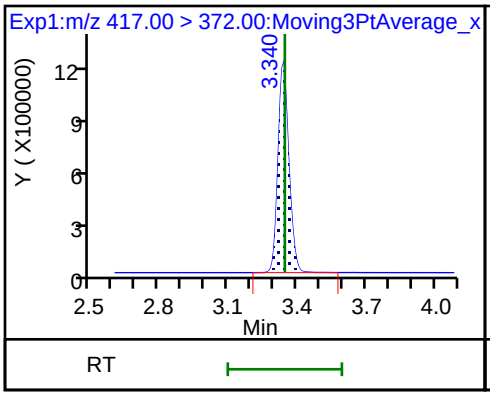
24 Perfluorooctanoic acid



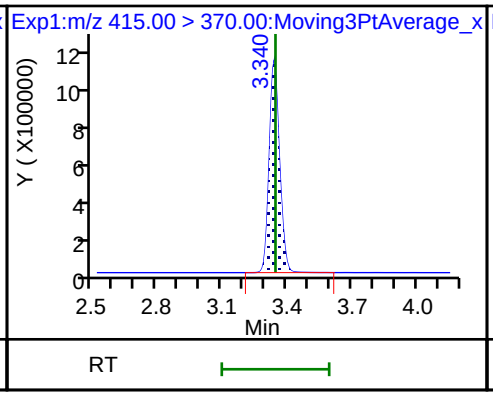
24 Perfluorooctanoic acid



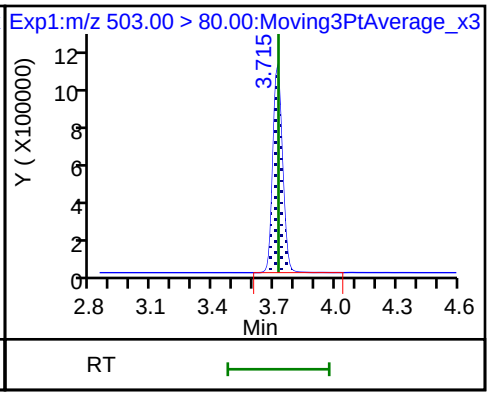
D 26 13C4 PFOA



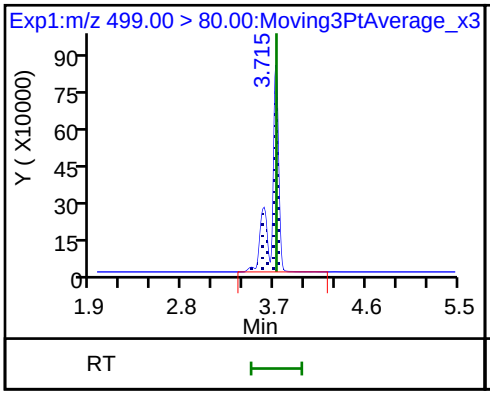
* 25 13C2 PFOA



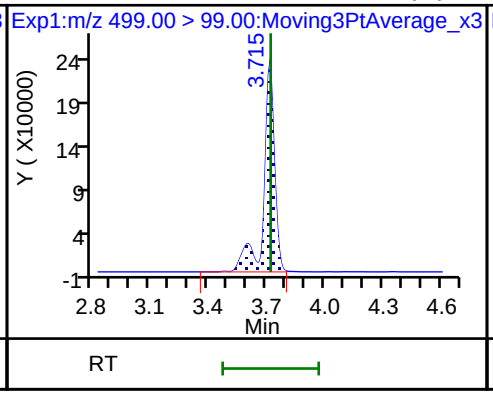
D 31 13C4 PFOS



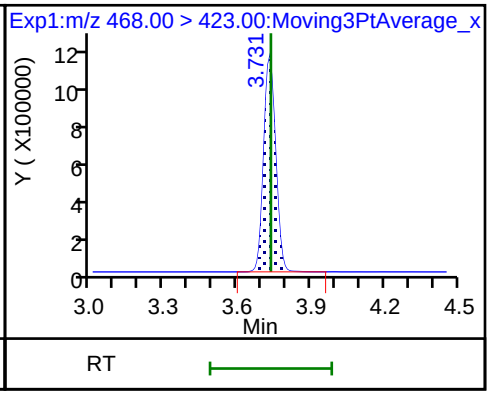
28 Perfluorooctanesulfonic acid



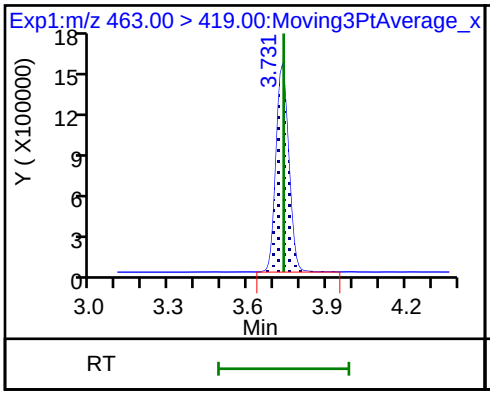
28 Perfluorooctanesulfonic acid (M)



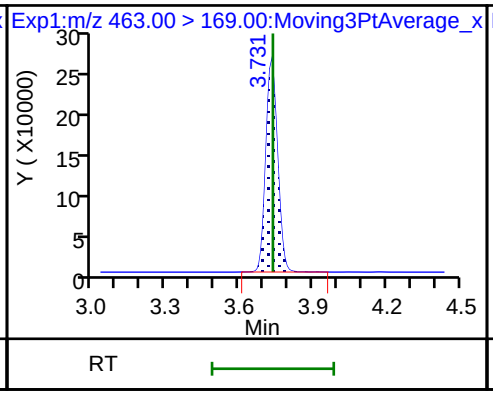
D 29 13C5 PFNA



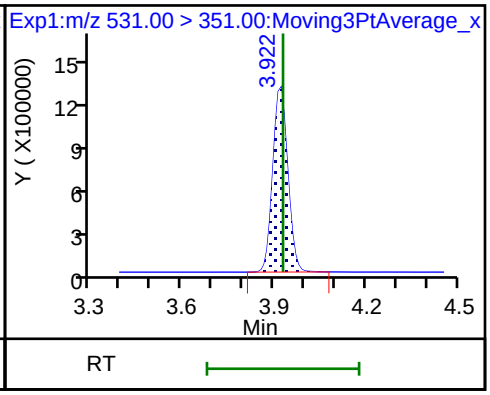
30 Perfluorononanoic acid



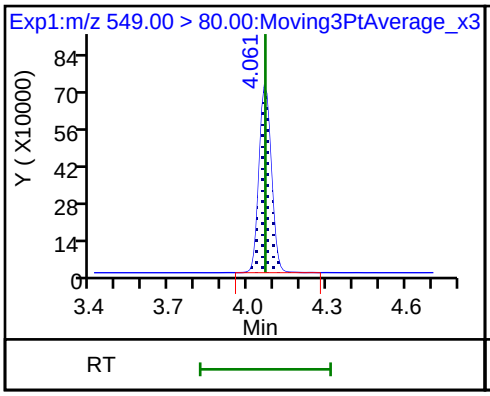
30 Perfluorononanoic acid



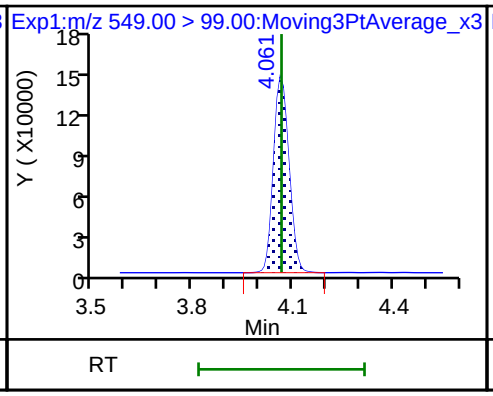
32 9-Chlorohexadecafluoro-3-oxanona



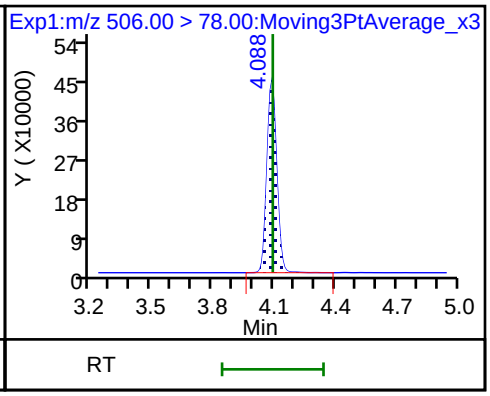
35 Perfluorononanesulfonic acid



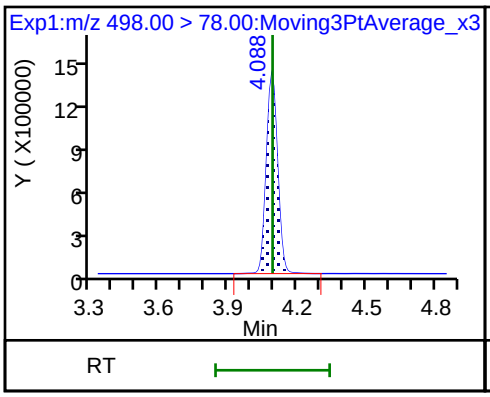
35 Perfluorononanesulfonic acid



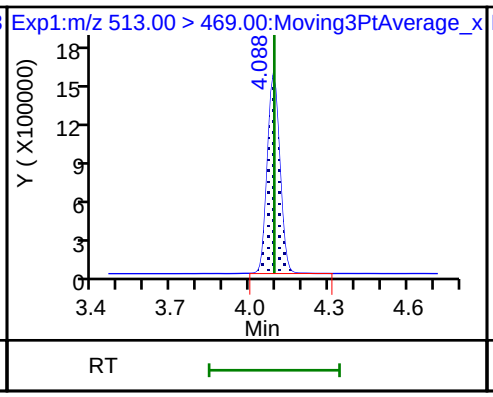
D 36 13C8 FOSA



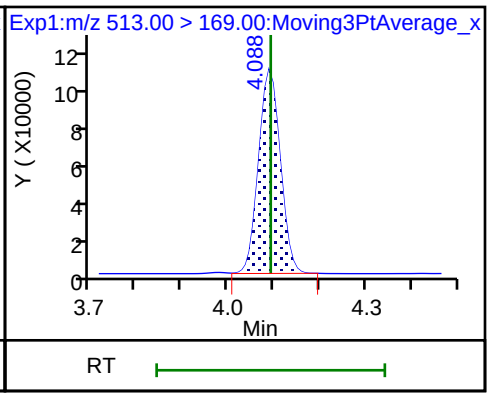
34 Perfluorooctanesulfonamide



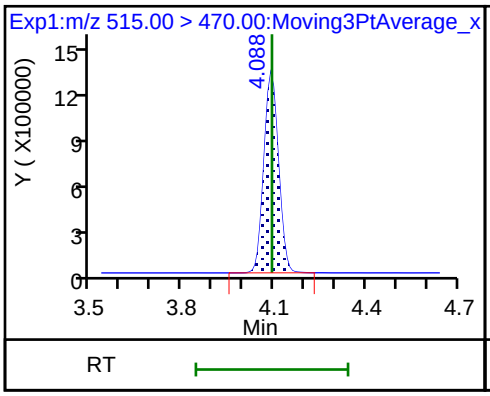
38 Perfluorodecanoic acid



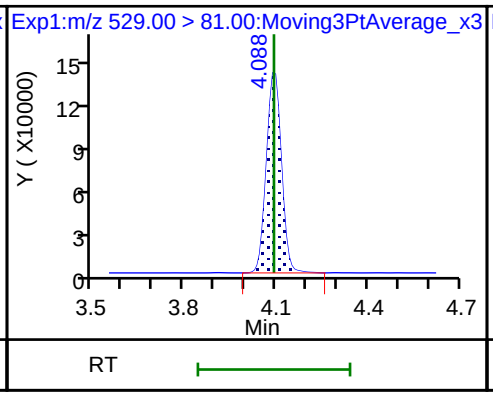
38 Perfluorodecanoic acid



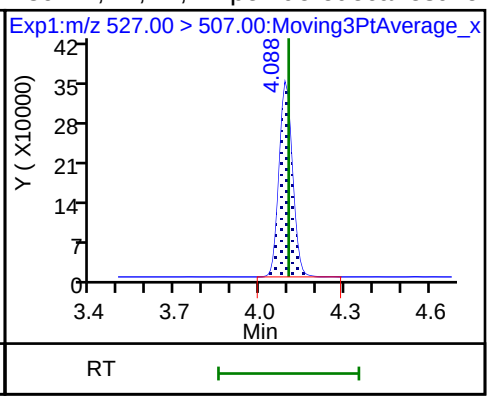
D 33 13C2 PFDA



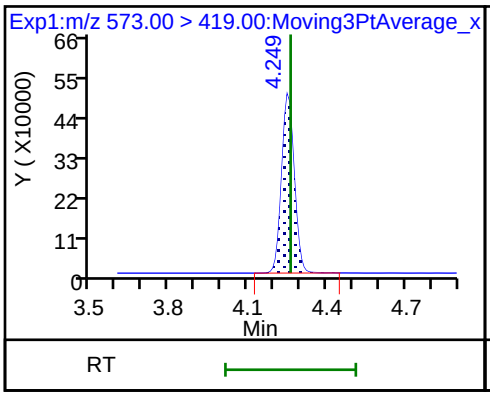
D 37 M2-8:2 FTS



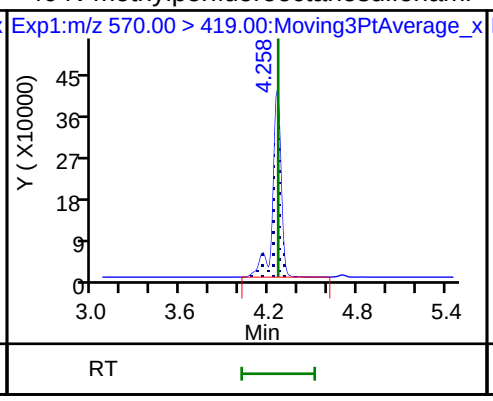
39 1H,1H,2H,2H-perfluorodecanesulfo



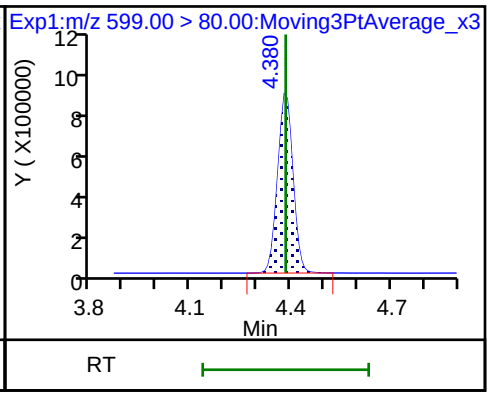
D 41 d3-NMeFOSAA



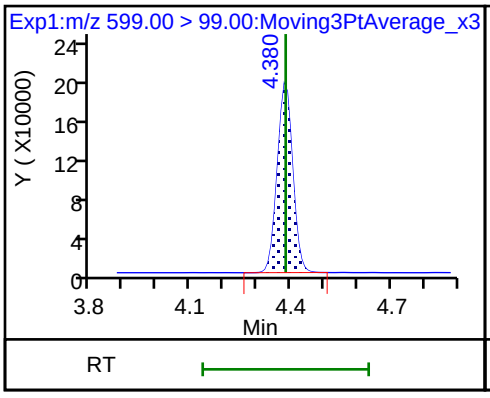
40 N-methylperfluorooctanesulfonami



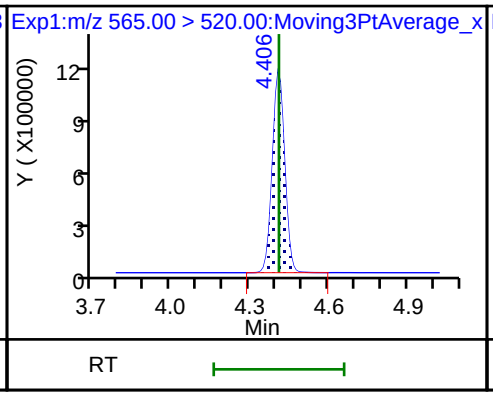
42 Perfluorodecanesulfonic acid



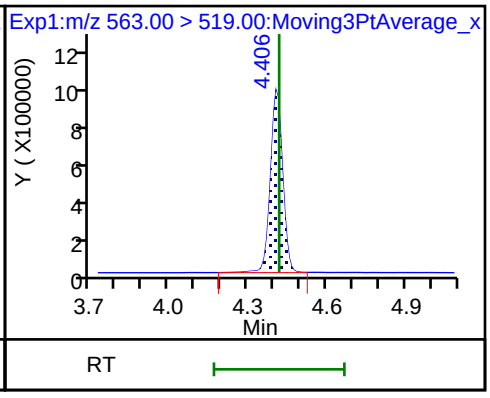
42 Perfluorodecanesulfonic acid



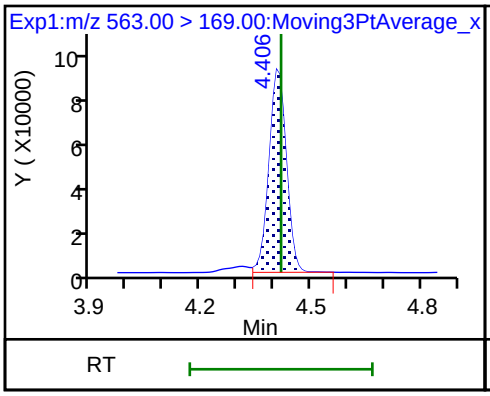
D 46 13C2 PFUnA



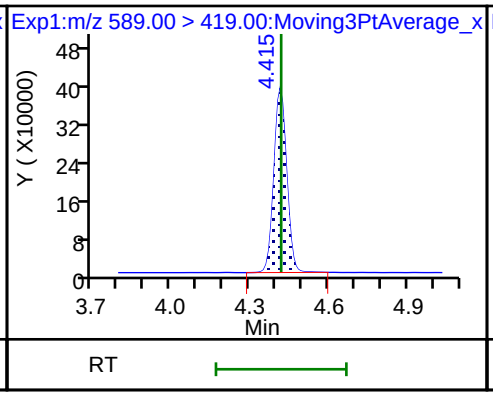
43 Perfluoroundecanoic acid



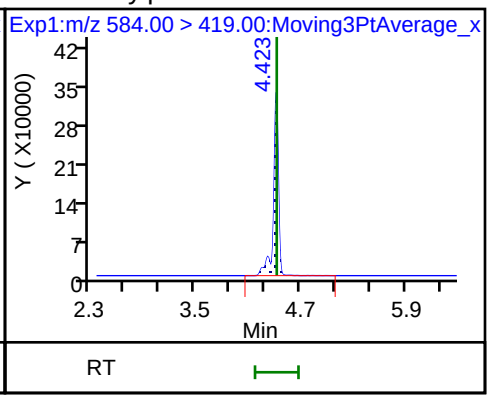
43 Perfluoroundecanoic acid



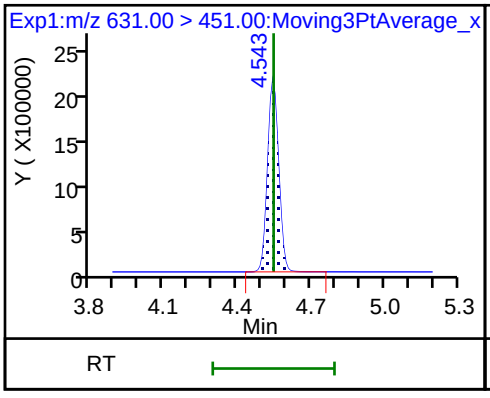
D 45 d5-NEtFOSAA



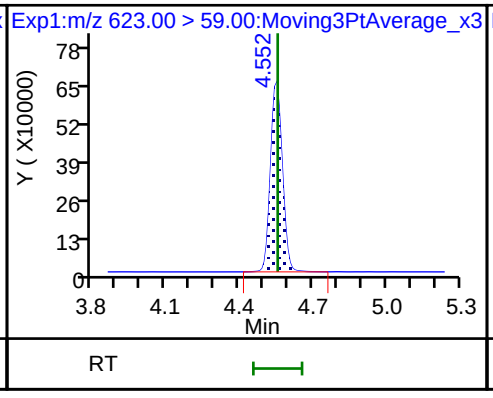
44 N-ethylperfluorooctanesulfonamid



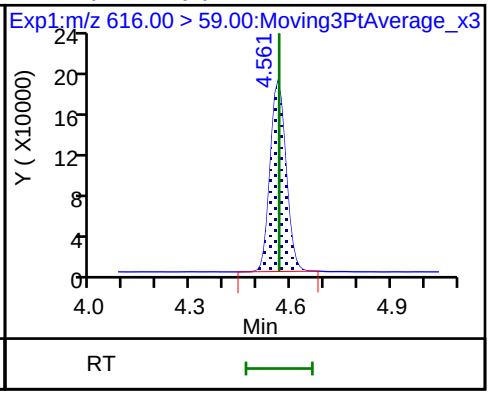
51 11-Chloroeicosafluoro-3-oxaundec



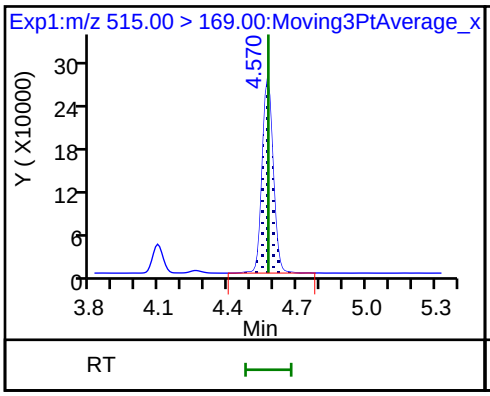
D 47 d7-N-MeFOSE-M



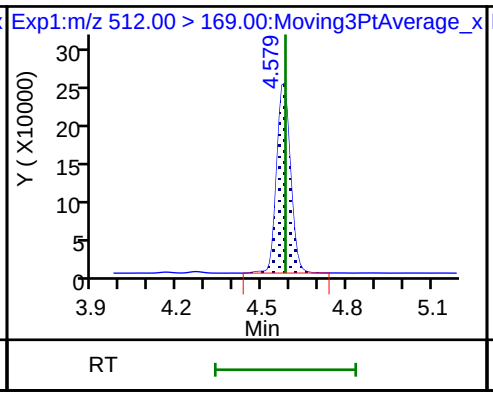
48 2-(N-methylperfluoro-1-octanesul



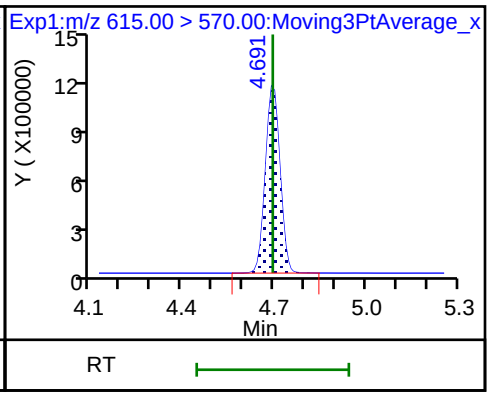
D 49 d-N-MeFOSA-M



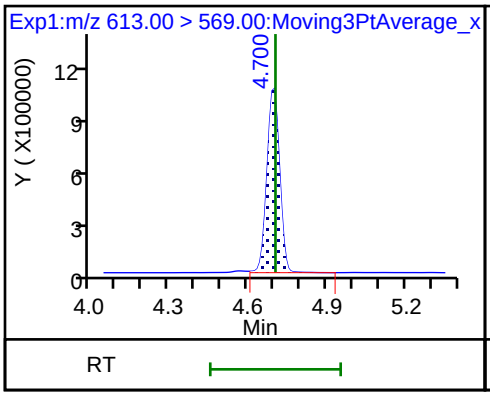
50 NMeFOSA



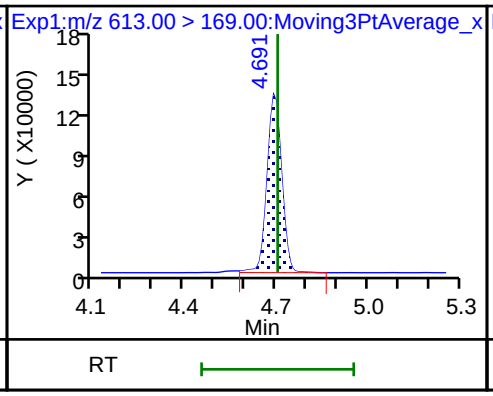
D 56 13C2 PFDoA



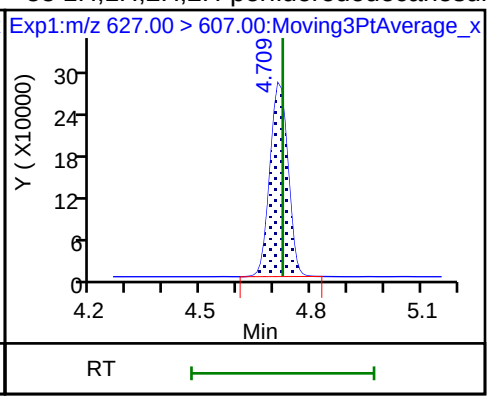
52 Perfluorododecanoic acid



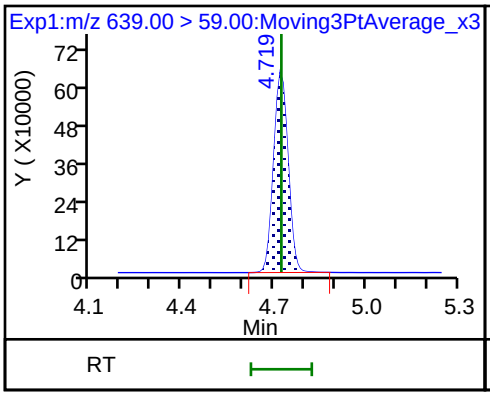
52 Perfluorododecanoic acid



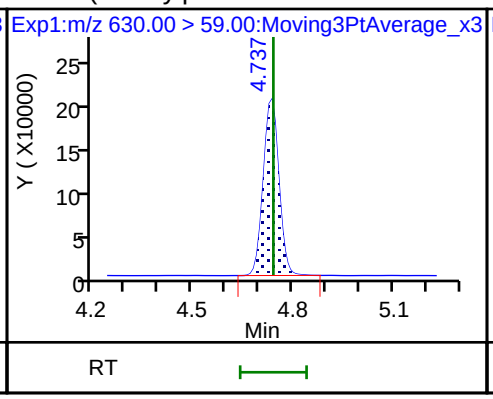
55 1H,1H,2H,2H-perfluorododecanesul



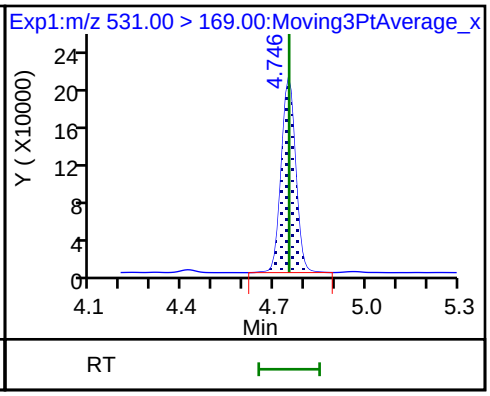
D 53 d9-N-EtFOSE-M



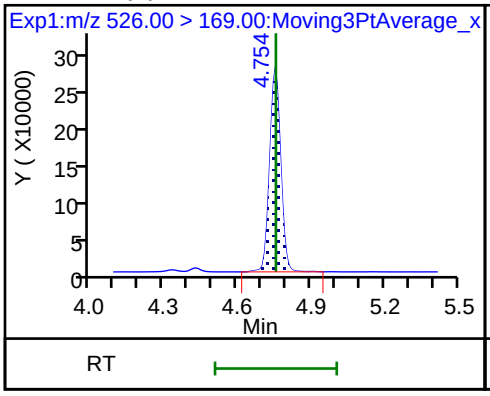
54 2-(N-ethylperfluoro-1-octanesulf



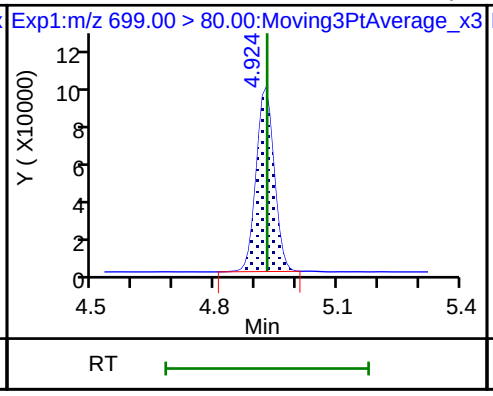
D 58 d-N-EtFOSA-M



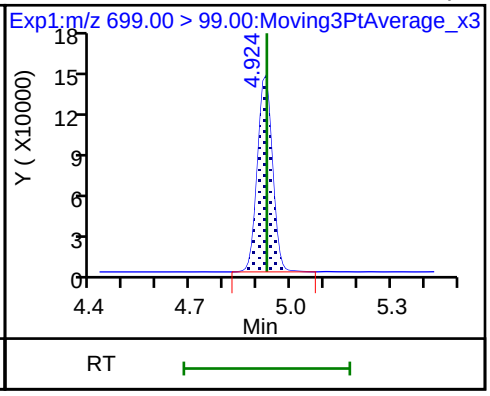
57 N-ethylperfluoro-1-octanesulfona



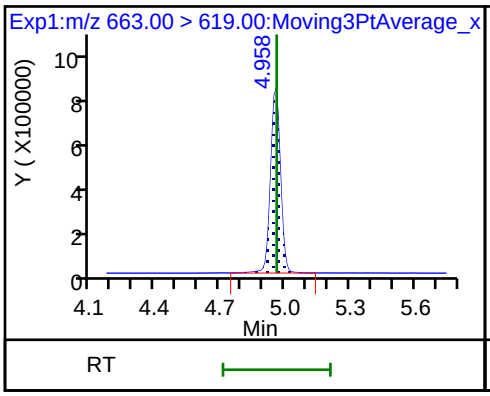
59 Perfluorododecanesulfonic acid (



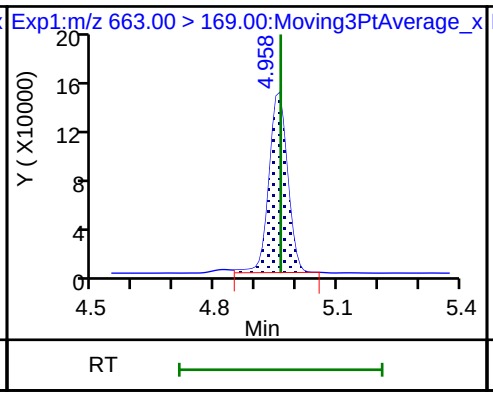
59 Perfluorododecanesulfonic acid (



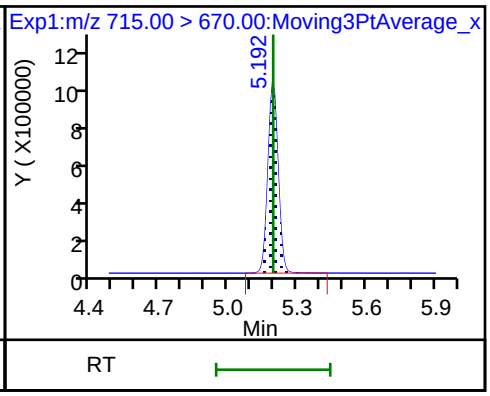
60 Perfluorotridecanoic acid



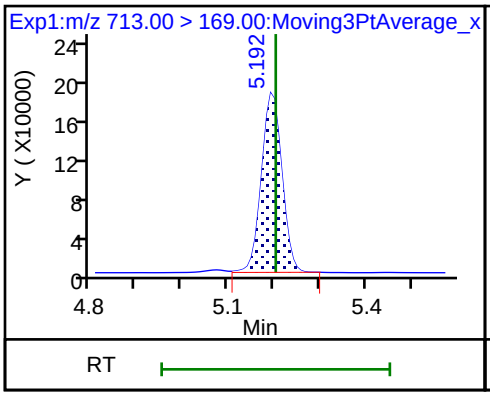
60 Perfluorotridecanoic acid



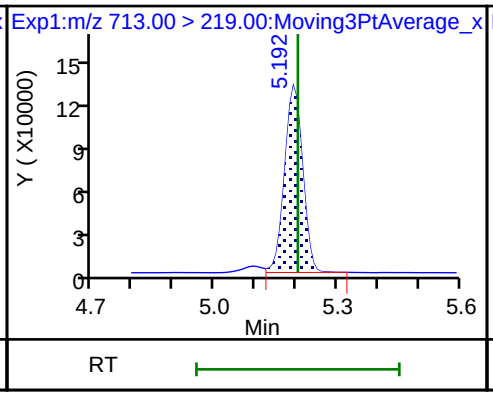
D 62 13C2 PFTeDA



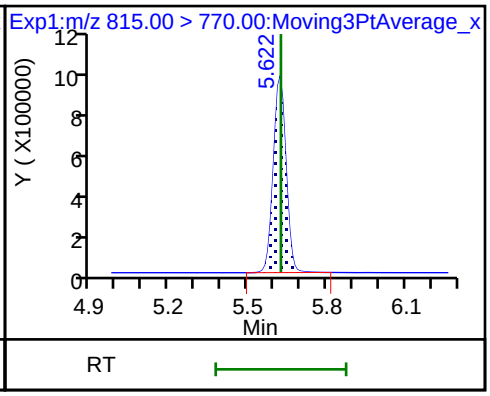
61 Perfluorotetradecanoic acid



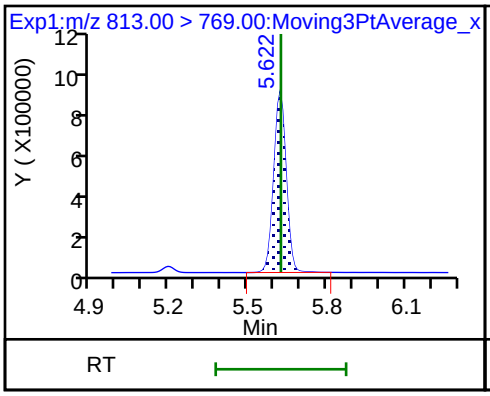
61 Perfluorotetradecanoic acid



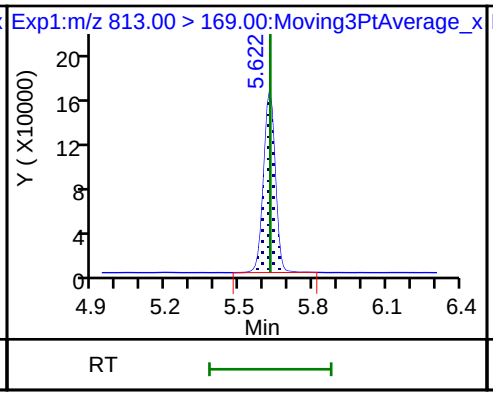
D 63 13C2 PFHxDA



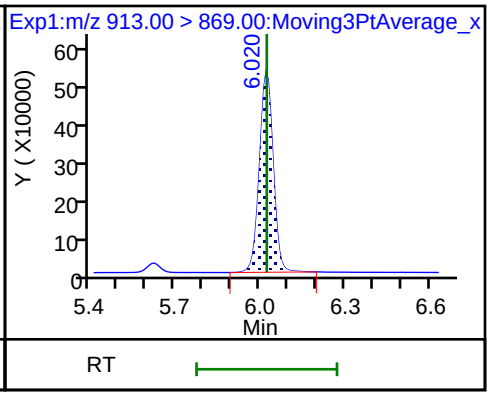
64 Perfluorohexadecanoic acid



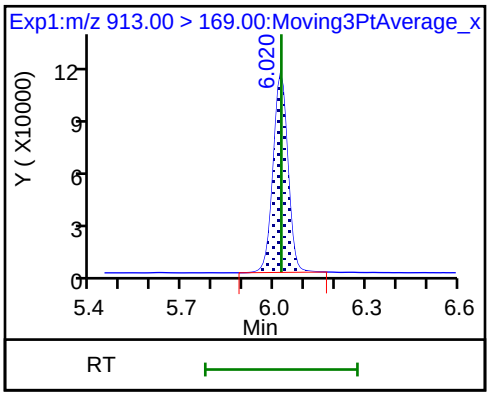
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

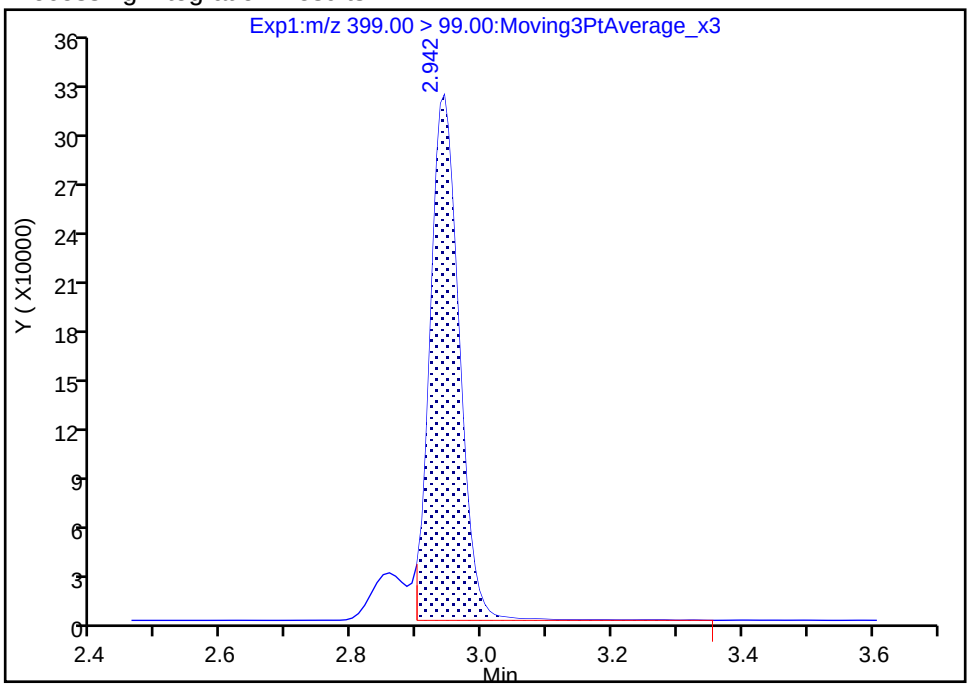
Data File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_015.d
Injection Date: 02-Jun-2020 16:48:47 Instrument ID: A9
Lims ID: ICV
Client ID:
Operator ID: SACINSTRLCMS02 ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

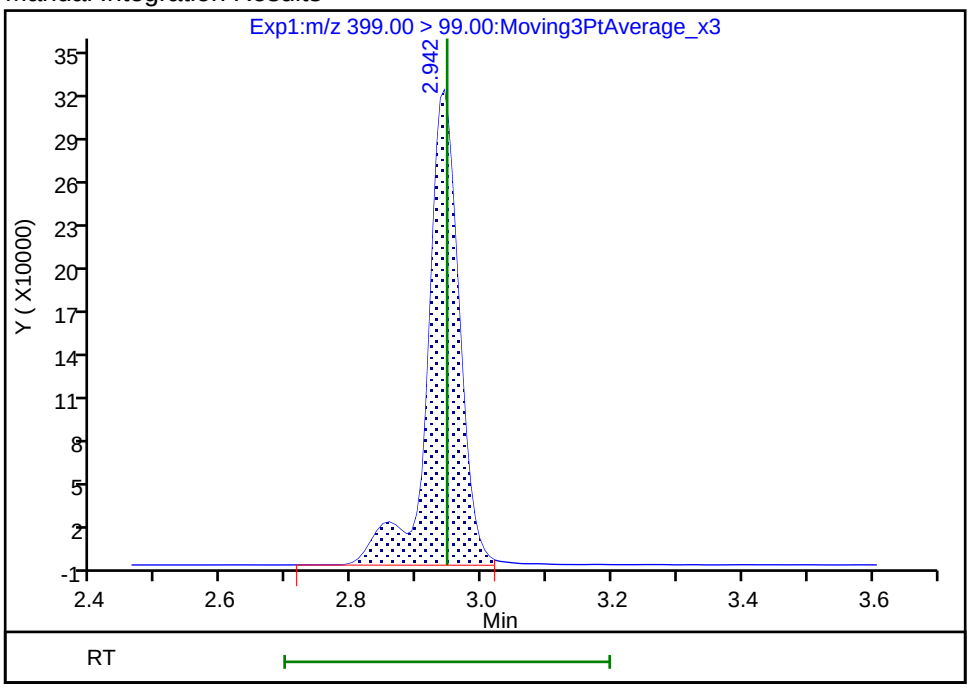
Processing Integration Results

RT: 2.94
Area: 980986
Amount: 2.461174
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 1093261
Amount: 2.461174
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:58:42
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento

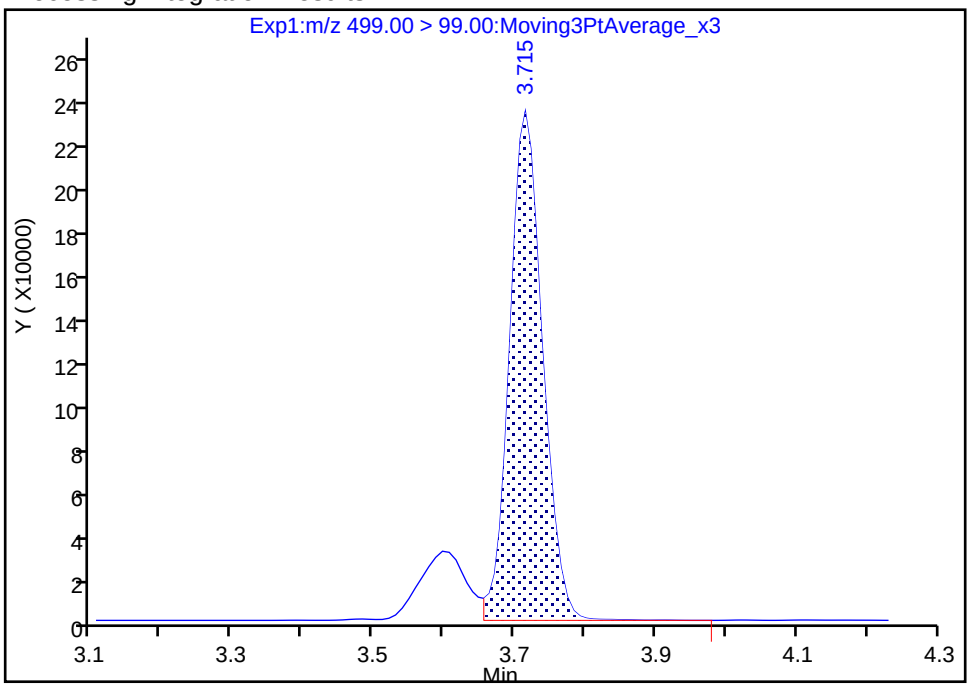
Data File:	\\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_015.d				
Injection Date:	02-Jun-2020 16:48:47	Instrument ID:	A9		
Lims ID:	ICV				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	9	Worklist Smp#:	11
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

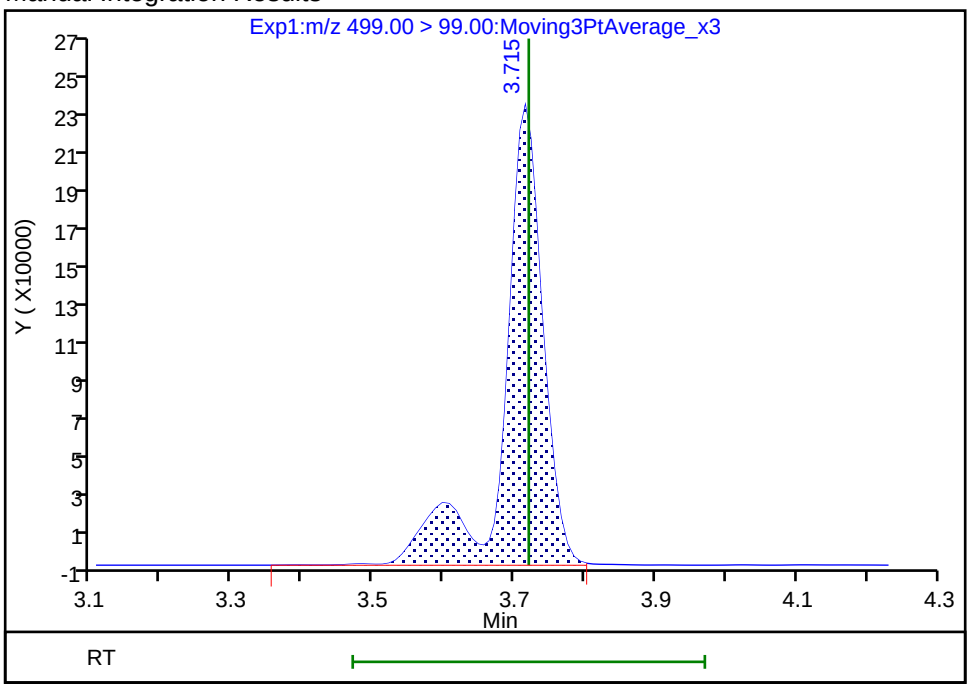
Processing Integration Results

RT: 3.72
Area: 747052
Amount: 2.510306
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 891014
Amount: 2.510306
Amount Units: ng/ml



Reviewer: adamst, 02-Jun-2020 19:59:08
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCVL 320-384406/2 Calibration Date: 06/08/2020 08:19

Instrument ID: A9 Calib Start Date: 06/02/2020 15:24

GC Column: Acquity ID: 2.10(mm) Calib End Date: 06/02/2020 16:30

Lab File ID: 2020.06.08_A9_PFC.LLA_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	0.4794	0.4929		0.0514	0.0500	2.8	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.044	1.092		0.0523	0.0500	4.6	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.087	1.092		0.0444	0.0442	0.5	50.0
4:2 FTS	AveID	2.868	3.210		0.523	0.467	11.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.037	1.235		0.0595	0.0500	19.0	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	1.009	1.009		0.0469	0.0469	-0.0	50.0
HFPO-DA (GenX)	AveID	0.5790	0.5693		0.0492	0.0500	-1.7	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.306	1.302		0.0498	0.0500	-0.3	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.179	1.254		0.0484	0.0455	6.3	50.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	1.906	1.945		0.0481	0.0471	2.1	50.0
6:2 FTS	AveID	2.227	2.436		0.519	0.474	9.4	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.058	1.130		0.0508	0.0476	6.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.257	1.337		0.0532	0.0500	6.3	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.091	1.108		0.0471	0.0464	1.6	50.0
Perfluorononanoic acid (PFNA)	AveID	1.089	1.104		0.0507	0.0500	1.4	50.0
F-53B Major	AveID	1.149	1.105		0.0448	0.0466	-3.8	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6782	0.7000		0.0495	0.0480	3.2	50.0
8:2 FTS	AveID	2.202	2.505		0.545	0.479	13.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.001	1.080		0.0539	0.0500	7.9	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	3.256	3.219		0.0494	0.0500	-1.1	50.0
NMeFOSAA	AveID	0.9274	0.9250		0.499	0.500	-0.3	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8058	0.7922		0.0474	0.0482	-1.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7722	0.6984		0.0452	0.0500	-9.6	50.0
NEtFOSAA	AveID	0.8961	0.9124		0.509	0.500	1.8	50.0
F-53B Minor	AveID	1.563	1.611		0.0486	0.0471	3.1	50.0
NMeFOSE	AveID	1.404	1.228		0.0438	0.0500	-12.5	50.0
NMeFOSA	AveID	0.8825	0.8830			0.0500	0.0	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.048	1.060		0.0506	0.0500	1.1	50.0
10:2 FTS	AveID	1.964	1.810		0.0444	0.0482	-7.9	50.0
NEtFOSE	AveID	1.470	1.195		0.0406	0.0500	-18.7	50.0
NEtFOSA	AveID	1.280	1.323			0.0500	3.3	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0899	0.0830		0.0447	0.0484	-7.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCVL 320-384406/2 Calibration Date: 06/08/2020 08:19

Instrument ID: A9 Calib Start Date: 06/02/2020 15:24

GC Column: Acquity ID: 2.10(mm) Calib End Date: 06/02/2020 16:30

Lab File ID: 2020.06.08_A9_PFC.LLA_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7140	0.7054		0.0494	0.0500	-1.2	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1699	0.1748		0.0514	0.0500	2.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.351		0.0556	0.0500	11.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5681	0.5402		0.0475	0.0500	-4.9	50.0
13C4 PFBA	Ave	1.205	1.081		2.24	2.50	-10.3	50.0
13C5 PFPeA	Ave	0.4352	0.3839		2.21	2.50	-11.8	50.0
13C3 PFBS	Ave	0.5598	0.5063		2.10	2.33	-9.6	50.0
M2-4:2 FTS	Ave	0.1177	0.0975		1.93	2.34	-17.2	50.0
13C2 PFHxA	Ave	0.8637	0.8356		2.42	2.50	-3.3	50.0
13C3 HFPO-DA	Ave	0.5521	0.5159		2.34	2.50	-6.6	50.0
13C4 PFHpA	Ave	0.7783	0.7623		2.45	2.50	-2.1	50.0
18O2 PFHxS	Ave	0.7377	0.7449		2.39	2.37	1.0	50.0
M2-6:2 FTS	Ave	0.0988	0.0908		2.18	2.38	-8.1	50.0
13C4 PFOA	Ave	0.9544	0.9698		2.54	2.50	1.6	50.0
13C4 PFOS	Ave	0.9416	0.9573		2.43	2.39	1.7	50.0
13C5 PFNA	Ave	0.9381	0.9706		2.59	2.50	3.5	50.0
13C2 PFDA	Ave	1.098	1.123		2.56	2.50	2.3	50.0
13C8 FOSA	Ave	0.3734	0.4092		2.74	2.50	9.6	50.0
M2-8:2 FTS	Ave	0.1176	0.1048		2.14	2.40	-10.9	50.0
d3-NMeFOSAA	Ave	0.4372	0.4324		2.47	2.50	-1.1	50.0
13C2 PFUnA	Ave	0.9597	0.9455		2.46	2.50	-1.5	50.0
d5-NEtFOSAA	Ave	0.3319	0.3614		2.72	2.50	8.9	50.0
d7-N-MeFOSE-M	Ave	0.1093	0.1247		14.3	12.5	14.0	50.0
d-N-MeFOSA-M	Ave	0.2211	0.2248		2.54	2.50	1.7	50.0
13C2 PFDoA	Ave	0.9094	0.9052		2.49	2.50	-0.5	50.0
d9-N-EtFOSE-M	Ave	0.1102	0.1220		13.8	12.5	10.7	50.0
d-N-EtFOSA-M	Ave	0.1665	0.1736		2.61	2.50	4.3	50.0
13C2 PFTeDA	Ave	0.8835	0.8686		2.46	2.50	-1.7	50.0
13C2 PFHxDA	Ave	0.8563	0.8630		2.52	2.50	0.8	50.0
13C8 PFOA	Ave	0.9349	0.9339		2.44	2.45	-0.1	50.0
13C8 PFOS	Ave	0.2183	0.2208		2.42	2.39	1.2	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 08-Jun-2020 08:19:03 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCVL
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200608-97159.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 09-Jun-2020 08:15:38 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1060

First Level Reviewer: contrerase Date: 08-Jun-2020 10:47:04
Ratio Calibration: Average of Initial Calibration

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	1.890	1.890	0.0	0.566	4537590	2.24		89.7	10875	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.890	1.890	0.0	1.000	44732	0.0514		103	53.7	
D 4 13C5 PFPeA										
267.90 > 223.00	2.192	2.192	0.0	0.657	1611942	2.21		88.2	8996	
3 Perfluoropentanoic acid										M
262.90 > 219.00	2.200	2.200	0.0	1.004	35206	0.0523		105	6.6	M
D 6 13C3 PFBS										
301.90 > 80.00	2.217	2.217	0.0	0.664	1977063	2.10		90.4	4999	
5 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.226	2.226	0.0	1.004	41047	0.0444	Target=2.39	101	32.3	M
298.90 > 99.00	2.226	2.226	0.0	1.004	17234		2.38(1.20-3.59)		38.4	M
D 8 M2-4:2 FTS										
329.00 > 81.00	2.506	2.506	0.0	0.751	382249	1.93		82.8	3194	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.506	2.506	0.0	1.000	245438	0.5227		112	2139	
D 10 13C2 PFHxA										
315.00 > 270.00	2.549	2.549	0.0	0.763	3508323	2.42		96.7	3505	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.549	2.549	0.0	1.000	86626	0.0595	Target=15.64	119	39.9	
313.00 > 119.00	2.549	2.549	0.0	1.000	5039		17.19(7.82-23.46)		15.9	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.560	2.560	0.0	1.155	40231	0.0469	Target=1.75	100	322	
349.00 > 99.00	2.560	2.560	0.0	1.155	23243		1.73(0.88-2.63)		285	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.665	2.665	0.0	0.798	2166282	2.34		93.4	4878	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.665	2.665	0.0	1.000	24665	0.0492		98.3	422	
18 Perfluoroheptanoic acid										M
363.00 > 319.00	2.936	2.936	0.0	1.000	83357	0.0498	Target=4.39	99.7	31.5	M
363.00 > 169.00	2.936	2.936	0.0	1.000	21717		3.84(2.20-6.59)		50.7	
D 15 13C4 PFHpA										
367.00 > 322.00	2.936	2.936	0.0	0.879	3200680	2.45		97.9	6574	
D 17 18O2 PFHxS										
403.00 > 84.00	2.941	2.941	0.0	0.881	2958641	2.39		101	3265	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.936	2.936	0.0	0.998	71351	0.0484	Target=3.04	106	312	M
399.00 > 99.00	2.936	2.936	0.0	0.998	25378		2.81(1.52-4.56)		145	M
19 DONA										
377.00 > 251.00	2.988	2.988	0.0	0.804	147305	0.0481	Target=2.17	102	611	
377.00 > 85.00	2.982	2.988	-0.006	0.803	63476		2.32(1.09-3.26)		327	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.318	3.318	0.0	1.000	176042	0.5185		109	524	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.318	0.0	0.994	362103	2.18		91.9	1458	
$ 21 13C8 PFOA										
421.00 > 376.00	3.332	3.332	0.0	0.998	3839073	2.44		99.9	16419	
D 26 13C4 PFOA										
417.00 > 372.00	3.339	3.339	0.0	1.000	4072114	2.54		102	6251	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.332	3.332	0.0	0.897	86455	0.0508	Target=3.82	107	459	
449.00 > 99.00	3.332	3.332	0.0	0.897	20113		4.30(1.91-5.72)		119	
24 Perfluorooctanoic acid										M
413.00 > 369.00	3.339	3.339	0.0	1.000	108911	0.0532	Target=2.82	106	10.3	M
413.00 > 169.00	3.339	3.339	0.0	1.000	38541		2.83(1.41-4.23)		182	
* 25 13C2 PFOA										
415.00 > 370.00	3.339	3.339	0.0		4198830	2.50			7527	
$ 27 13C8 PFOS										
507.00 > 99.00	3.708	3.708	0.0	1.110	886434	2.42		101	2856	
D 31 13C4 PFOS										
503.00 > 80.00	3.715	3.715	0.0	1.112	3842710	2.43		102	3206	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.715	3.715	0.0	1.000	82661	0.0471	Target=4.25	102	245	M
499.00 > 99.00	3.715	3.715	0.0	1.000	20296		4.07(2.13-6.38)		105	M
D 29 13C5 PFNA										
468.00 > 423.00	3.723	3.723	0.0	1.115	4075452	2.59		103	11193	
30 Perfluorononanoic acid										M
463.00 > 419.00	3.723	3.723	0.0	1.000	89985	0.0507	Target=5.46	101	20.4	M
463.00 > 169.00	3.723	3.723	0.0	1.000	15364		5.86(2.73-8.19)		85.3	M
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.922	3.922	0.0	1.056	82780	0.0448		96.2	277	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.061	4.061	0.0	1.093	54020	0.0495	Target=4.97	103	288	
549.00 > 99.00	4.061	4.061	0.0	1.093	10490		5.15(2.48-7.45)		105	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.087	4.087	0.0	1.000	211232	0.5448		114	1273	
D 33 13C2 PFDA										
515.00 > 470.00	4.087	4.087	0.0	1.224	4714469	2.56		102	5965	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.087	4.087	0.0	1.000	101790	0.0539	Target=14.66	108	49.3	
513.00 > 169.00	4.078	4.087	-0.009	0.998	7121		14.29(7.33-21.99)		33.7	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.087	4.087	0.0	1.224	421644	2.14		89.1	1739	
D 36 13C8 FOSA										
506.00 > 78.00	4.087	4.087	0.0	1.224	1718087	2.74		110	2456	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.087	4.087	0.0	1.000	110606	0.0494		98.9	473	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.248	4.248	0.0	1.272	1815694	2.47		98.9	2821	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.257	4.257	0.0	1.002	335919	0.4987		99.7	99.1	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.379	4.379	0.0	1.179	61396	0.0474	Target=4.49	98.3	243	
599.00 > 99.00	4.379	4.379	0.0	1.179	12767		4.81(2.25-6.74)		59.4	
D 46 13C2 PFUnA										
565.00 > 520.00	4.405	4.405	0.0	1.319	3970118	2.46		98.5	8202	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.405	4.405	0.0	1.000	55455	0.0452	Target=10.82	90.4	14.5	
563.00 > 169.00	4.405	4.405	0.0	1.000	7280		7.62(5.41-16.23)		112	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.414	4.414	0.0	1.000	276875	0.5091		102	2594	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.414	4.414	0.0	1.322	1517364	2.72		109	1917	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.542	4.542	0.0	1.223	122034	0.0486		103	466	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.551	4.551	0.0	1.363	2617501	14.3		114	5687	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.560	4.560	0.0	1.002	12861	0.0438		87.5	63.1	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.569	4.569	0.0	1.368	943806	2.54		102	246	
50 NMeFOSA										
512.00 > 169.00	4.569	4.569	0.0	1.000	16667	0.0500		100	103	
52 Perfluorododecanoic acid										M
613.00 > 569.00	4.690	4.690	0.0	1.000	80574	0.0506	Target=8.20	101	19.8	M
613.00 > 169.00	4.699	4.690	0.009	1.002	10336		7.80(4.10-12.30)		87.5	
D 56 13C2 PFDoA										
615.00 > 570.00	4.690	4.690	0.0	1.404	3800650	2.49		99.5	6912	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.709	4.709	0.0	1.152	15357	0.0444		92.1	123	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.727	4.727	0.0	1.416	2561593	13.8		111	4525	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.736	4.736	0.0	1.002	12242	0.0406		81.3	60.2	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.745	4.745	0.0	1.421	729012	2.61		104	1654	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.753	4.753	0.0	1.002	19287	0.0517		103	80.0	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.915	4.915	0.0	1.323	6458	0.0447	Target=0.67	92.3	59.2	
699.00 > 99.00	4.915	4.915	0.0	1.323	9081		0.71(0.33-1.00)		94.9	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.948	4.948	0.0	1.055	53620	0.0494	Target=5.48	98.8	25.5	
663.00 > 169.00	4.948	4.948	0.0	1.055	10008		5.36(2.74-8.23)		97.8	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.191	5.191	0.0	1.554	3646898	2.46		98.3	5661	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.191	5.191	0.0	1.000	12749	0.0514	Target=1.49	103	125	
713.00 > 219.00	5.191	5.191	0.0	1.000	7407		1.72(0.75-2.24)		65.3	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.619	5.619	0.0	1.683	3623713	2.52		101	7236	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.619	5.619	0.0	1.000	97892	0.0556	Target=5.24	111	18.3	
813.00 > 169.00	5.619	5.619	0.0	1.000	18021		5.43(2.62-7.87)		171	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.018	6.018	0.0	1.071	39147	0.0475	Target=4.86	95.1	12.6	
913.00 > 169.00	6.009	6.018	-0.009	1.070	7304		5.36(2.43-7.29)		84.7	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LLCCVL_00019 Amount Added: 1.00 Units: mL

Report Date: 09-Jun-2020 08:15:42 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d

Injection Date: 08-Jun-2020 08:19:03 Instrument ID: A9

Lims ID: CCVL

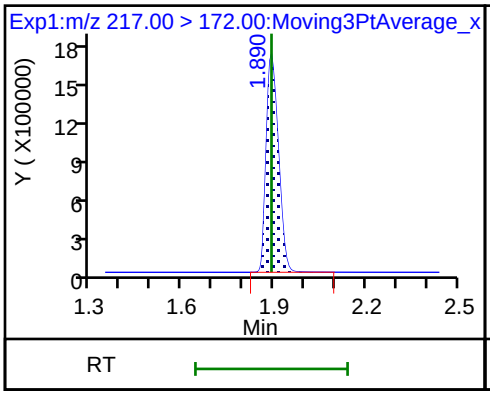
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 51 Worklist Smp#: 2

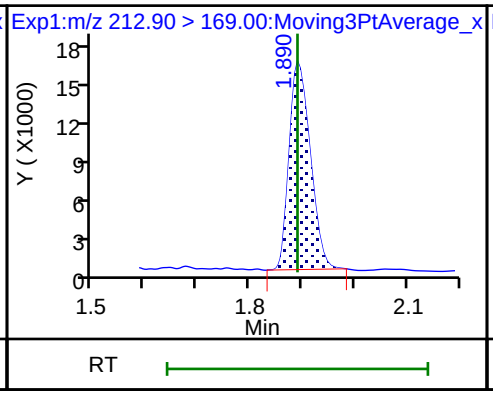
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

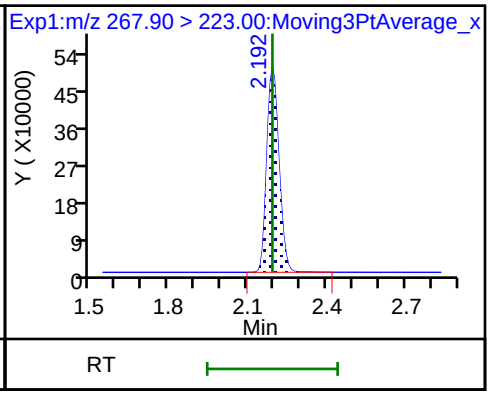
D 1 13C4 PFBA



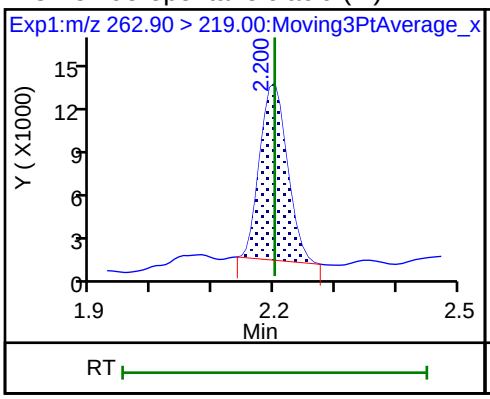
2 Perfluorobutanoic acid



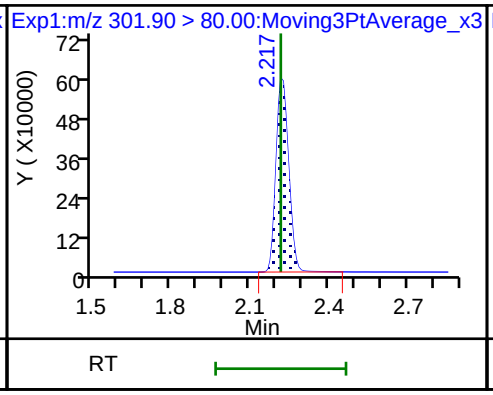
D 4 13C5 PFPeA



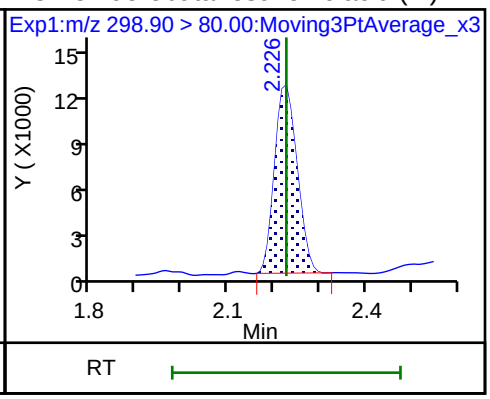
3 Perfluoropentanoic acid (M)



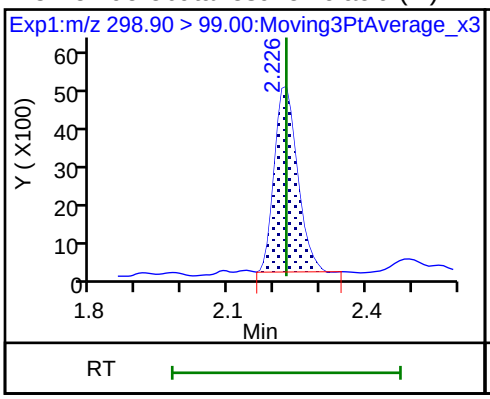
D 6 13C3 PFBS



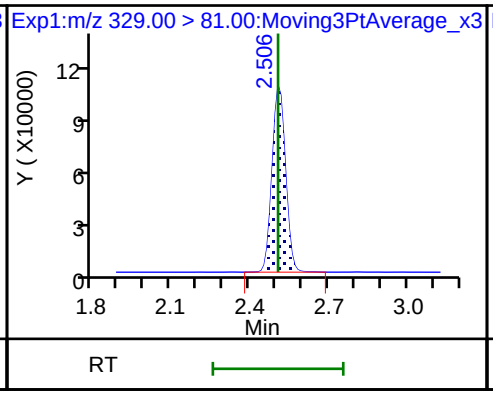
5 Perfluorobutanesulfonic acid (M)



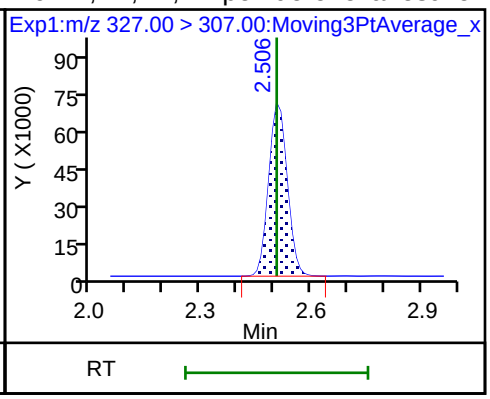
5 Perfluorobutanesulfonic acid (M)



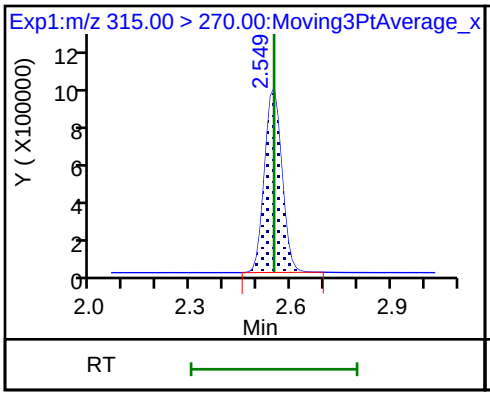
D 8 M2-4:2 FTS



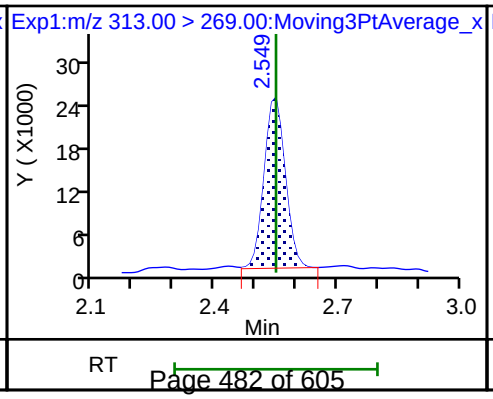
9 1H,1H,2H,2H-perfluorohexanesulfo



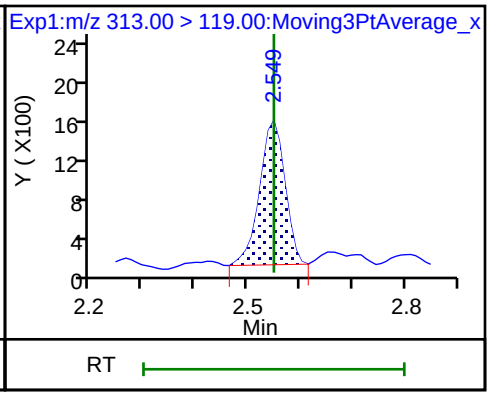
D 10 13C2 PFHxA



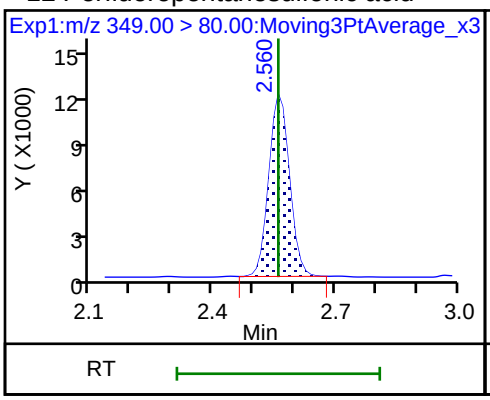
11 Perfluorohexanoic acid



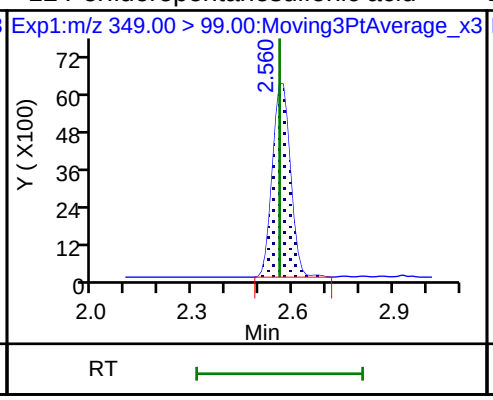
11 Perfluorohexanoic acid



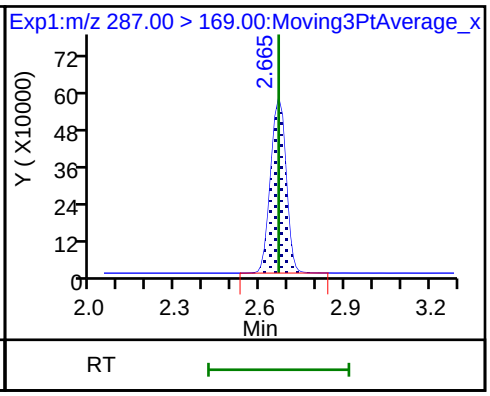
12 Perfluoropentanesulfonic acid



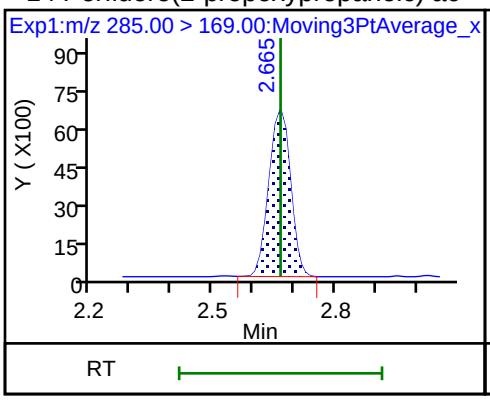
12 Perfluoropentanesulfonic acid



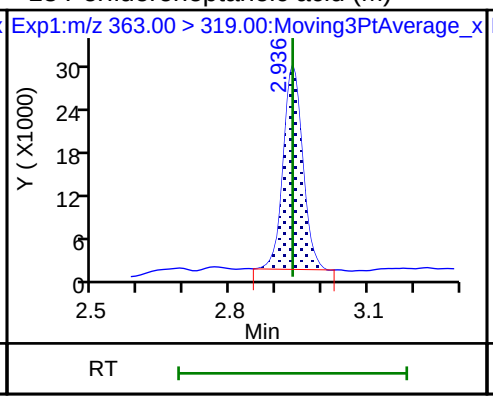
D 13 13C3 HFPO-DA



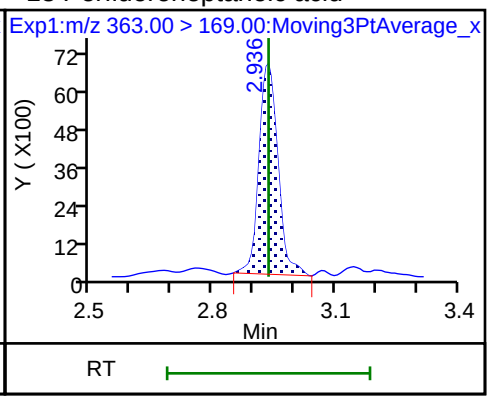
14 Perfluoro(2-propoxypropanoic) ac



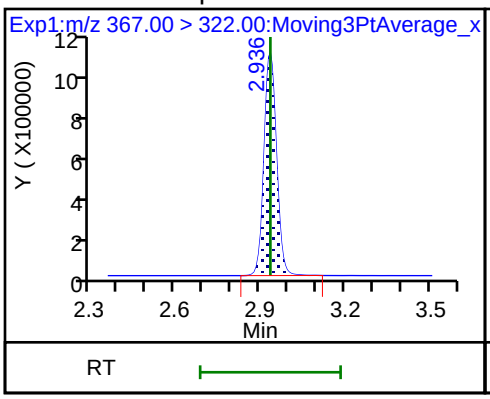
18 Perfluoroheptanoic acid (M)



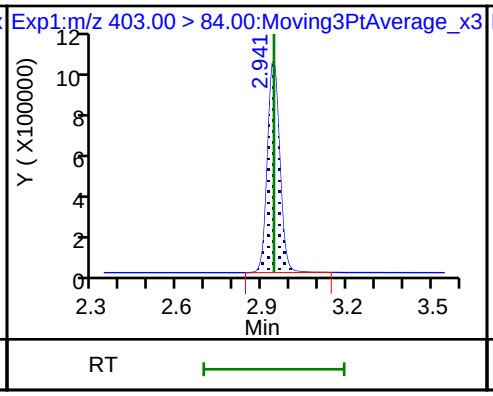
18 Perfluoroheptanoic acid



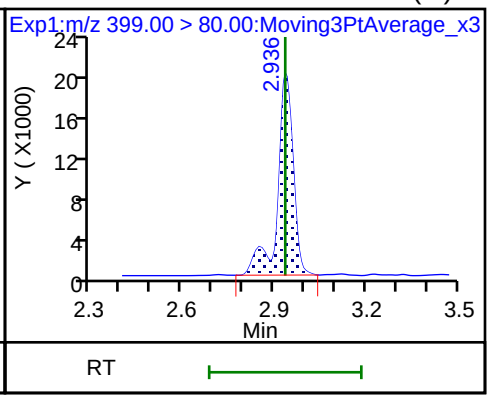
D 15 13C4 PFHpA



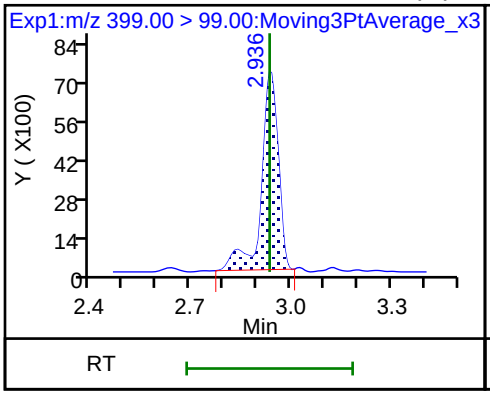
D 17 18O2 PFHxS



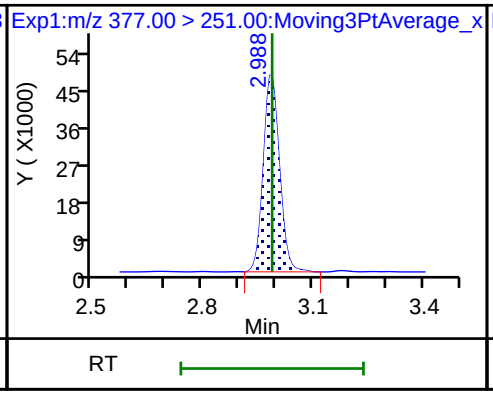
16 Perfluorohexanesulfonic acid (M)



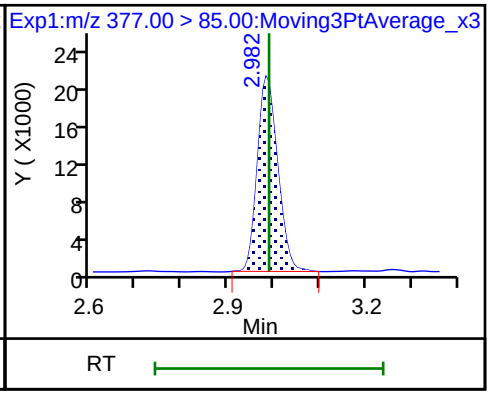
16 Perfluorohexanesulfonic acid (M)



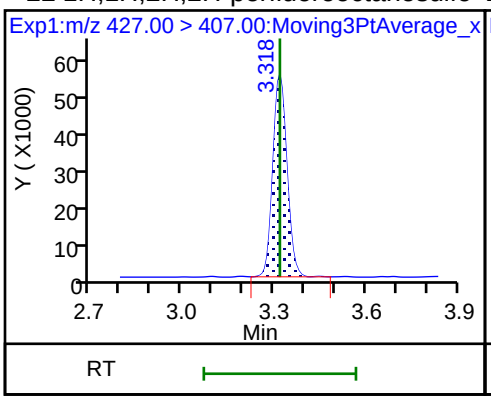
19 DONA



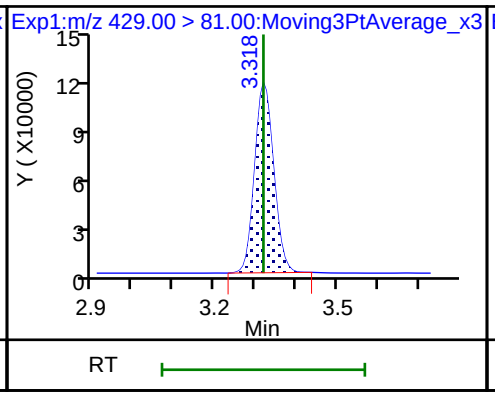
19 DONA



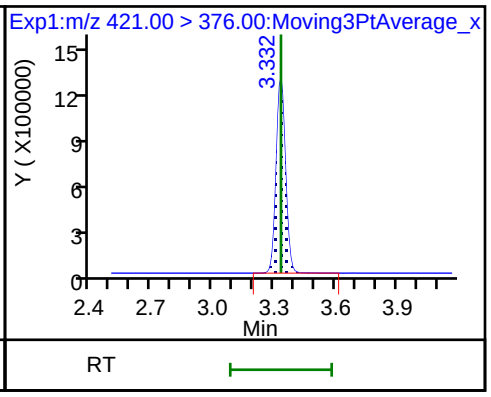
22 1H,1H,2H,2H-perfluorooctanesulfo



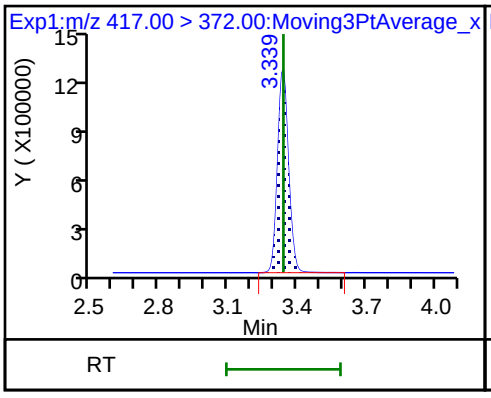
D 20 M2-6:2 FTS



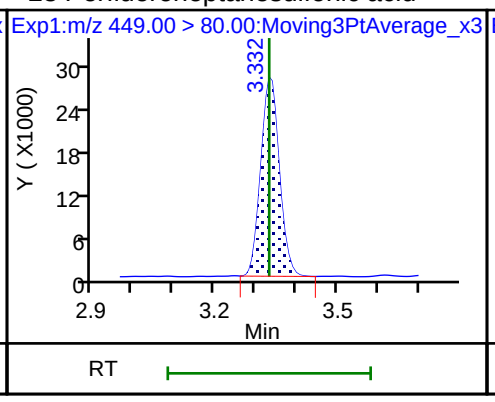
$ 21 13C8 PFOA



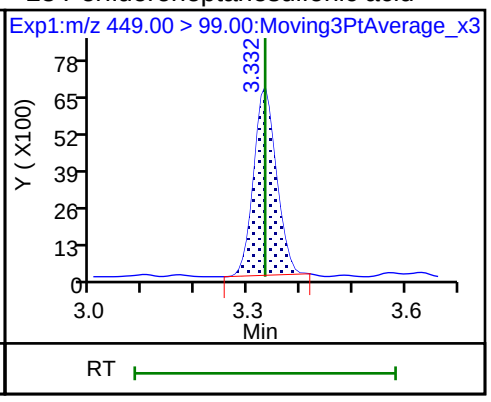
D 26 13C4 PFOA



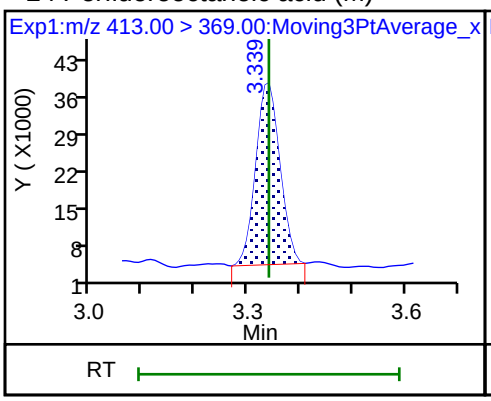
23 Perfluoroheptanesulfonic acid



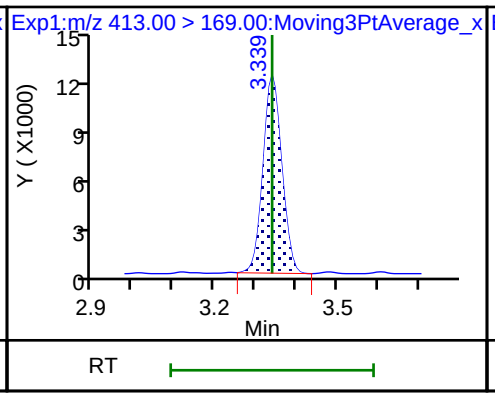
23 Perfluoroheptanesulfonic acid



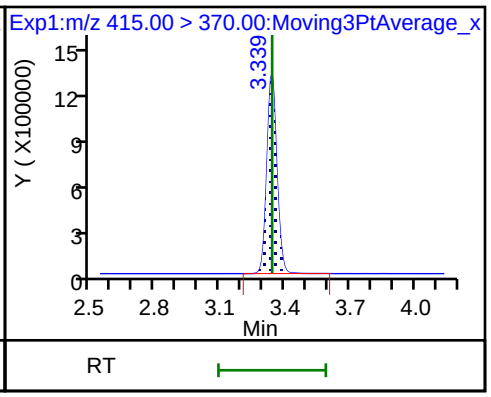
24 Perfluorooctanoic acid (M)



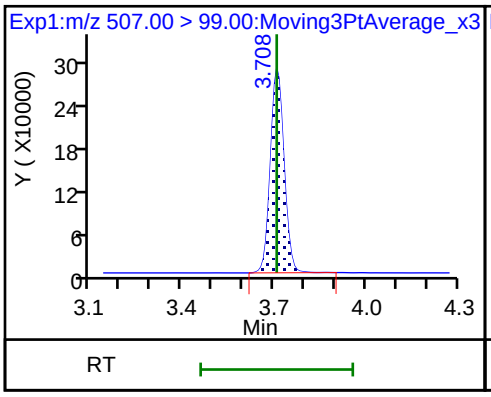
24 Perfluorooctanoic acid



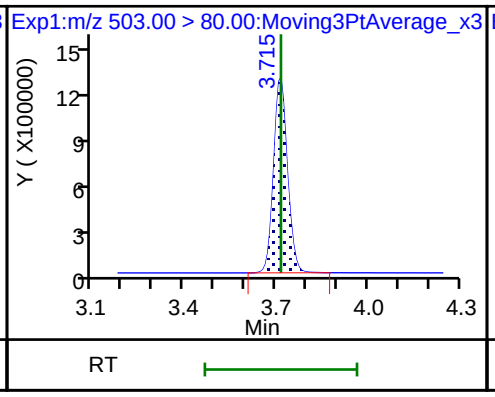
* 25 13C2 PFOA



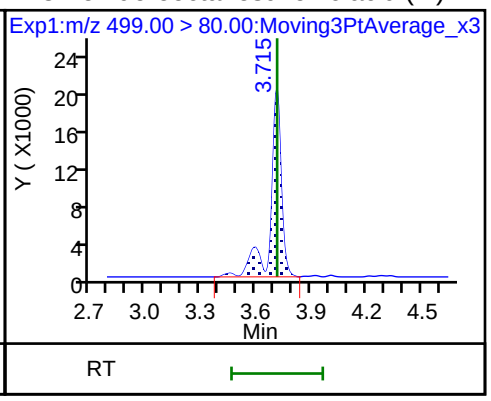
$ 27 13C8 PFOS



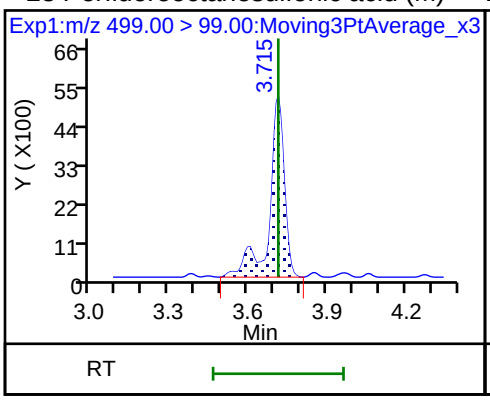
D 31 13C4 PFOS



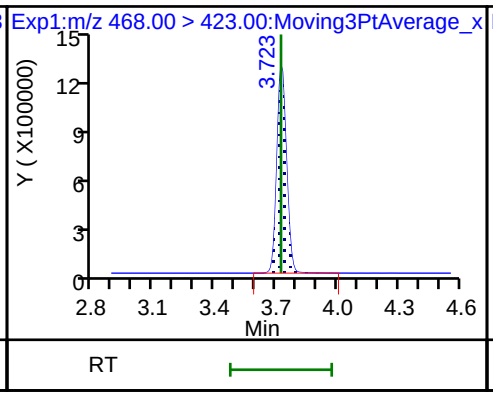
28 Perfluorooctanesulfonic acid (M)



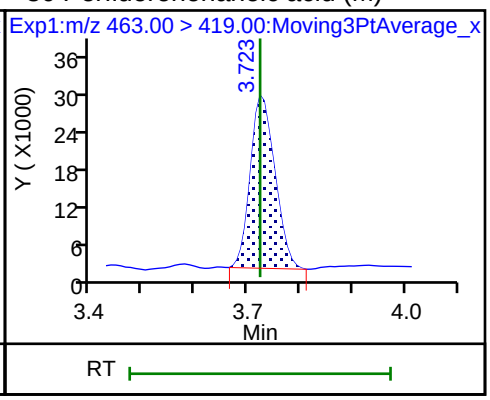
28 Perfluorooctanesulfonic acid (M)



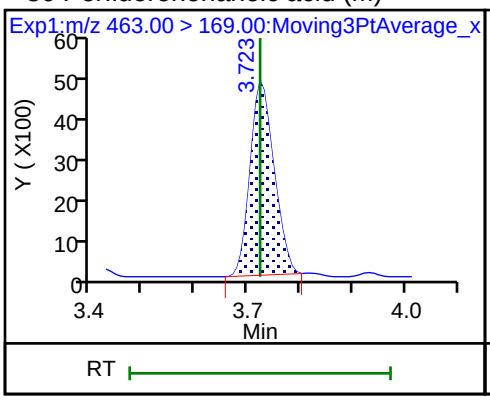
D 29 13C5 PFNA



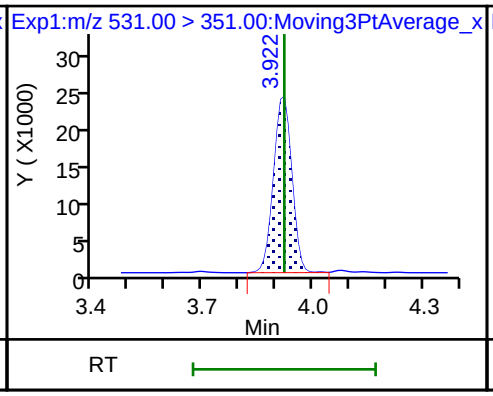
30 Perfluorononanoic acid (M)



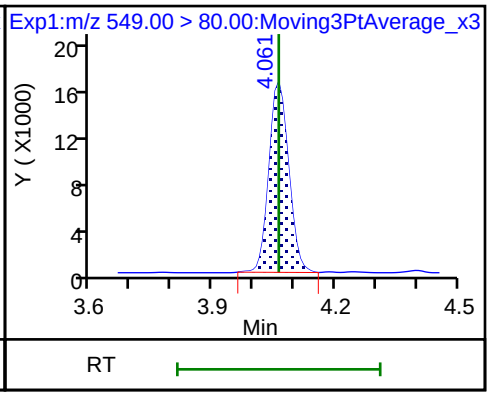
30 Perfluorononanoic acid (M)



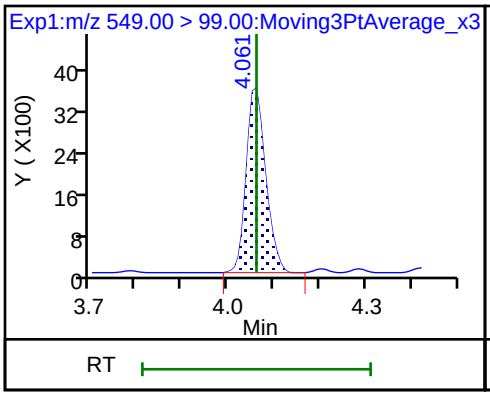
32 9-Chlorohexadecafluoro-3-oxanona



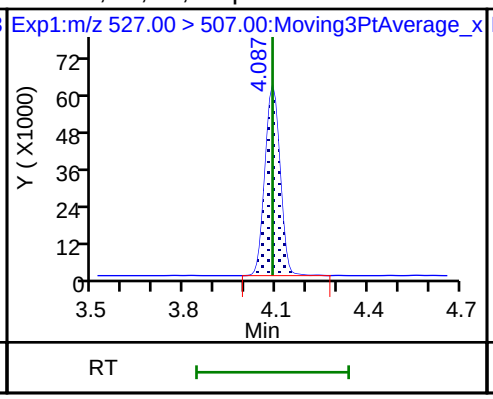
35 Perfluorononanesulfonic acid



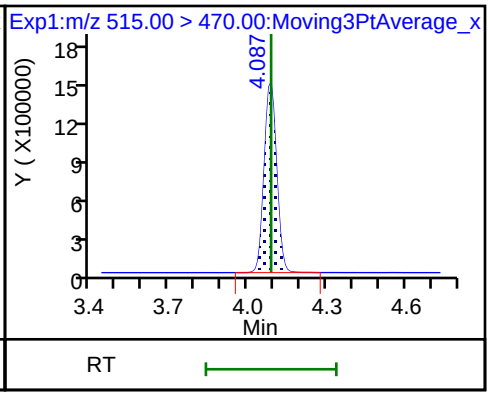
35 Perfluorononanesulfonic acid



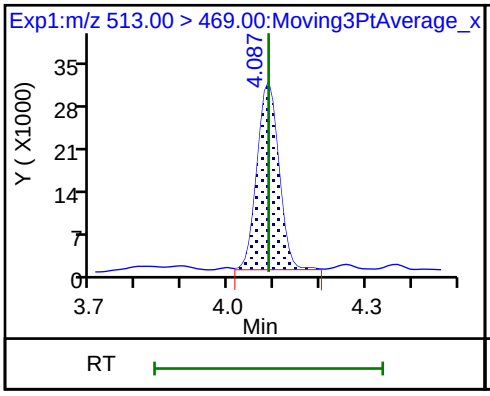
39 1H,1H,2H,2H-perfluorodecanesulfo



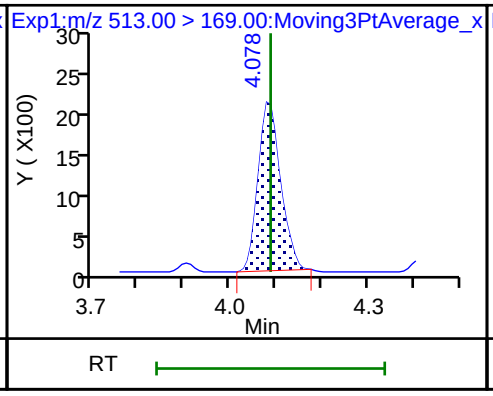
D 33 13C2 PFDA



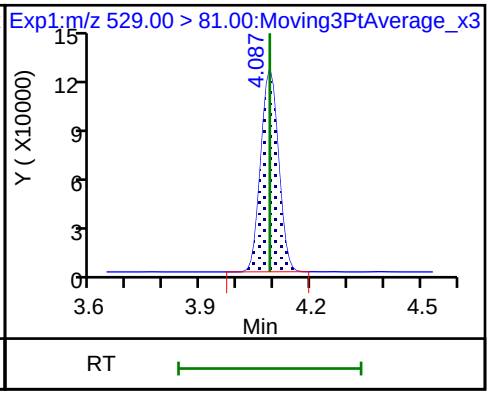
38 Perfluorodecanoic acid



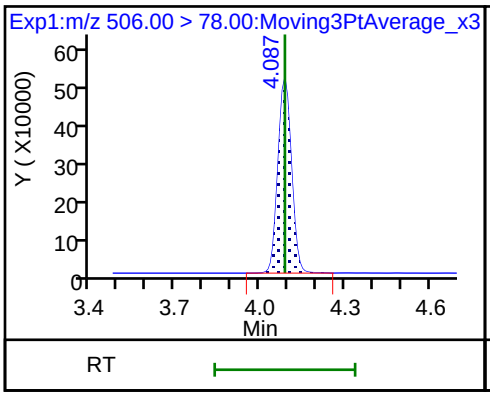
38 Perfluorodecanoic acid



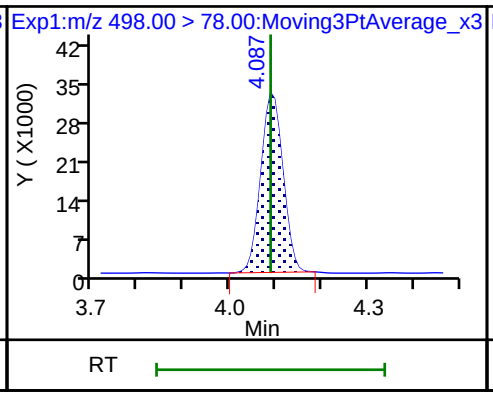
D 37 M2-8:2 FTS



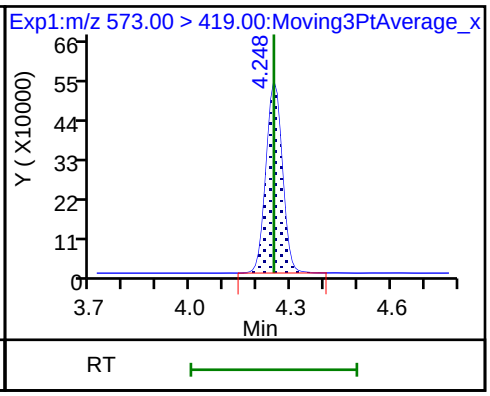
D 36 13C8 FOSA



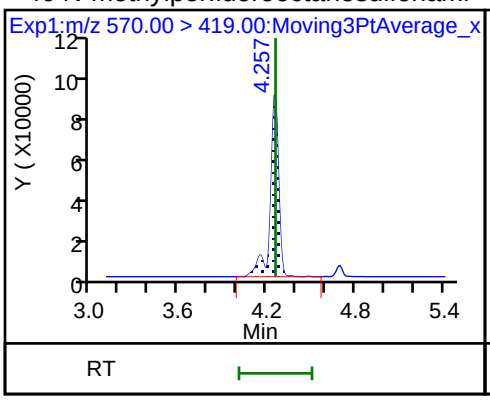
34 Perfluorooctanesulfonamide



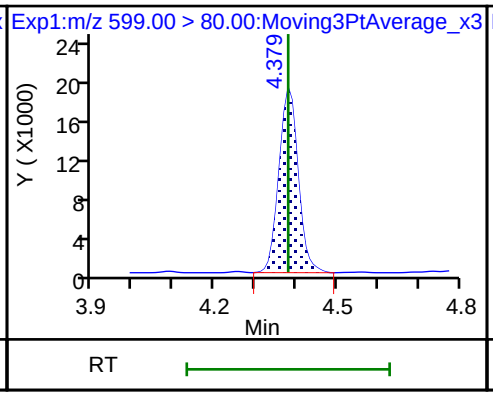
D 41 d3-NMeFOSAA



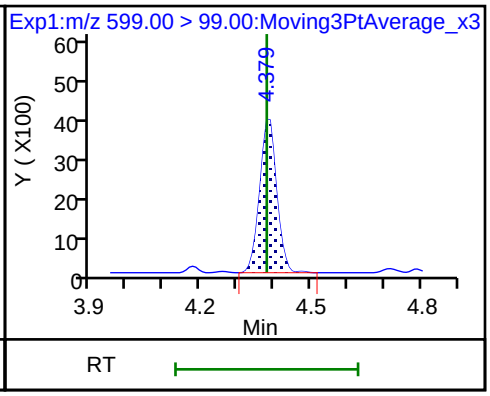
40 N-methylperfluorooctanesulfonami



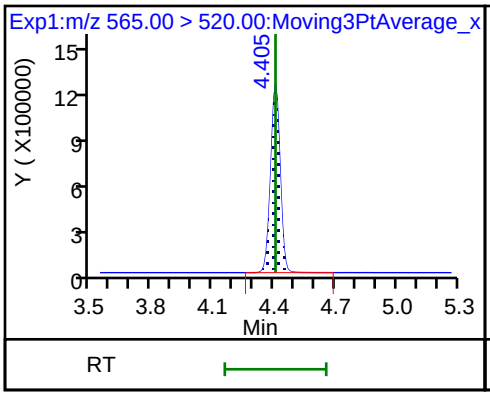
42 Perfluorodecanesulfonic acid



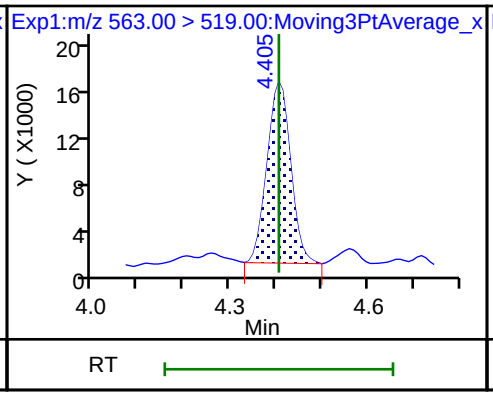
42 Perfluorodecanesulfonic acid



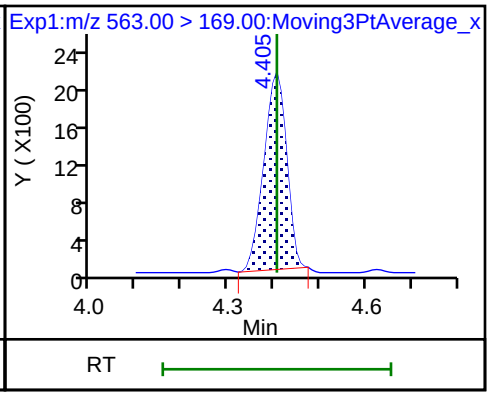
D 46 13C2 PFUnA



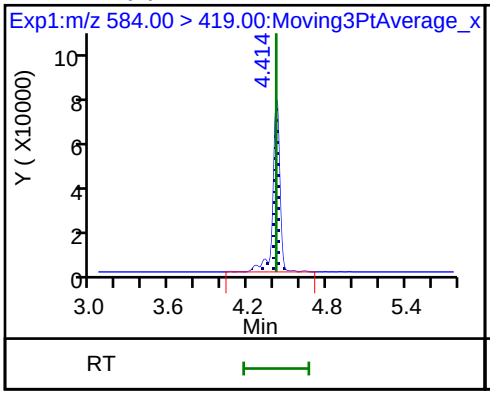
43 Perfluoroundecanoic acid



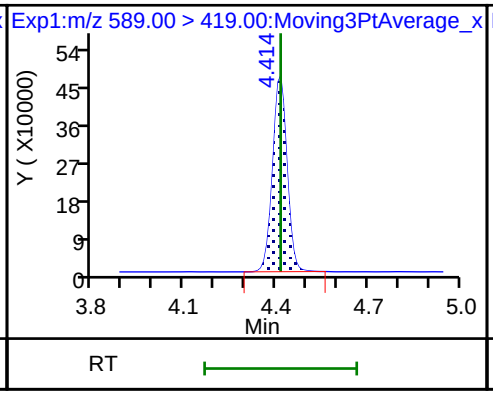
43 Perfluoroundecanoic acid



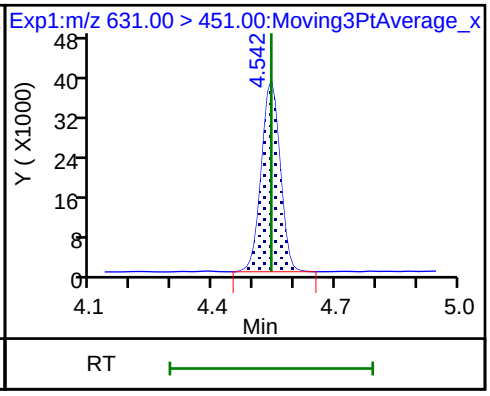
44 N-ethylperfluorooctanesulfonamid



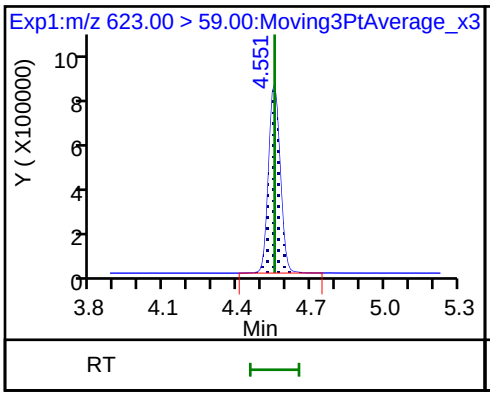
D 45 d5-NEtFOSAA



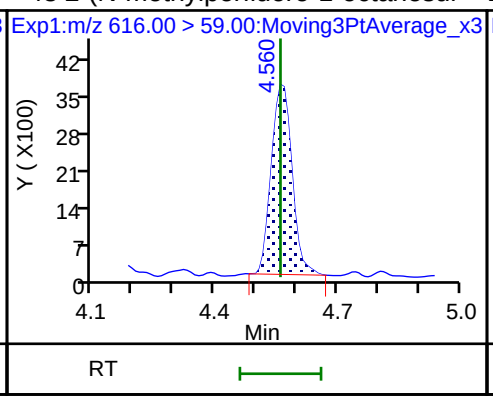
51 11-Chloroeicosafluoro-3-oxaundec



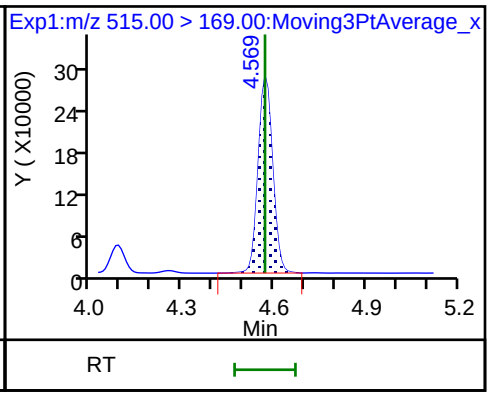
D 47 d7-N-MeFOSE-M



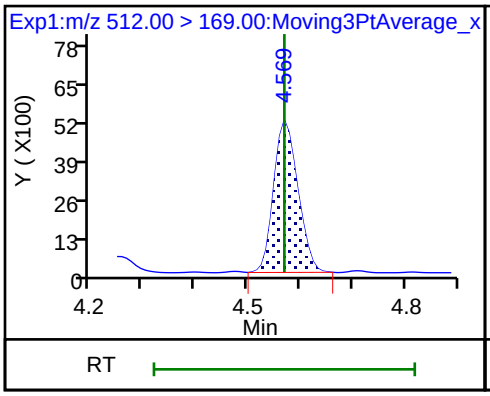
48 2-(N-methylperfluoro-1-octanesul



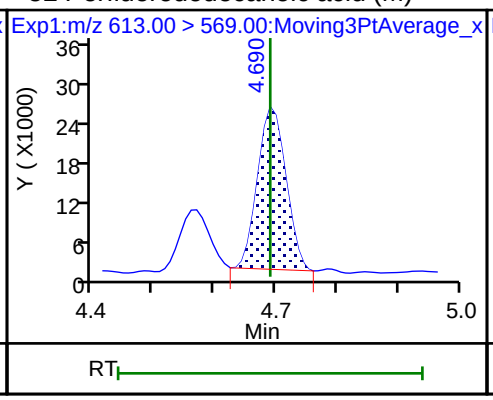
D 49 d-N-MeFOSA-M



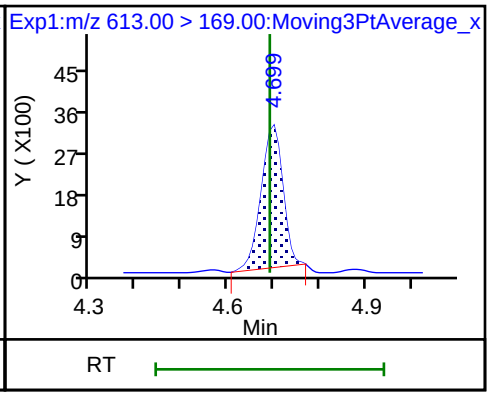
50 NMeFOSA



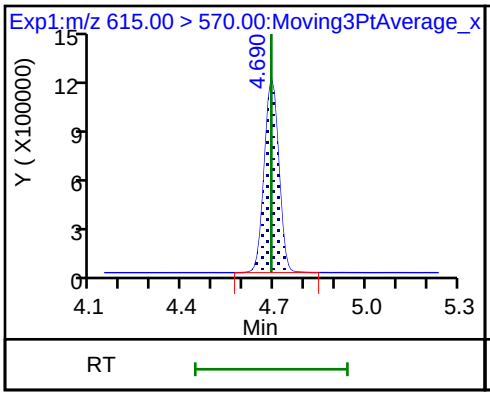
52 Perfluorododecanoic acid (M)



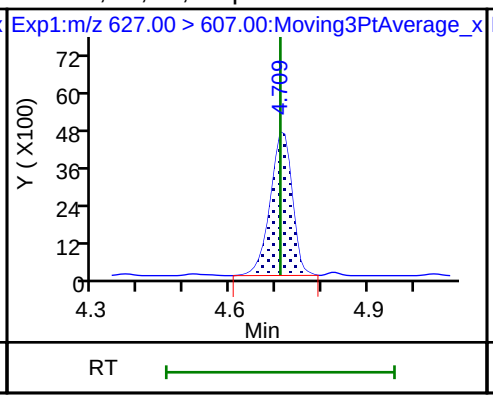
52 Perfluorododecanoic acid



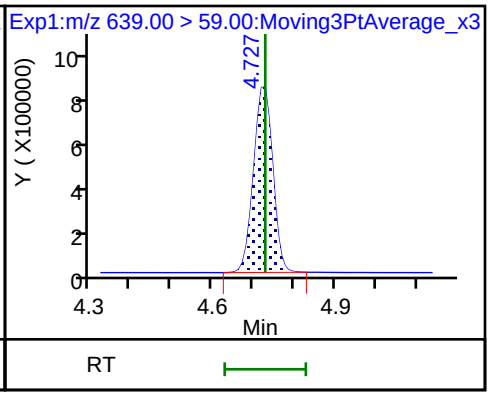
D 56 13C2 PFDoA



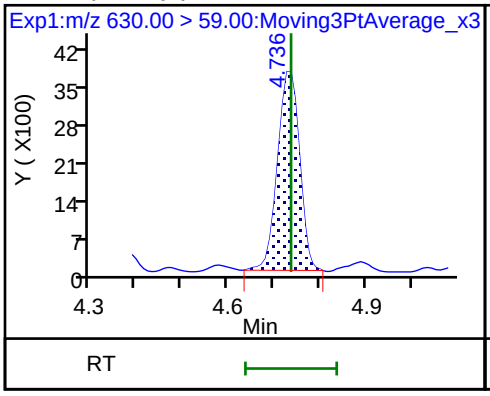
55 1H,1H,2H,2H-perfluorododecanesul



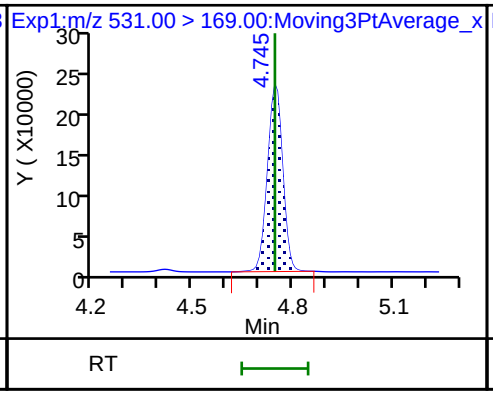
D 53 d9-N-EtFOSE-M



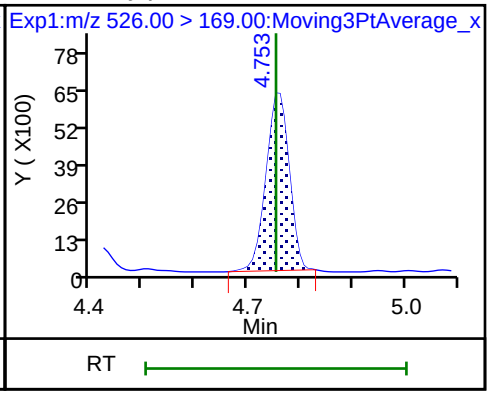
54 2-(N-ethylperfluoro-1-octanesulf



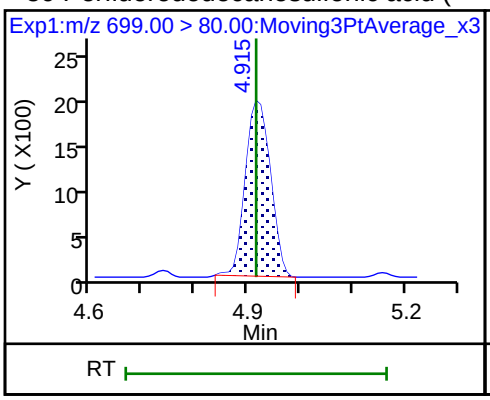
D 58 d-N-EtFOSA-M



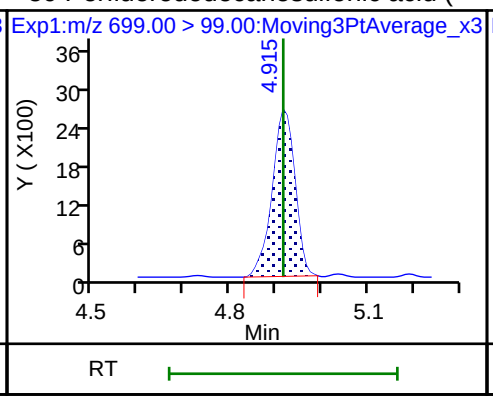
57 N-ethylperfluoro-1-octanesulfona



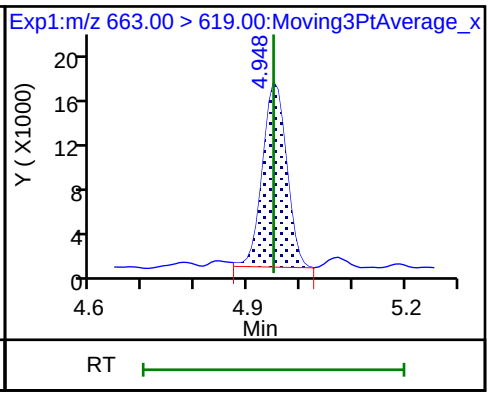
59 Perfluorododecanesulfonic acid (



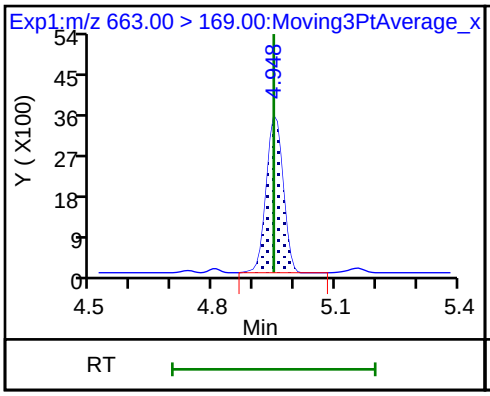
59 Perfluorododecanesulfonic acid (



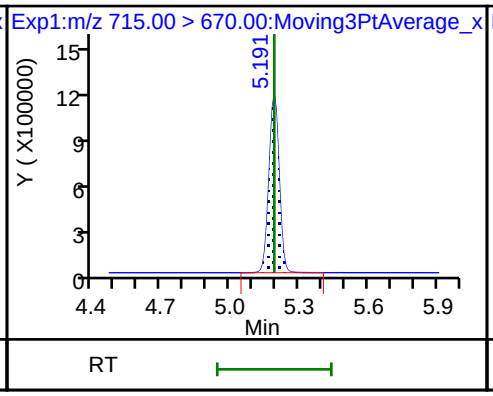
60 Perfluorotridecanoic acid



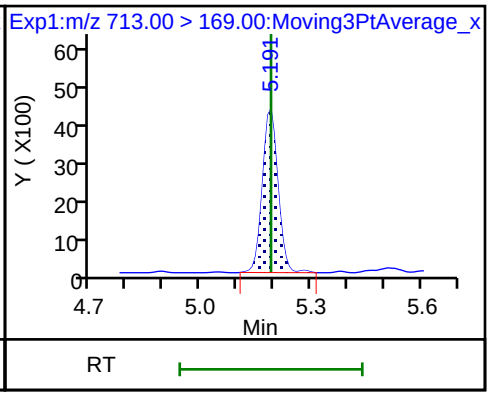
60 Perfluorotridecanoic acid



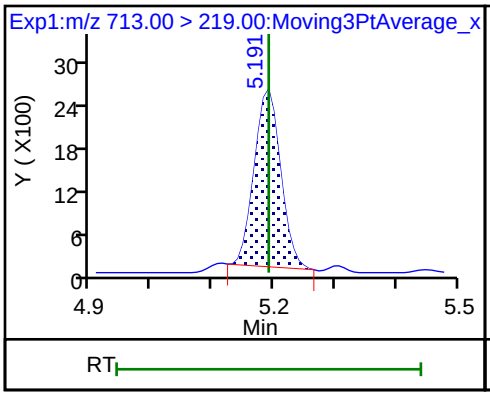
D 62 13C2 PFTeDA



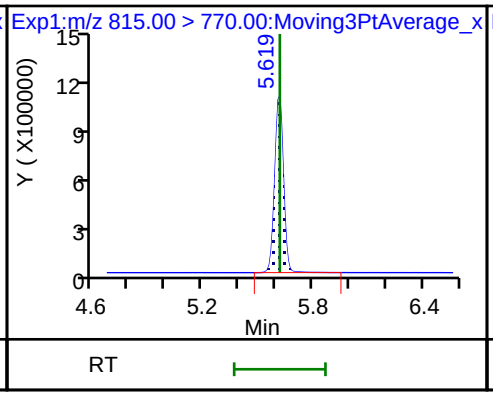
61 Perfluorotetradecanoic acid



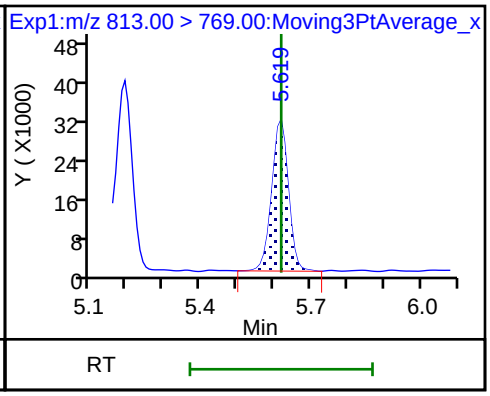
61 Perfluorotetradecanoic acid



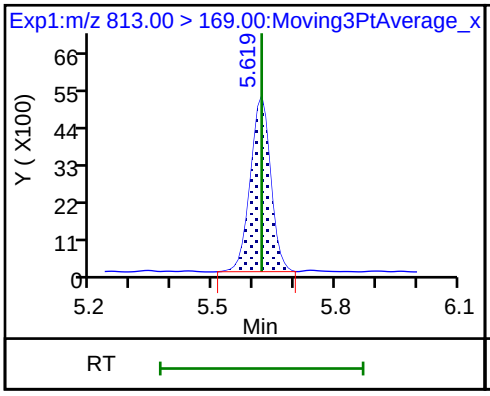
D 63 13C2 PFHxDA



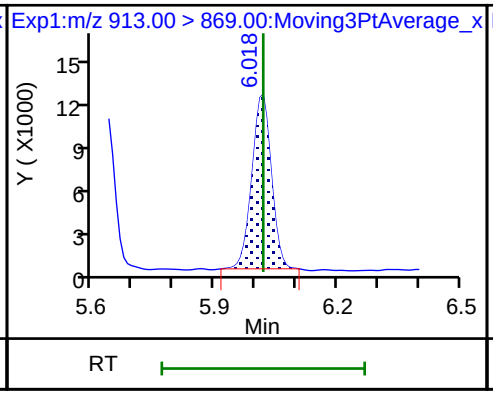
64 Perfluorohexadecanoic acid



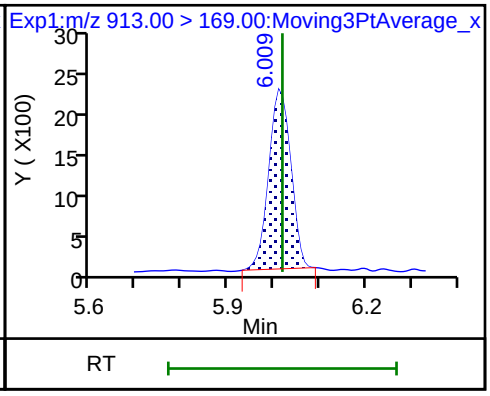
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

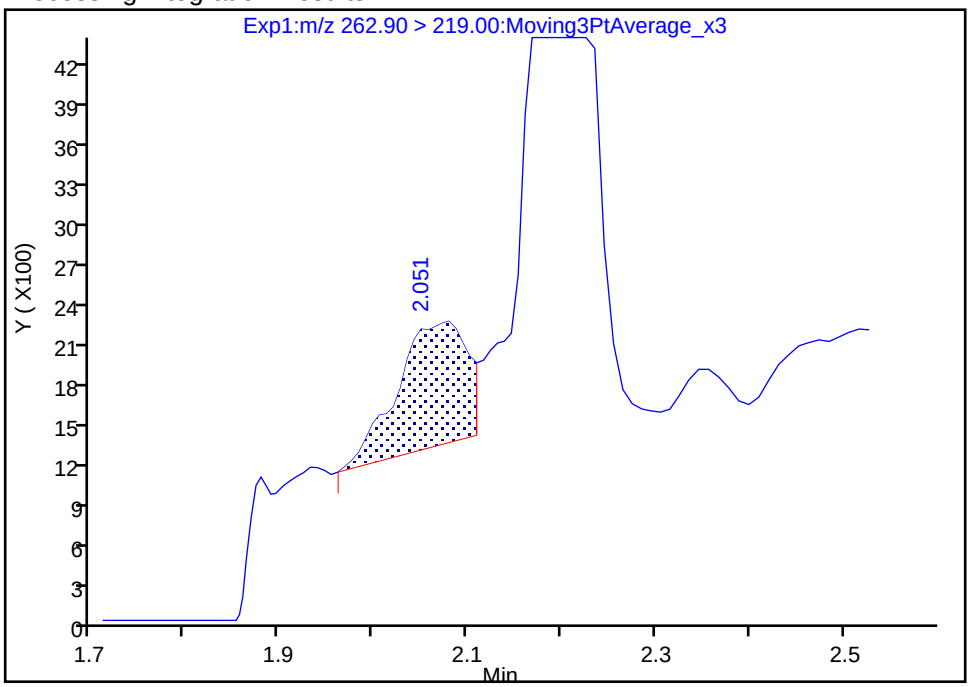
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d				
Injection Date:	08-Jun-2020 08:19:03	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

3 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

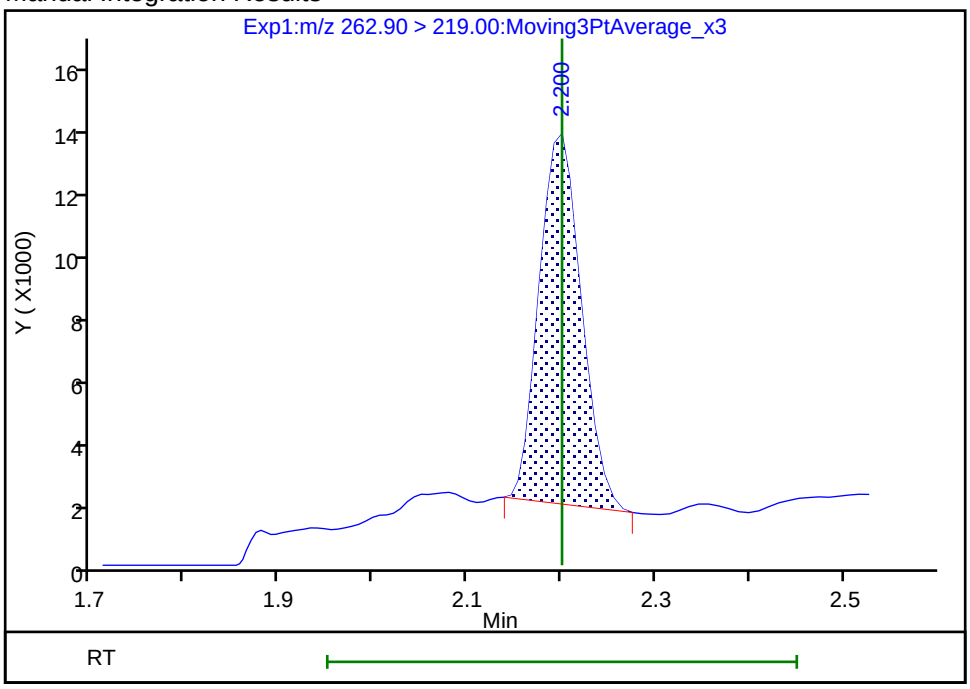
Processing Integration Results

RT: 2.05
Area: 4736
Amount: 0.007036
Amount Units: ng/ml



Manual Integration Results

RT: 2.20
Area: 35206
Amount: 0.052302
Amount Units: ng/ml



Reviewer: sorndeek, 09-Jun-2020 08:13:51
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

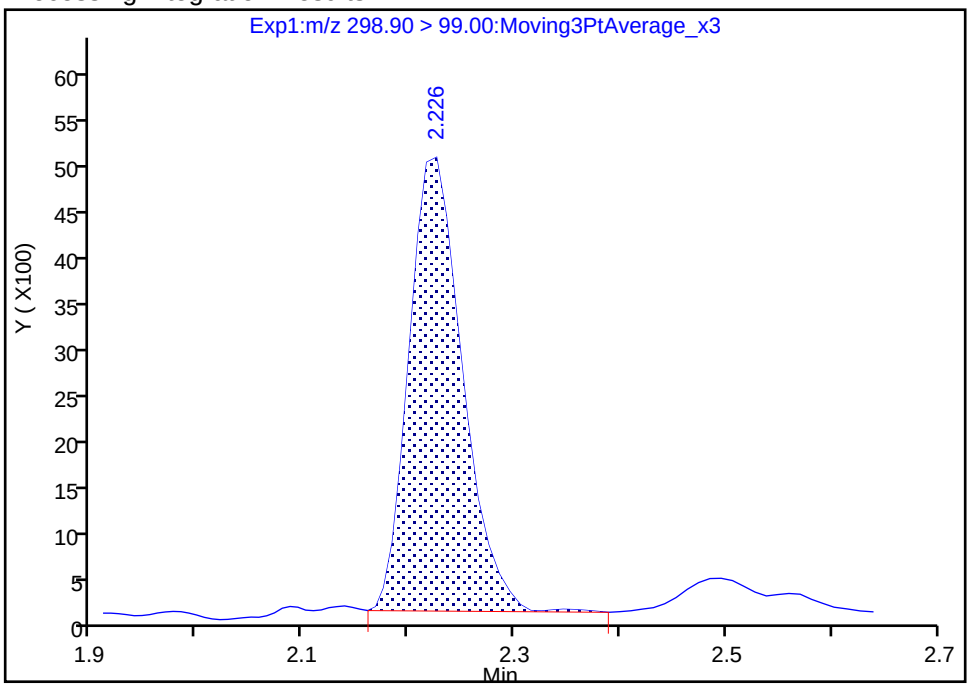
Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d
Injection Date: 08-Jun-2020 08:19:03 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: SACINSTRLCMS02 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

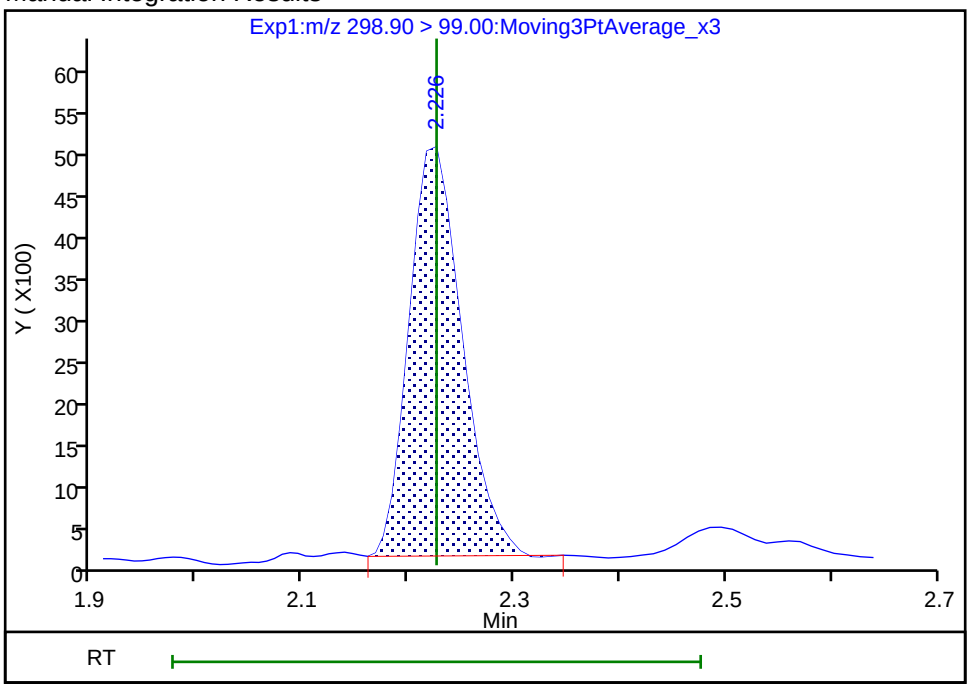
Processing Integration Results

RT: 2.23
Area: 17442
Amount: 0.044887
Amount Units: ng/ml



Manual Integration Results

RT: 2.23
Area: 17234
Amount: 0.044425
Amount Units: ng/ml



Reviewer: sorndeek, 09-Jun-2020 08:14:03
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

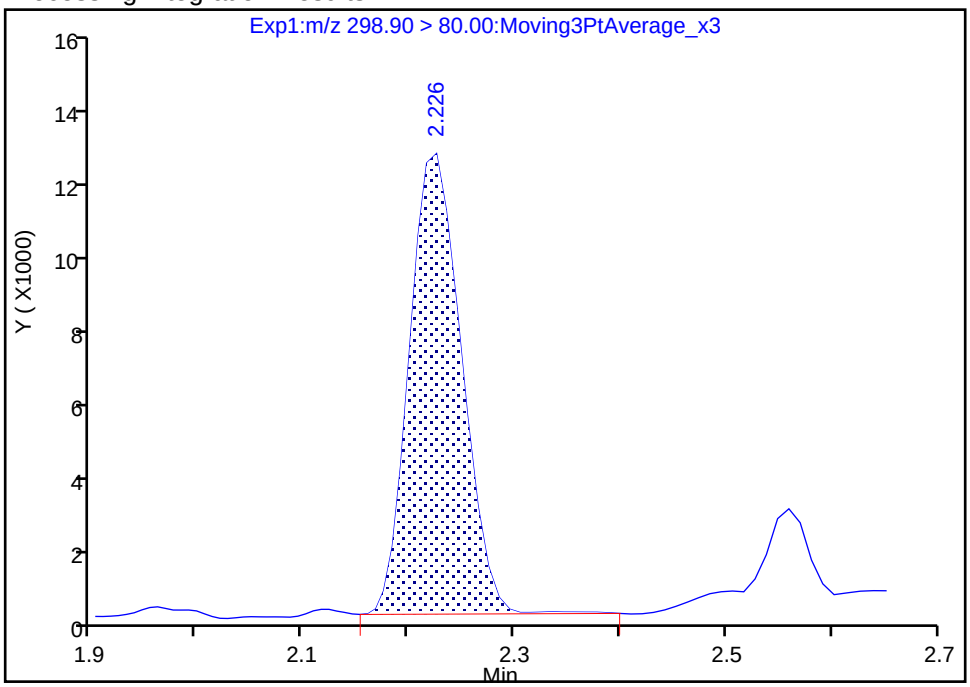
Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d
Injection Date: 08-Jun-2020 08:19:03 Instrument ID: A9
Lims ID: CCVL
Client ID:
Operator ID: SACINSTRLCMS02 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A9 Limit Group: LC PFC ICAL
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

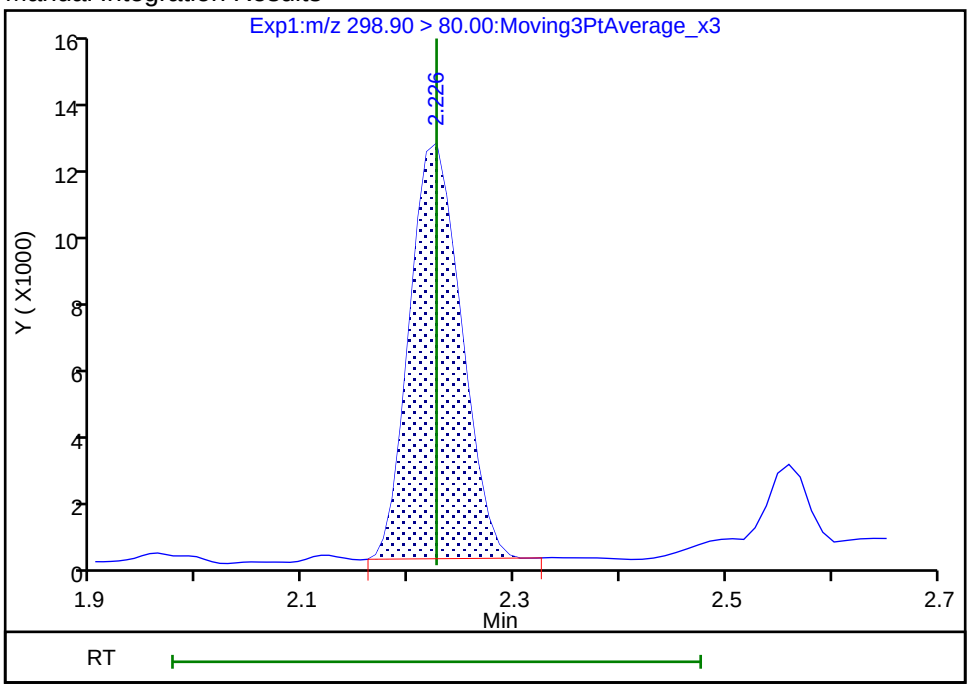
Processing Integration Results

RT: 2.23
Area: 41474
Amount: 0.044887
Amount Units: ng/ml



Manual Integration Results

RT: 2.23
Area: 41047
Amount: 0.044425
Amount Units: ng/ml



Reviewer: sorndeek, 09-Jun-2020 08:14:10
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

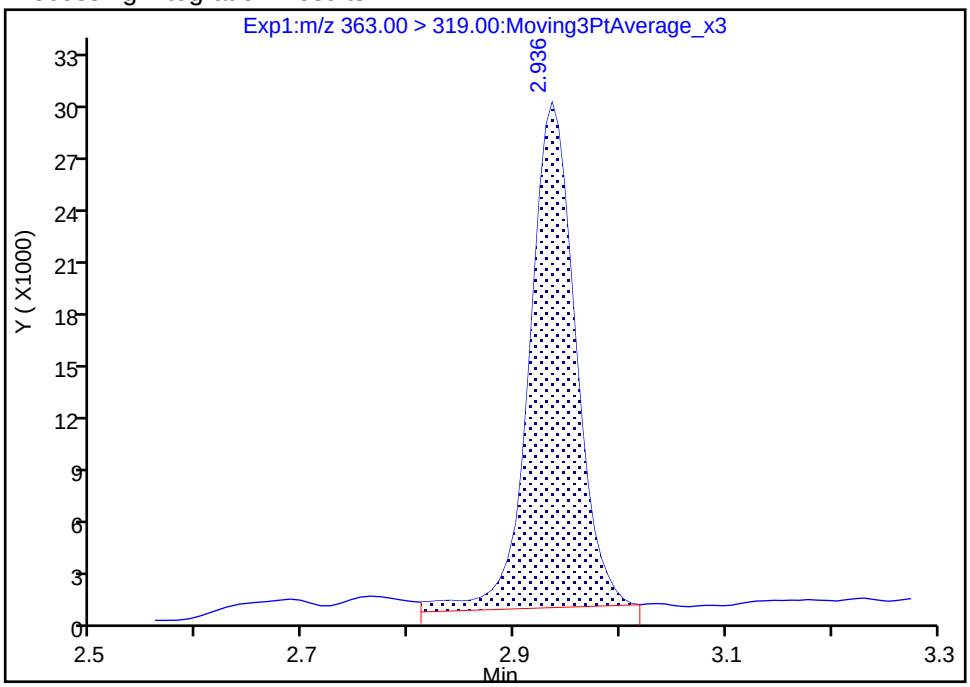
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d				
Injection Date:	08-Jun-2020 08:19:03	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

18 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

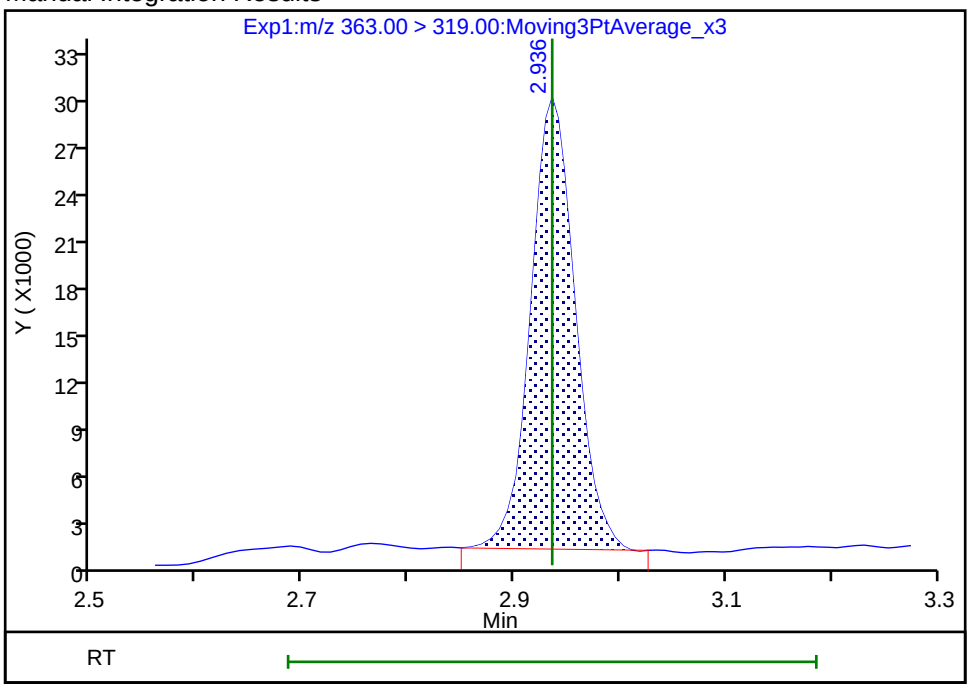
Processing Integration Results

RT: 2.94
Area: 87736
Amount: 0.052459
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 83357
Amount: 0.049841
Amount Units: ng/ml



Reviewer: contrerase, 08-Jun-2020 10:44:52
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

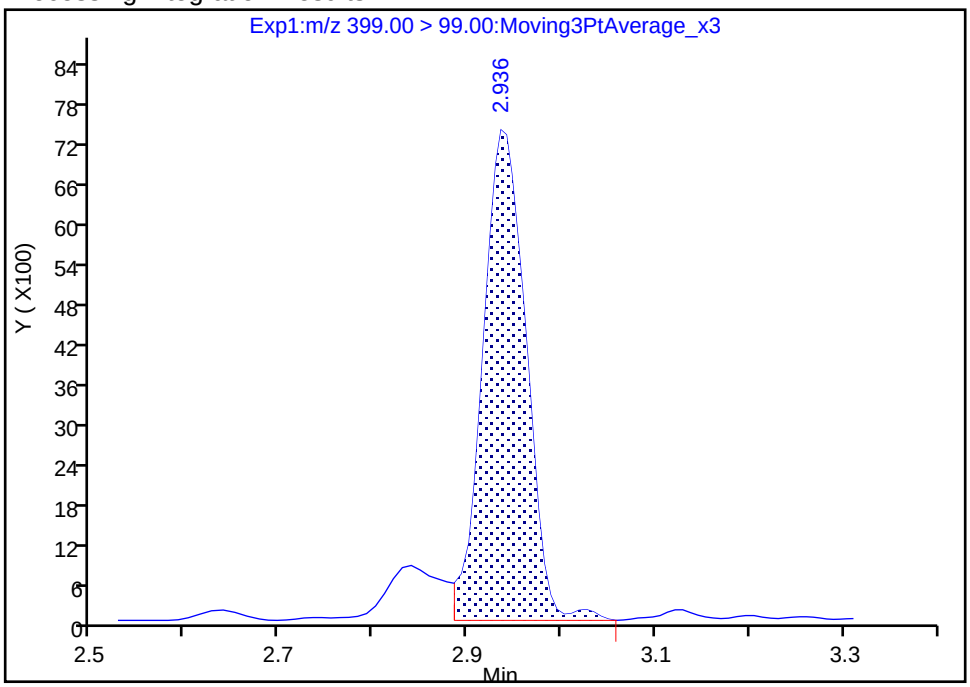
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d				
Injection Date:	08-Jun-2020 08:19:03	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

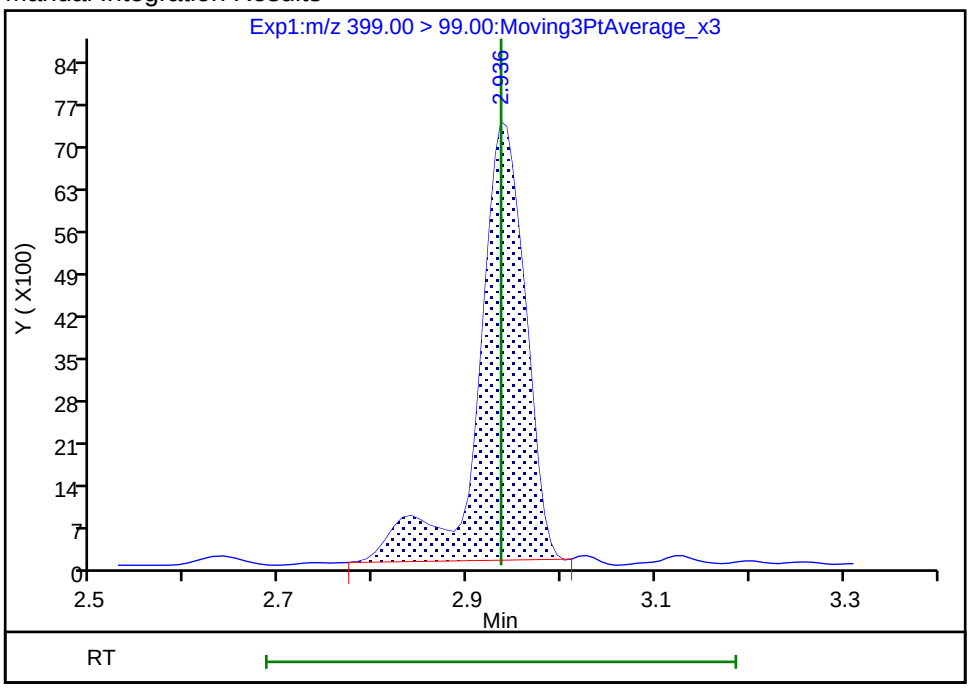
Processing Integration Results

RT: 2.94
Area: 23358
Amount: 0.049710
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 25378
Amount: 0.048374
Amount Units: ng/ml



Reviewer: sorndeek, 09-Jun-2020 08:14:30

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

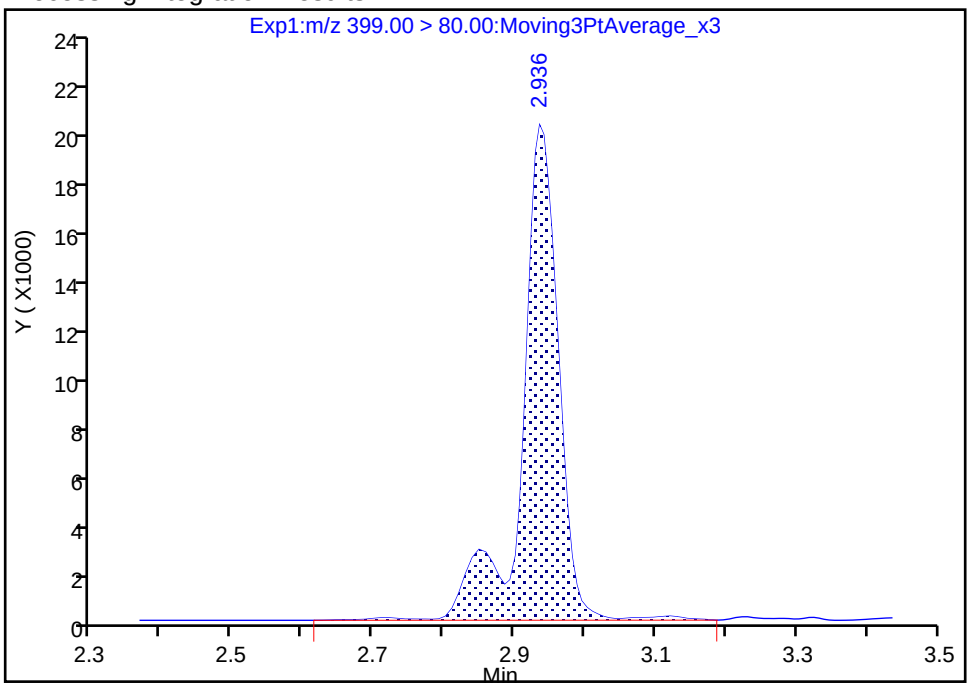
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d				
Injection Date:	08-Jun-2020 08:19:03	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

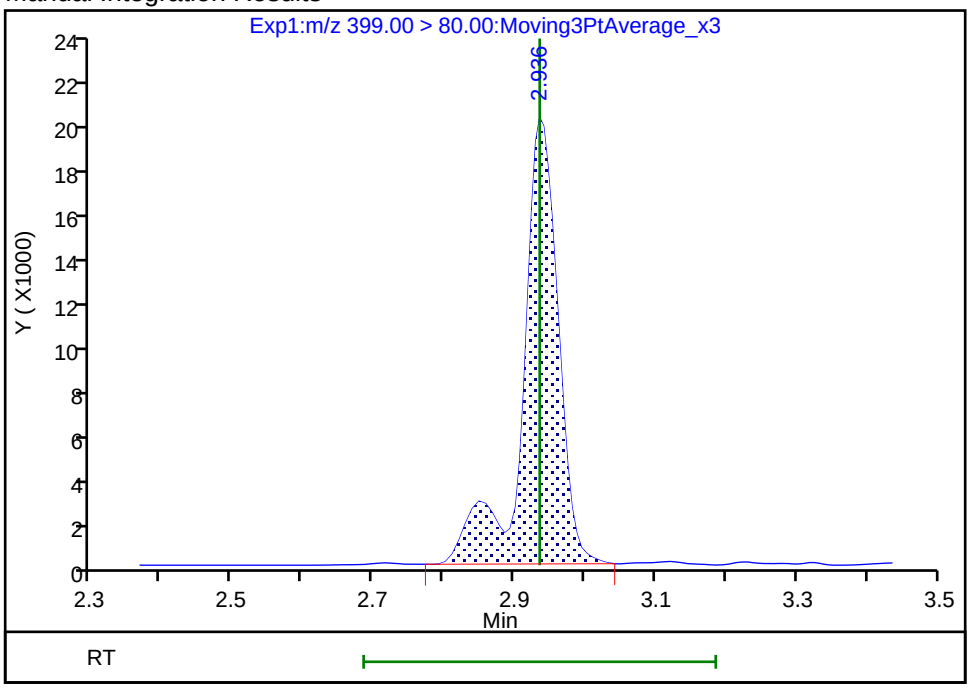
Processing Integration Results

RT: 2.94
Area: 73321
Amount: 0.049710
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 71351
Amount: 0.048374
Amount Units: ng/ml



Reviewer: sorndeek, 09-Jun-2020 08:14:35

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

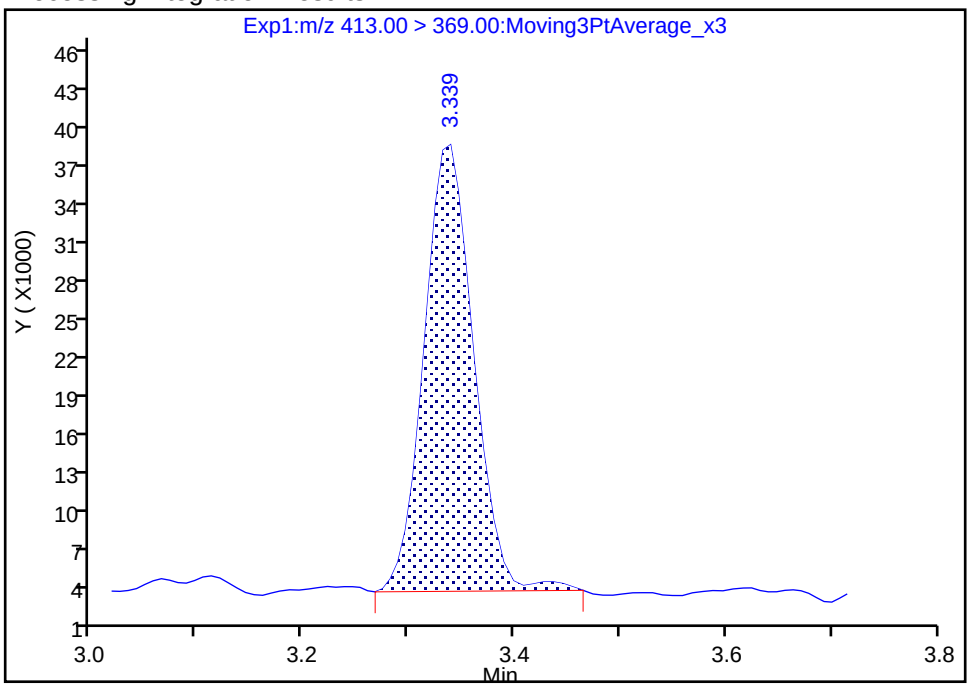
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d				
Injection Date:	08-Jun-2020 08:19:03	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

24 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

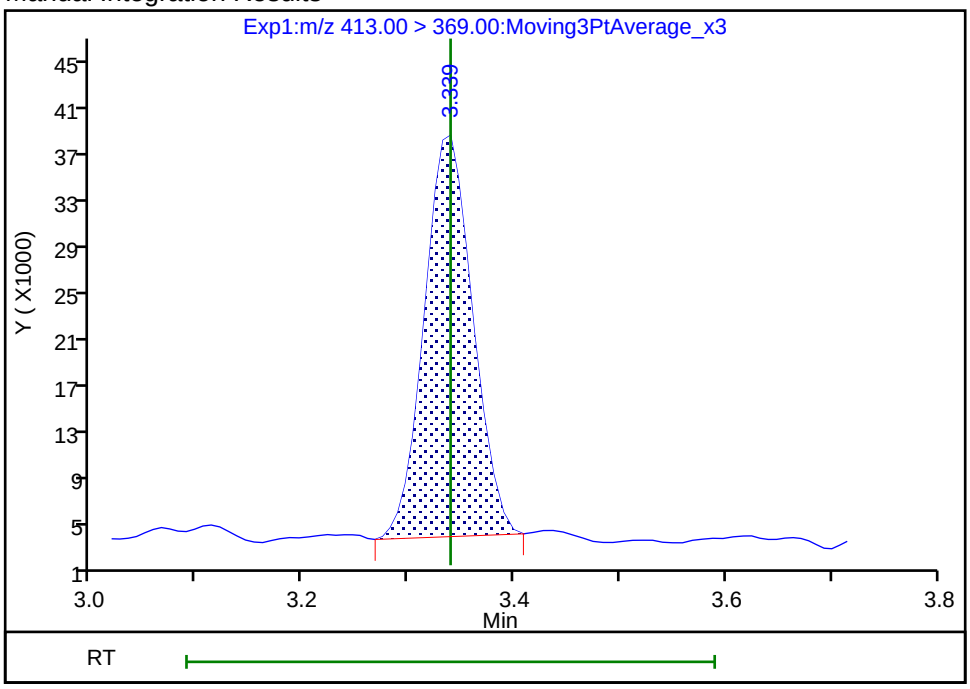
Processing Integration Results

RT: 3.34
Area: 112186
Amount: 0.054771
Amount Units: ng/ml



Manual Integration Results

RT: 3.34
Area: 108911
Amount: 0.053172
Amount Units: ng/ml



Reviewer: contrerase, 08-Jun-2020 10:45:04

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

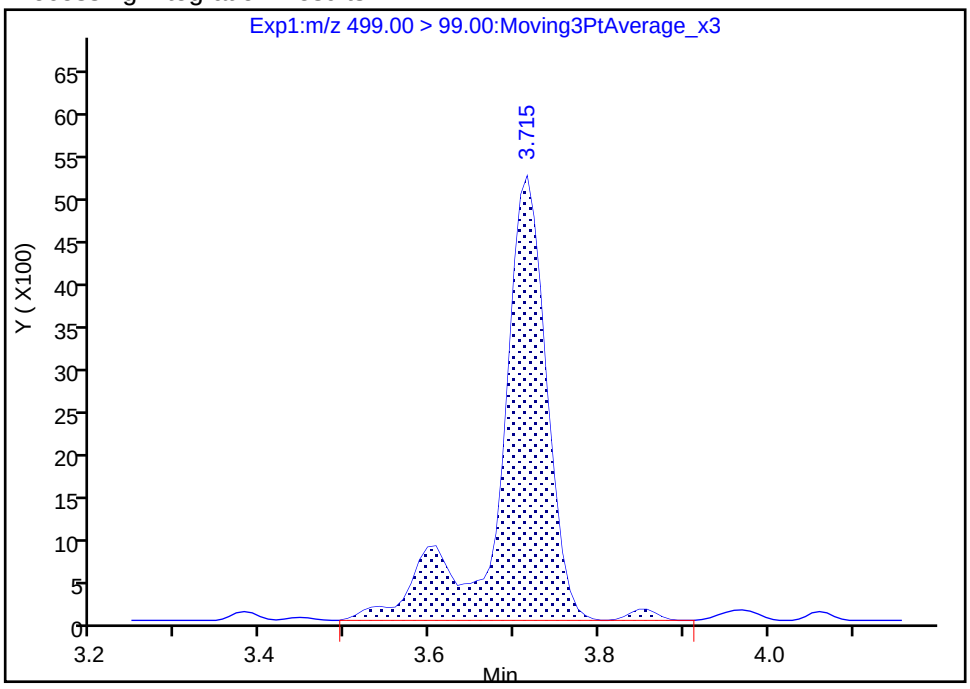
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d				
Injection Date:	08-Jun-2020 08:19:03	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

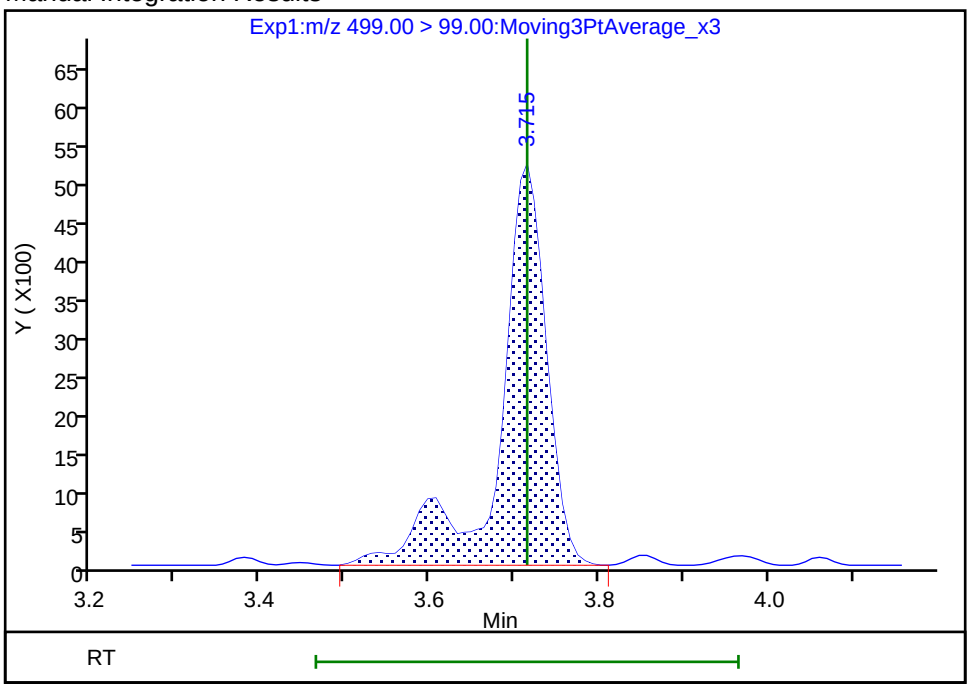
Processing Integration Results

RT: 3.71
Area: 20589
Amount: 0.048411
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 20296
Amount: 0.047140
Amount Units: ng/ml



Reviewer: sorndeek, 09-Jun-2020 08:14:57

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

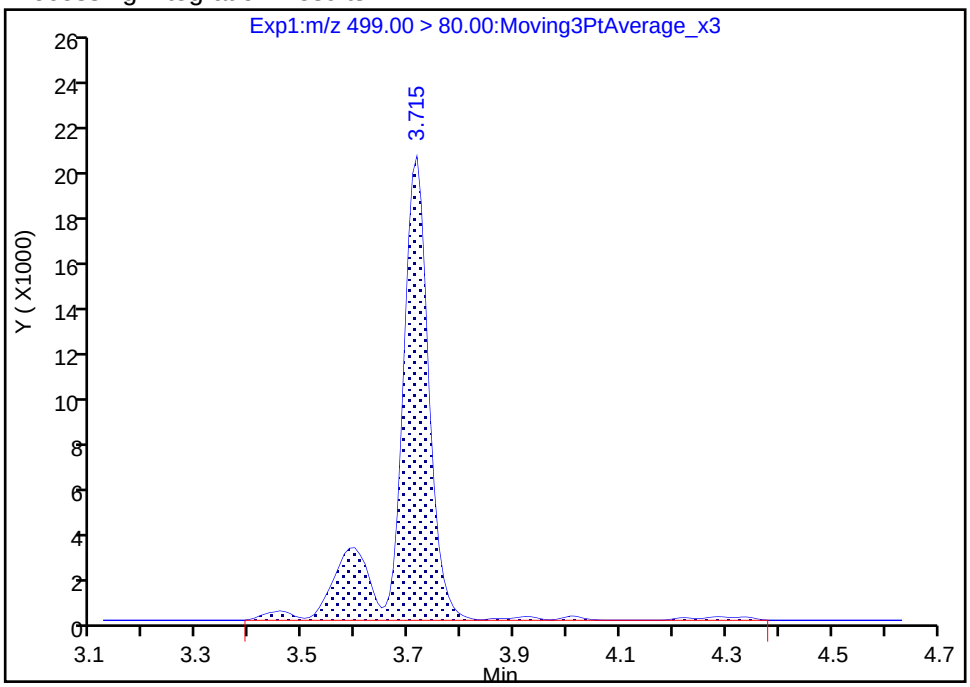
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d				
Injection Date:	08-Jun-2020 08:19:03	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

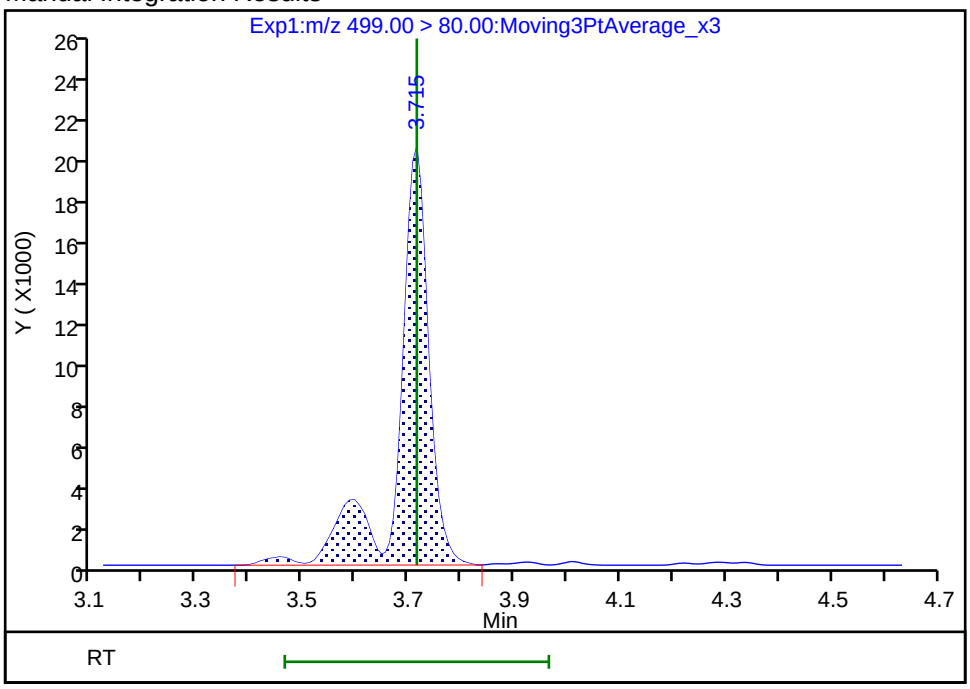
Processing Integration Results

RT: 3.71
Area: 84890
Amount: 0.048411
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 82661
Amount: 0.047140
Amount Units: ng/ml



Reviewer: sorndeek, 09-Jun-2020 08:15:04

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

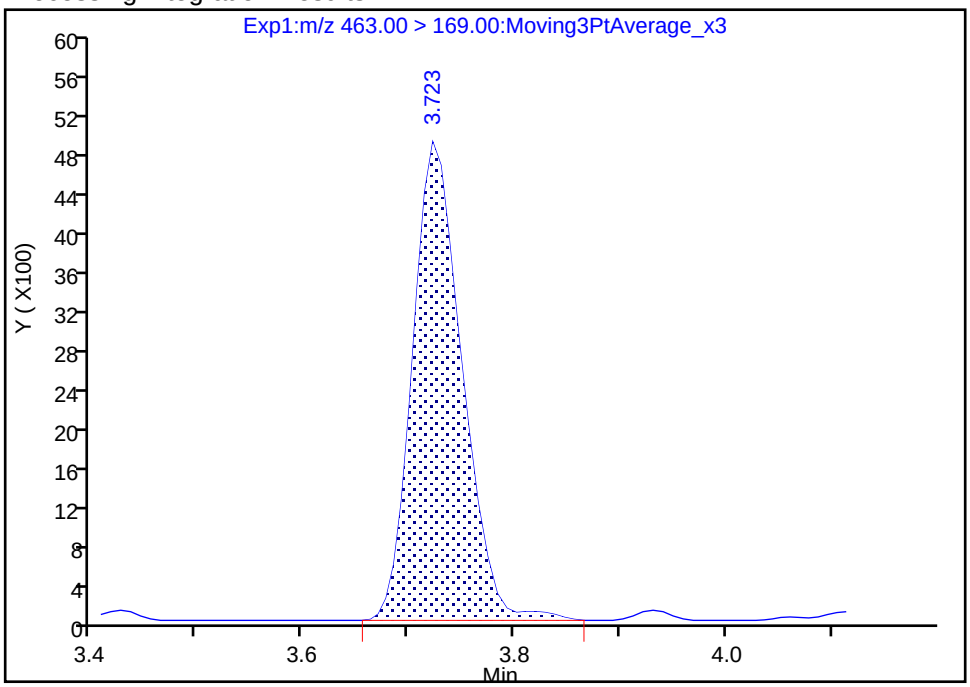
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d				
Injection Date:	08-Jun-2020 08:19:03	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

30 Perfluorononanoic acid, CAS: 375-95-1

Signal: 2

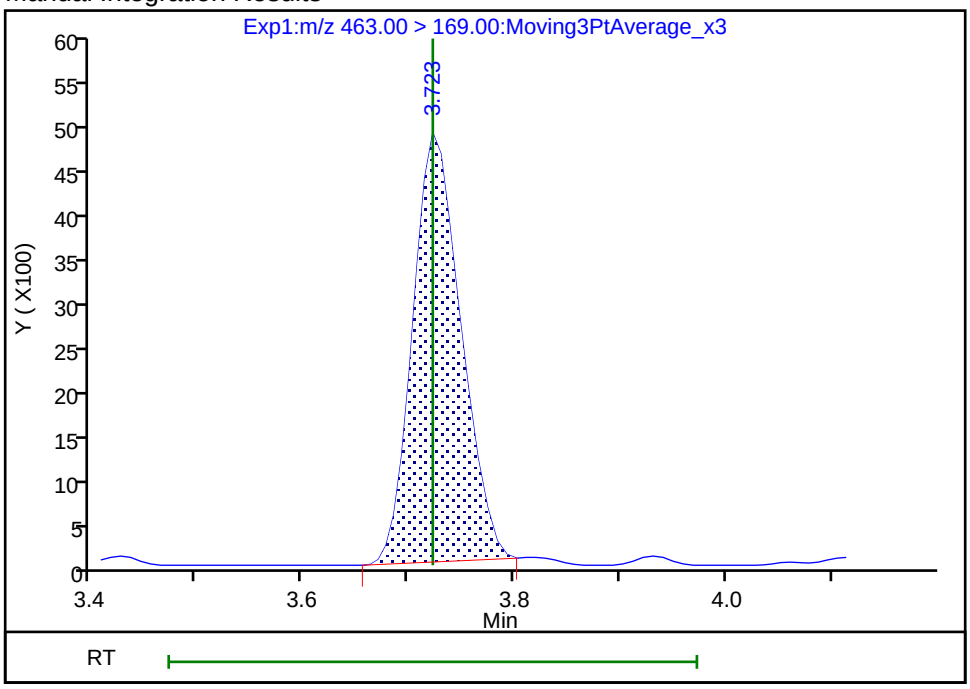
Processing Integration Results

RT: 3.72
Area: 15932
Amount: 0.053579
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 15364
Amount: 0.050695
Amount Units: ng/ml



Reviewer: sorndeek, 09-Jun-2020 08:15:12

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

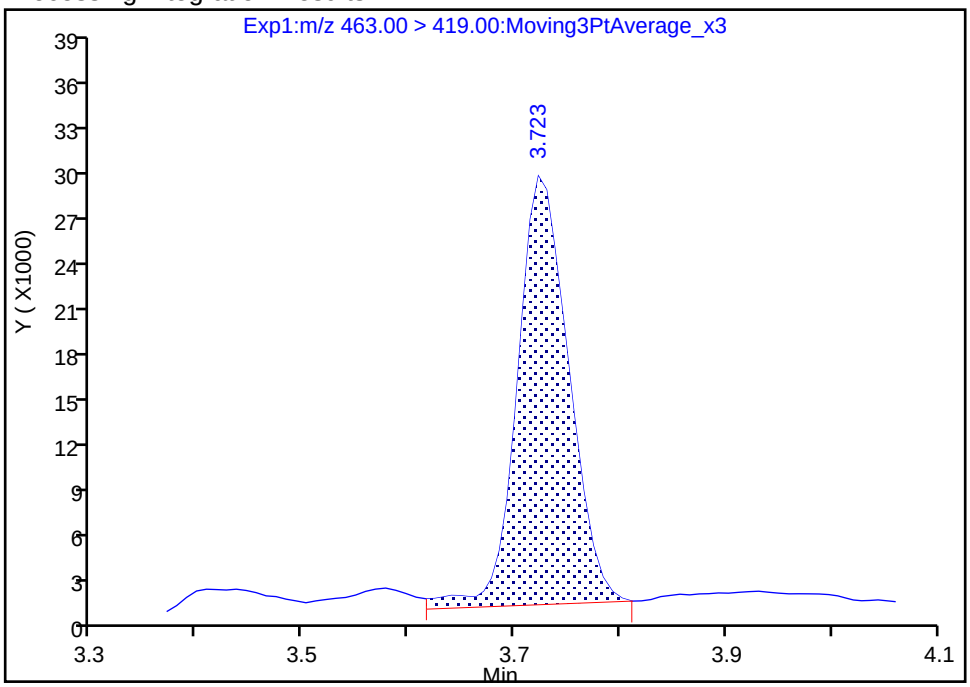
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d				
Injection Date:	08-Jun-2020 08:19:03	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

30 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

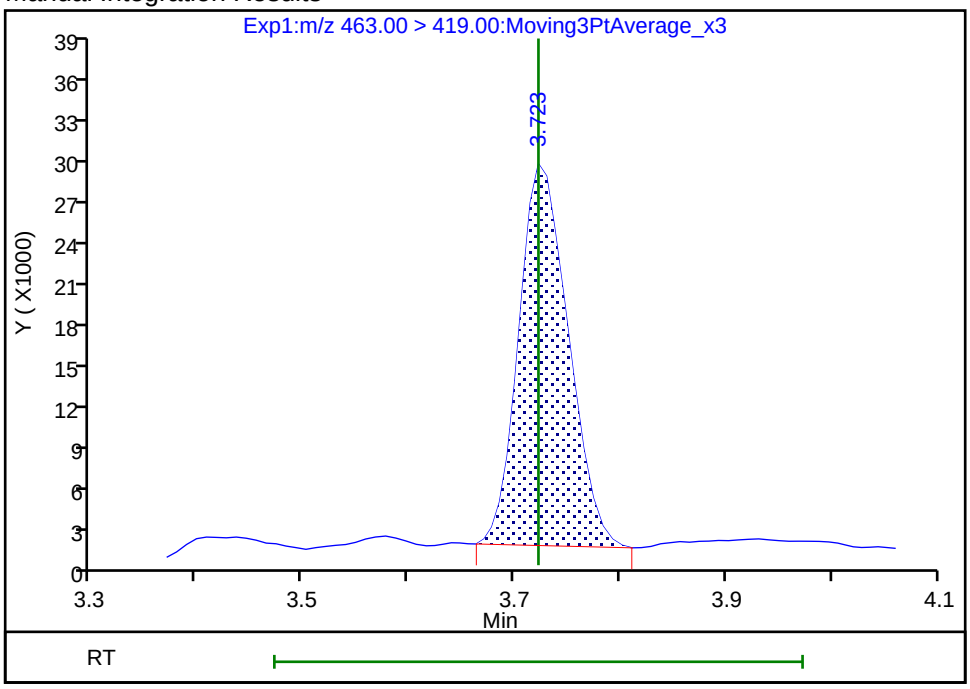
Processing Integration Results

RT: 3.72
Area: 95103
Amount: 0.053579
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 89985
Amount: 0.050695
Amount Units: ng/ml



Reviewer: sorndeek, 09-Jun-2020 08:15:18

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

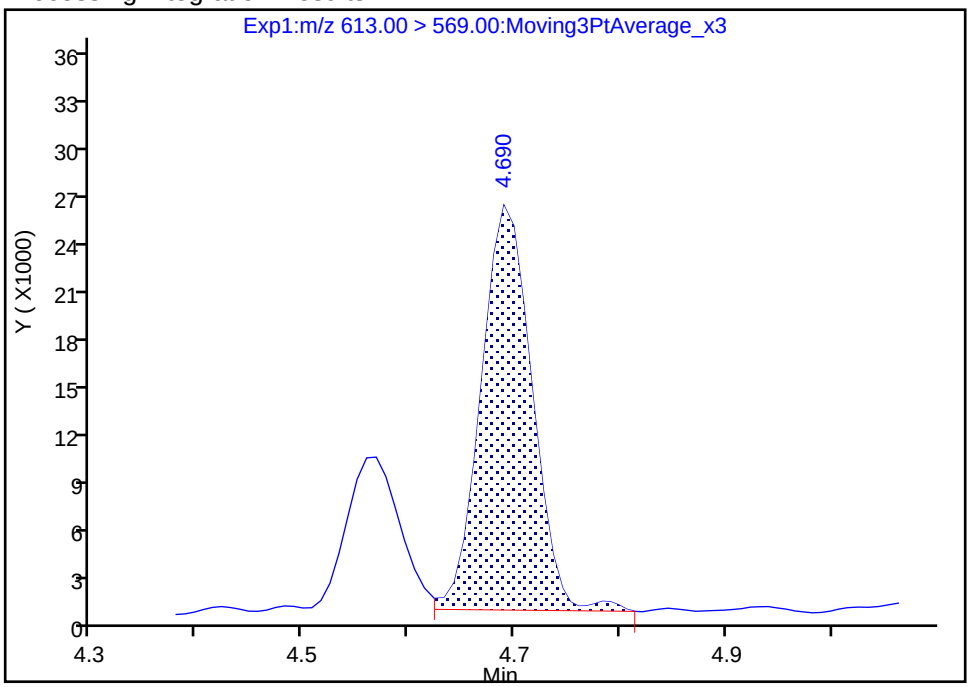
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_005.d				
Injection Date:	08-Jun-2020 08:19:03	Instrument ID:	A9		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

52 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

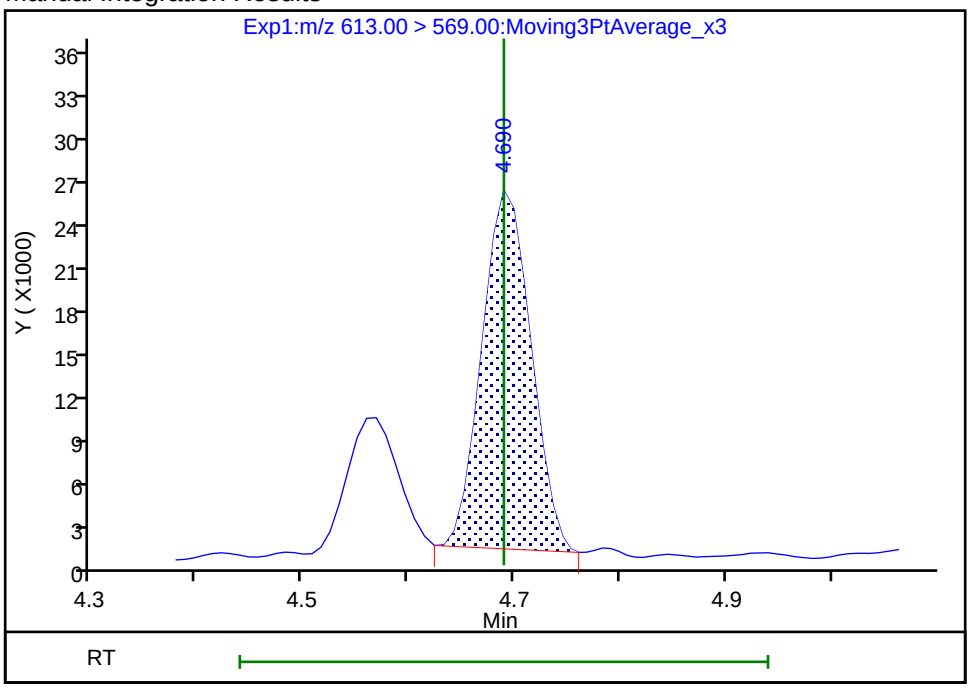
Processing Integration Results

RT: 4.69
Area: 85756
Amount: 0.053808
Amount Units: ng/ml



Manual Integration Results

RT: 4.69
Area: 80574
Amount: 0.050556
Amount Units: ng/ml



Reviewer: contrerase, 08-Jun-2020 10:46:01
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-384406/3 Calibration Date: 06/08/2020 08:28

Instrument ID: A9 Calib Start Date: 06/02/2020 15:24

GC Column: Acquity ID: 2.10(mm) Calib End Date: 06/02/2020 16:30

Lab File ID: 2020.06.08_A9_PFC.LLA_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	0.4794	0.5219		1.09	1.00	8.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.044	0.9915		0.950	1.00	-5.0	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.087	1.147		0.933	0.884	5.5	50.0
4:2 FTS	AveID	2.868	2.907		0.947	0.934	1.4	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.037	0.9862		0.951	1.00	-4.9	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	1.009	1.114		1.04	0.938	10.4	50.0
HFPO-DA (GenX)	AveID	0.5790	0.5735		0.990	1.00	-1.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.306	1.358		1.04	1.00	3.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.179	1.100		0.849	0.910	-6.7	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	1.906	2.119		1.05	0.942	11.2	50.0
6:2 FTS	AveID	2.227	2.317		0.987	0.948	4.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.058	1.158		1.04	0.952	9.5	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.257	1.252		0.996	1.00	-0.4	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.091	1.100		0.936	0.928	0.9	40.0
Perfluorononanoic acid (PFNA)	AveID	1.089	1.121		1.03	1.00	2.9	40.0
F-53B Major	AveID	1.149	1.205		0.977	0.932	4.9	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6782	0.7408		1.05	0.960	9.2	50.0
8:2 FTS	AveID	2.202	2.140		0.931	0.958	-2.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.001	1.093		1.09	1.00	9.2	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	3.256	3.210		0.986	1.00	-1.4	40.0
NMeFOSAA	AveID	0.9274	0.9264		0.999	1.00	-0.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8058	0.8466		1.01	0.964	5.1	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7722	0.7933		1.03	1.00	2.7	40.0
NEtFOSAA	AveID	0.8961	0.8496		0.948	1.00	-5.2	40.0
F-53B Minor	AveID	1.563	1.661		1.00	0.942	6.2	50.0
NMeFOSE	AveID	1.404	1.363		0.971	1.00	-2.9	40.0
NMeFOSA	AveID	0.8825	0.9722		1.10	1.00	10.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.048	1.103		1.05	1.00	5.2	40.0
10:2 FTS	AveID	1.964	2.130		1.05	0.964	8.5	50.0
NEtFOSE	AveID	1.470	1.432		0.974	1.00	-2.6	40.0
NEtFOSA	AveID	1.280	1.411		1.10	1.00	10.2	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0899	0.0943		1.01	0.968	4.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-384406/3 Calibration Date: 06/08/2020 08:28

Instrument ID: A9 Calib Start Date: 06/02/2020 15:24

GC Column: Acquity ID: 2.10(mm) Calib End Date: 06/02/2020 16:30

Lab File ID: 2020.06.08_A9_PFC.LLA_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7140	0.8143		1.14	1.00	14.0	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1699	0.1570		0.924	1.00	-7.6	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.033		1.14	1.00	14.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5681	0.6204		1.09	1.00	9.2	50.0
13C4 PFBA	Ave	1.205	1.073		2.22	2.50	-11.0	50.0
13C5 PFPeA	Ave	0.4352	0.3981		2.29	2.50	-8.5	50.0
13C3 PFBS	Ave	0.5598	0.5256		2.18	2.33	-6.1	50.0
M2-4:2 FTS	Ave	0.1177	0.0915		1.82	2.34	-22.3	50.0
13C2 PFHxA	Ave	0.8637	0.8822		2.55	2.50	2.1	50.0
13C3 HFPO-DA	Ave	0.5521	0.5084		2.30	2.50	-7.9	50.0
13C4 PFHpA	Ave	0.7783	0.7417		2.38	2.50	-4.7	50.0
18O2 PFHxS	Ave	0.7377	0.7294		2.34	2.37	-1.1	50.0
M2-6:2 FTS	Ave	0.0988	0.0879		2.11	2.38	-11.0	50.0
13C4 PFOA	Ave	0.9544	0.9597		2.51	2.50	0.6	50.0
13C4 PFOS	Ave	0.9416	0.9257		2.35	2.39	-1.7	50.0
13C5 PFNA	Ave	0.9381	0.9198		2.45	2.50	-2.0	50.0
13C2 PFDA	Ave	1.098	1.132		2.58	2.50	3.2	50.0
13C8 FOSA	Ave	0.3734	0.4194		2.81	2.50	12.3	50.0
M2-8:2 FTS	Ave	0.1176	0.1093		2.23	2.40	-7.1	50.0
d3-NMeFOSAA	Ave	0.4372	0.4215		2.41	2.50	-3.6	50.0
13C2 PFUnA	Ave	0.9597	0.9658		2.52	2.50	0.6	50.0
d5-NEtFOSAA	Ave	0.3319	0.3534		2.66	2.50	6.5	50.0
d7-N-MeFOSE-M	Ave	0.1093	0.1213		13.9	12.5	10.9	50.0
d-N-MeFOSA-M	Ave	0.2211	0.2069		2.34	2.50	-6.4	50.0
13C2 PFDoA	Ave	0.9094	0.9342		2.57	2.50	2.7	50.0
d9-N-EtFOSE-M	Ave	0.1102	0.1231		14.0	12.5	11.7	50.0
d-N-EtFOSA-M	Ave	0.1665	0.1577		2.37	2.50	-5.3	50.0
13C2 PFTeDA	Ave	0.8835	0.9125		2.58	2.50	3.3	50.0
13C2 PFHxDA	Ave	0.8563	0.8735		2.55	2.50	2.0	50.0
13C8 PFOA	Ave	0.9349	0.9391		2.46	2.45	0.4	50.0
13C8 PFOS	Ave	0.2183	0.2270		2.49	2.39	4.0	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 08-Jun-2020 08:28:23 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200608-97159.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 09-Jun-2020 08:16:33 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1060

First Level Reviewer: contrerase Date: 08-Jun-2020 10:51:58
Ratio Calibration: Average of Initial Calibration

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	1.888	1.888	0.0	0.567	4873055	2.22		89.0	9300	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.888	1.890	-0.002	1.000	1017264	1.09		109	1151	
D 4 13C5 PFPeA										
267.90 > 223.00	2.190	2.190	0.0	0.657	1808883	2.29		91.5	6342	
3 Perfluoropentanoic acid										M
262.90 > 219.00	2.190	2.190	0.0	1.000	717384	0.9497		95.0	129	M
D 6 13C3 PFBS										
301.90 > 80.00	2.223	2.223	0.0	0.667	2220777	2.18		93.9	4441	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.223	2.226	-0.003	1.000	968256	0.9329	Target=2.39	106	720	
298.90 > 99.00	2.223	2.226	-0.003	1.000	398612		2.43(1.20-3.59)		631	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.503	2.503	0.0	0.751	388109	1.82		77.7	2706	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.503	2.506	-0.003	1.000	451295	0.9466		101	2375	
D 10 13C2 PFHxA										
315.00 > 270.00	2.546	2.546	0.0	0.764	4008296	2.55		102	6992	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.546	2.549	-0.003	1.000	1581107	0.9509	Target=15.64	95.1	635	
313.00 > 119.00	2.546	2.549	-0.003	1.000	105332		15.01(7.82-23.46)		298	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.557	2.560	-0.003	1.150	998153	1.04	Target=1.75	110	1814	
349.00 > 99.00	2.557	2.560	-0.003	1.150	563259		1.77(0.88-2.63)		1633	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.660	2.660	0.0	0.798	2309809	2.30		92.1	4269	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.660	2.665	-0.005	1.000	529829	0.99		99.0	3112	
D 15 13C4 PFHpA										
367.00 > 322.00	2.930	2.930	0.0	0.879	3369707	2.38		95.3	4301	
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.930	2.936	-0.006	1.000	1829746	1.04	Target=4.39	104	514	
363.00 > 169.00	2.936	2.936	0.0	1.002	426906		4.29(2.20-6.59)		1109	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.936	2.936	0.0	1.000	1327088	0.8491	Target=3.04	93.3	1137	M
399.00 > 99.00	2.936	2.936	0.0	1.000	435471		3.05(1.52-4.56)		1006	M
D 17 18O2 PFHxS										
403.00 > 84.00	2.936	2.936	0.0	0.881	3134962	2.34		98.9	3420	
19 DONA										
377.00 > 251.00	2.982	2.988	-0.006	0.804	3357881	1.05	Target=2.17	111	7990	
377.00 > 85.00	2.982	2.988	-0.006	0.804	1497623		2.24(1.09-3.26)		3745	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.318	3.318	0.0	1.000	350830	0.9865		104	849	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.318	0.0	0.996	379298	2.11		89.0	2231	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.332	3.332	0.0	0.899	1854729	1.04	Target=3.82	110	3196	
449.00 > 99.00	3.332	3.332	0.0	0.899	486897		3.81(1.91-5.72)		2182	
$ 21 13C8 PFOA										
421.00 > 376.00	3.332	3.332	0.0	1.000	4177032	2.46		100	7199	
D 26 13C4 PFOA										
417.00 > 372.00	3.332	3.332	0.0	1.000	4360201	2.51		101	9862	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.332	3.339	-0.007	1.000	2184326	1.00	Target=2.82	99.6	211	
413.00 > 169.00	3.332	3.339	-0.007	1.000	719111		3.04(1.41-4.23)		1562	
* 25 13C2 PFOA										
415.00 > 370.00	3.332	3.339	-0.007		4543376	2.50			7835	
$ 27 13C8 PFOS										
507.00 > 99.00	3.707	3.708	-0.001	1.112	985794	2.49		104	2842	
D 31 13C4 PFOS										
503.00 > 80.00	3.707	3.707	0.0	1.112	4020530	2.35		98.3	2894	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.714	3.715	-0.001	1.002	1717806	0.9363	Target=4.25	101	19002	
499.00 > 99.00	3.707	3.715	-0.008	1.000	415611		4.13(2.13-6.38)		1125	
D 29 13C5 PFNA										
468.00 > 423.00	3.722	3.722	0.0	1.117	4178934	2.45		98.0	6498	
30 Perfluorononanoic acid										
463.00 > 419.00	3.722	3.723	-0.001	1.000	1873295	1.03	Target=5.46	103	332	
463.00 > 169.00	3.722	3.723	-0.001	1.000	340940		5.49(2.73-8.19)		1367	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.911	3.922	-0.011	1.055	1889302	0.9774		105	2631	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.059	4.061	-0.002	1.095	1196363	1.05	Target=4.97	109	4209	
549.00 > 99.00	4.059	4.061	-0.002	1.095	221495		5.40(2.48-7.45)		781	
D 33 13C2 PFDA										
515.00 > 470.00	4.086	4.086	0.0	1.226	5145130	2.58		103	10020	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.086	4.086	0.0	1.226	475693	2.23		92.9	1871	
D 36 13C8 FOSA										
506.00 > 78.00	4.086	4.086	0.0	1.226	1905439	2.81		112	6324	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.086	4.087	-0.001	1.000	407272	0.9311		97.2	1747	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.086	4.087	-0.001	1.000	2248634	1.09	Target=14.66	109	939	
513.00 > 169.00	4.086	4.087	-0.001	1.000	152716		14.72(7.33-21.99)		308	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.086	4.087	-0.001	1.000	2446673	0.9860		98.6	3474	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.247	4.247	0.0	1.275	1915077	2.41		96.4	3351	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.247	4.257	-0.010	1.000	709682	1.00		99.9	184	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.378	4.379	-0.001	1.181	1372939	1.01	Target=4.49	105	2555	
599.00 > 99.00	4.378	4.379	-0.001	1.181	302751		4.53(2.25-6.74)		3337	
D 46 13C2 PFUnA										
565.00 > 520.00	4.404	4.404	0.0	1.322	4388001	2.52		101	7821	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.404	4.405	-0.001	1.000	1392477	1.03	Target=10.82	103	372	
563.00 > 169.00	4.404	4.405	-0.001	1.000	137229		10.15(5.41-16.23)		730	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.413	4.413	0.0	1.324	1605666	2.66		106	1112	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.413	4.414	-0.001	1.000	545670	0.9481		94.8	1391	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.541	4.542	-0.001	1.225	2631717	1.00		106	5176	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.549	4.549	0.0	1.365	2754947	13.9		111	5782	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.558	4.560	-0.002	1.002	300340	0.9709		97.1	1167	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.567	4.567	0.0	1.371	939918	2.34		93.6	215	
50 NMeFOSA										
512.00 > 169.00	4.576	4.569	0.007	1.002	365518	1.10		110	1111	
D 56 13C2 PFDoA										
615.00 > 570.00	4.688	4.688	0.0	1.407	4244515	2.57		103	7348	
52 Perfluorododecanoic acid										
613.00 > 569.00	4.688	4.690	-0.002	1.000	1873133	1.05	Target=8.20	105	410	
613.00 > 169.00	4.688	4.690	-0.002	1.000	199070		9.41(4.10-12.30)		1226	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.706	4.709	-0.003	1.152	407891	1.05		108	2690	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.716	4.716	0.0	1.415	2796949	14.0		112	6427	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.734	4.736	-0.002	1.004	320387	0.9739		97.4	1383	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.743	4.743	0.0	1.423	716304	2.37		94.7	1379	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.751	4.753	-0.002	1.002	404187	1.10		110	672	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.913	4.915	-0.002	1.325	153522	1.01	Target=0.67	105	1695	
699.00 > 99.00	4.913	4.915	-0.002	1.325	227766		0.67(0.33-1.00)		2141	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.946	4.948	-0.002	1.055	1382457	1.14	Target=5.48	114	736	
663.00 > 169.00	4.946	4.948	-0.002	1.055	249146		5.55(2.74-8.23)		1486	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.188	5.188	0.0	1.557	4145799	2.58		103	7385	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.188	5.191	-0.003	1.000	260413	0.9242	Target=1.49	92.4	1267	
713.00 > 219.00	5.188	5.191	-0.003	1.000	187550		1.39(0.75-2.24)		1631	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.608	5.608	0.0	1.683	3968541	2.55		102	5514	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.617	5.619	-0.002	1.002	1639504	1.14	Target=5.24	114	257	
813.00 > 169.00	5.617	5.619	-0.002	1.002	283570		5.78(2.62-7.87)		2011	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.008	6.018	-0.010	1.071	984759	1.09	Target=4.86	109	229	
913.00 > 169.00	6.008	6.018	-0.010	1.071	188955		5.21(2.43-7.29)		954	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 09-Jun-2020 08:16:36 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_006.d

Injection Date: 08-Jun-2020 08:28:23 Instrument ID: A9

Lims ID: CCV L4

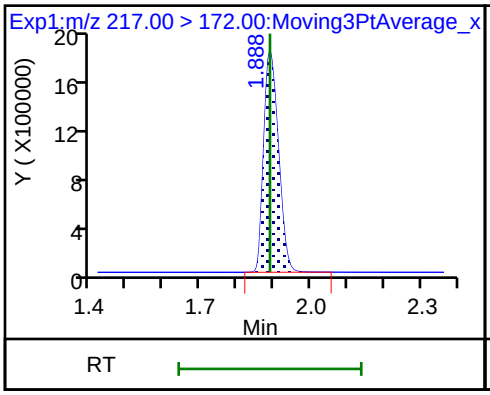
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 52 Worklist Smp#: 3

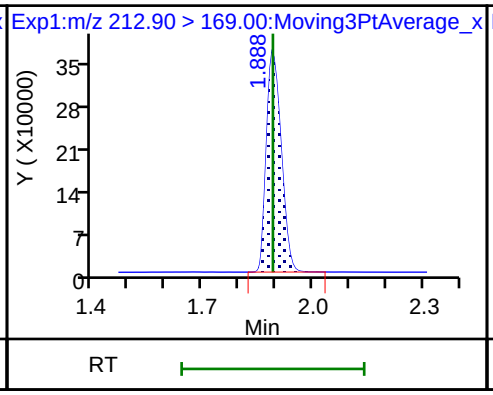
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

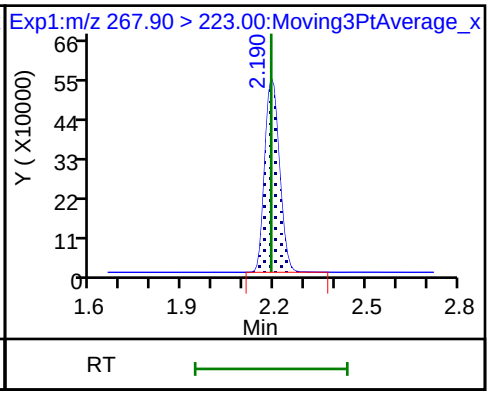
D 1 13C4 PFBA



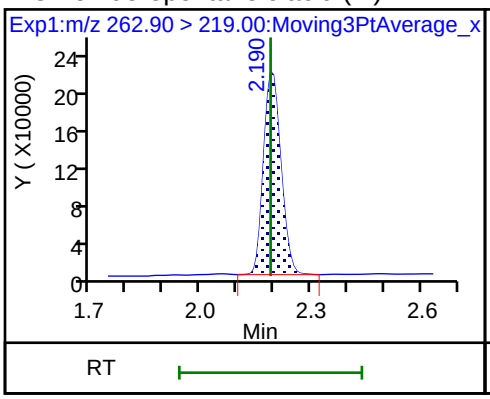
2 Perfluorobutanoic acid



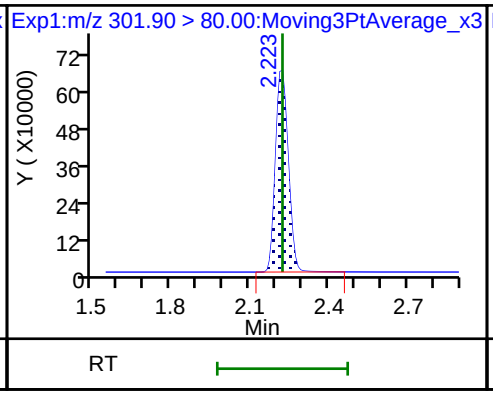
D 4 13C5 PFPeA



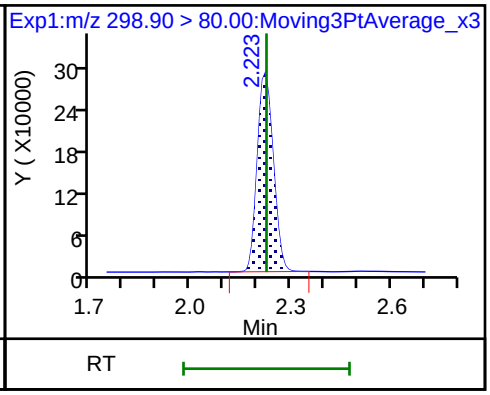
3 Perfluoropentanoic acid (M)



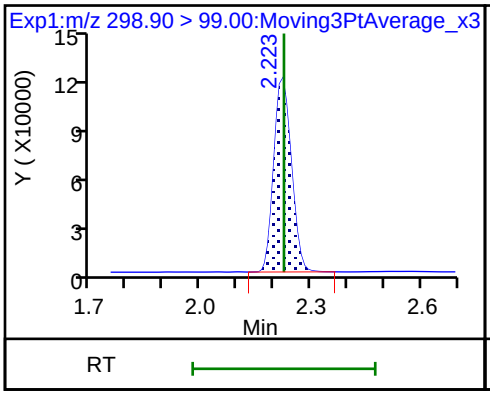
D 6 13C3 PFBS



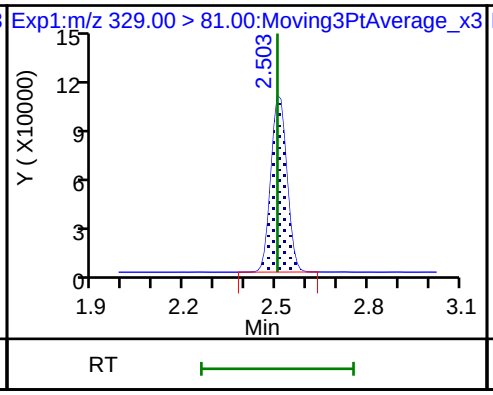
5 Perfluorobutanesulfonic acid



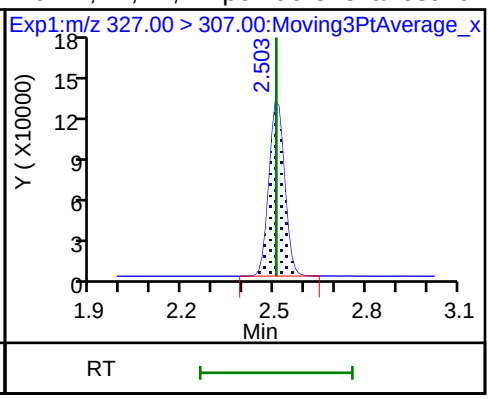
5 Perfluorobutanesulfonic acid



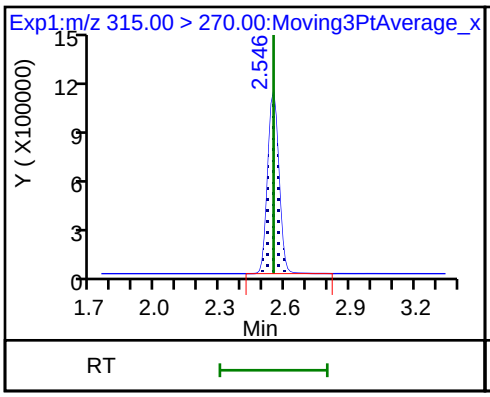
D 8 M2-4:2 FTS



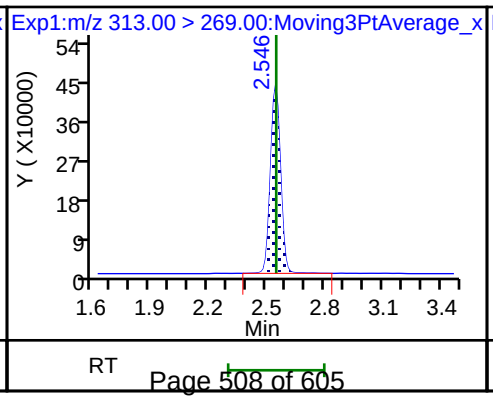
9 1H,1H,2H,2H-perfluorohexanesulfo



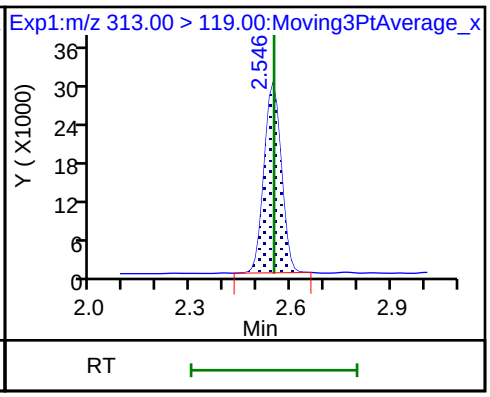
D 10 13C2 PFHxA



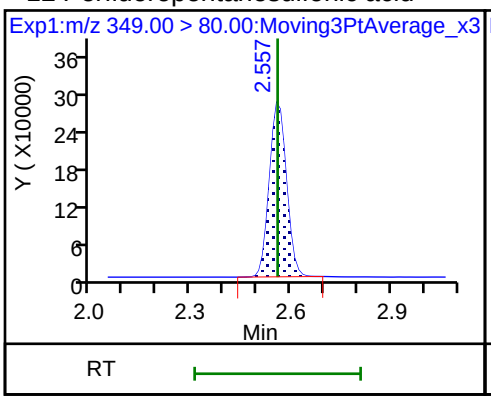
11 Perfluorohexanoic acid



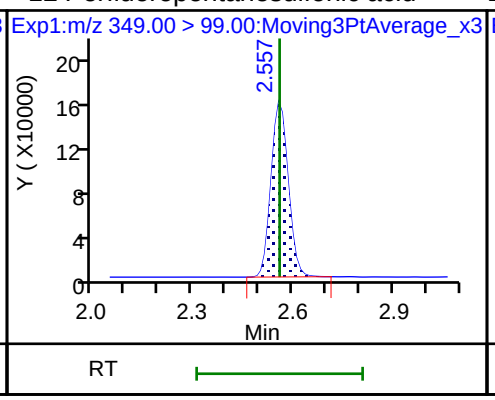
11 Perfluorohexanoic acid



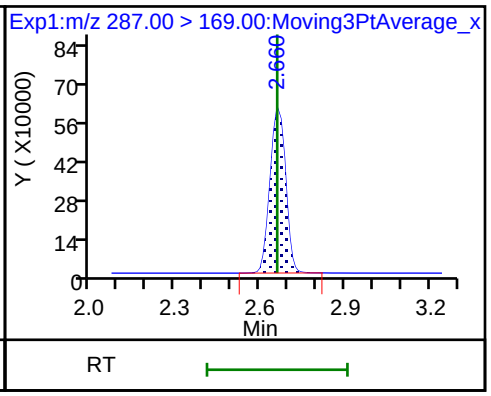
12 Perfluoropentanesulfonic acid



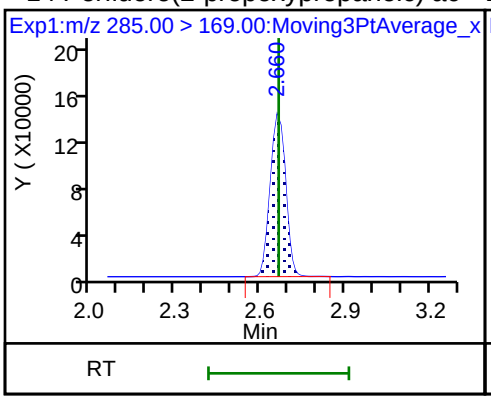
12 Perfluoropentanesulfonic acid



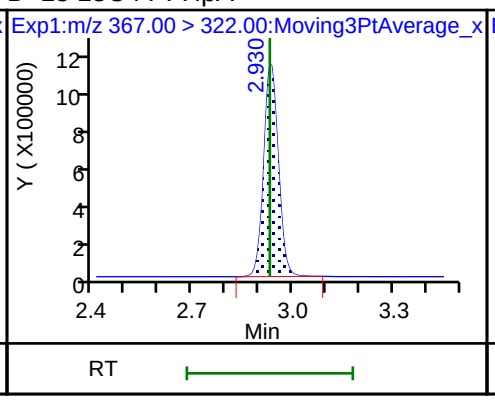
D 13 13C3 HFPO-DA



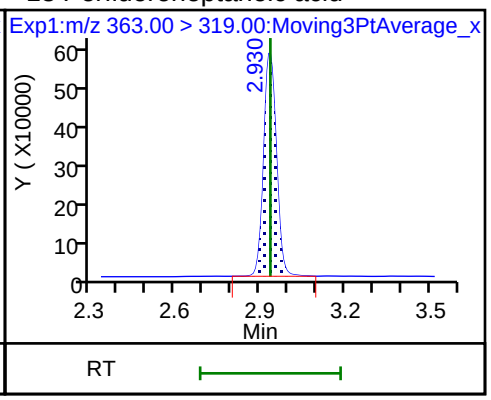
14 Perfluoro(2-propoxypropanoic) ac



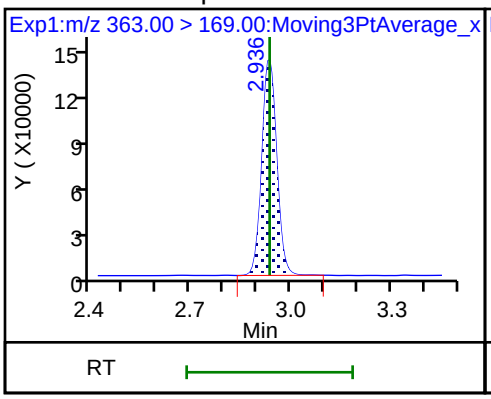
D 15 13C4 PFHpA



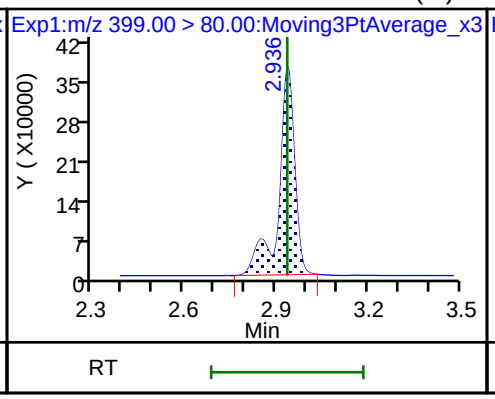
18 Perfluoroheptanoic acid



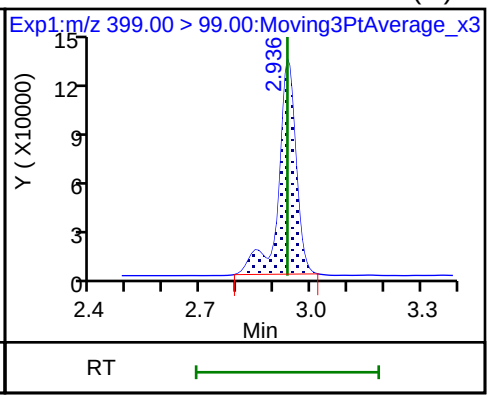
18 Perfluoroheptanoic acid



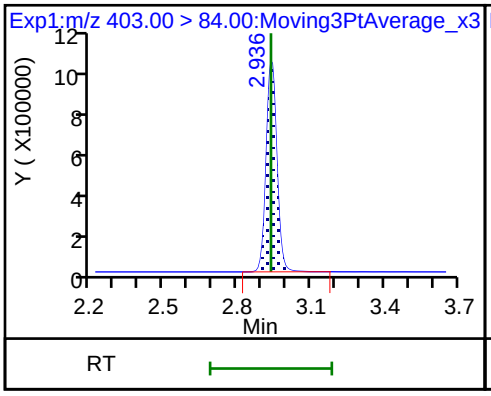
16 Perfluorohexanesulfonic acid (M)



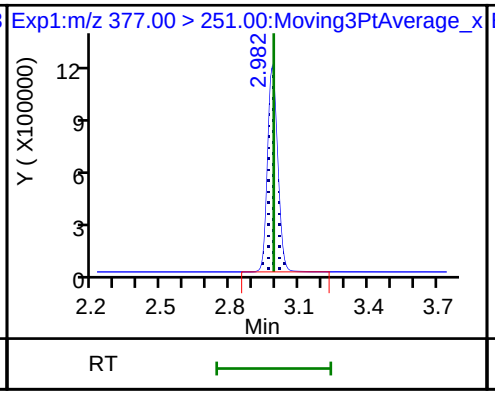
16 Perfluorohexanesulfonic acid (M)



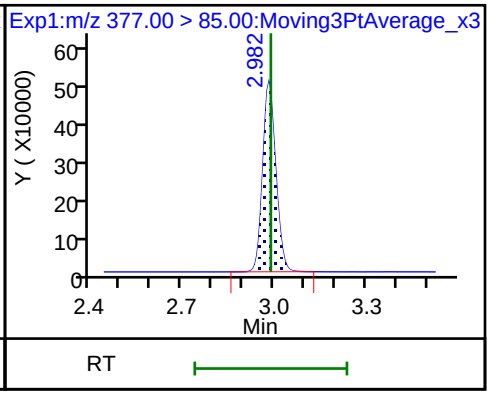
D 17 18O2 PFHxS



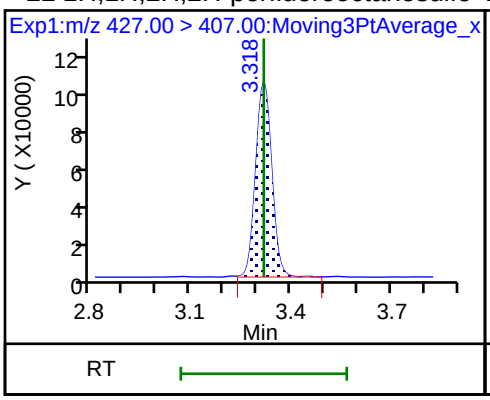
19 DONA



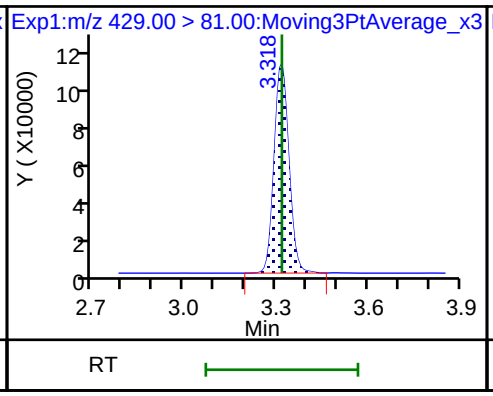
19 DONA



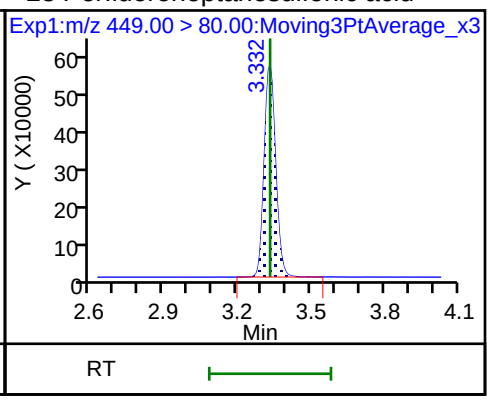
22 1H,1H,2H,2H-perfluorooctanesulfo



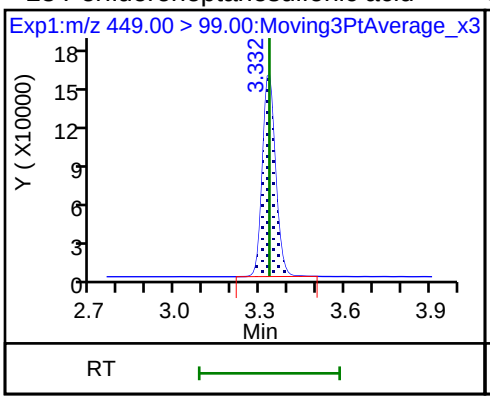
D 20 M2-6:2 FTS



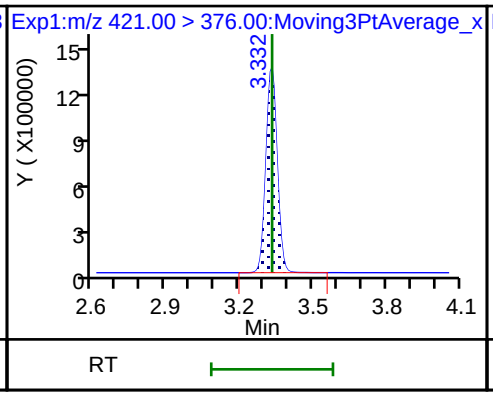
23 Perfluoroheptanesulfonic acid



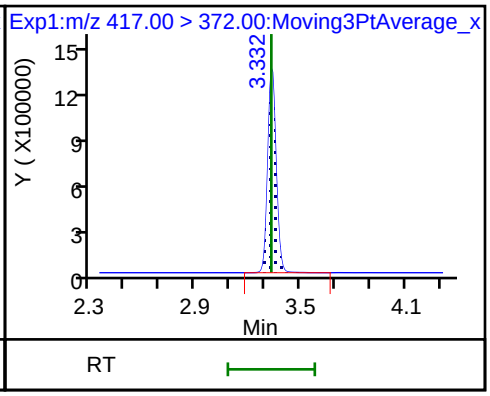
23 Perfluoroheptanesulfonic acid



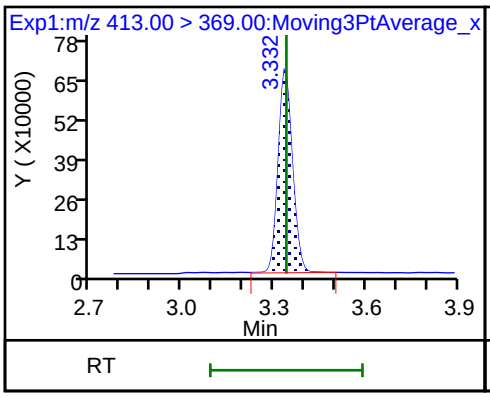
$ 21 13C8 PFOA



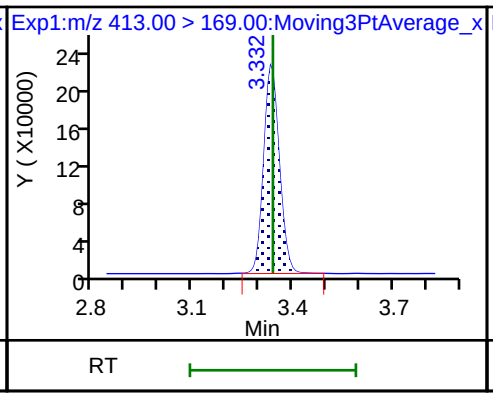
D 26 13C4 PFOA



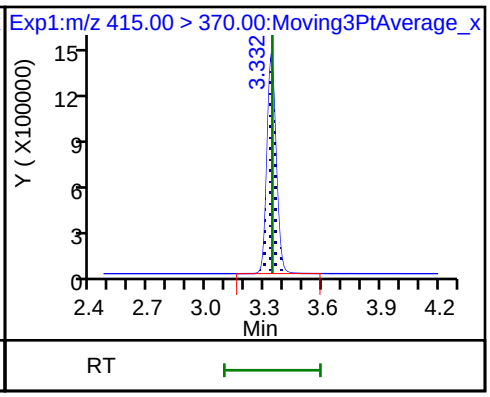
24 Perfluorooctanoic acid



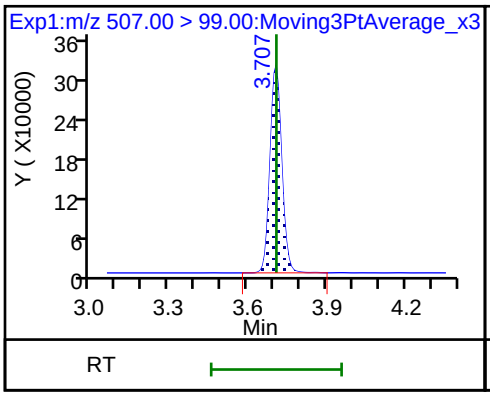
24 Perfluorooctanoic acid



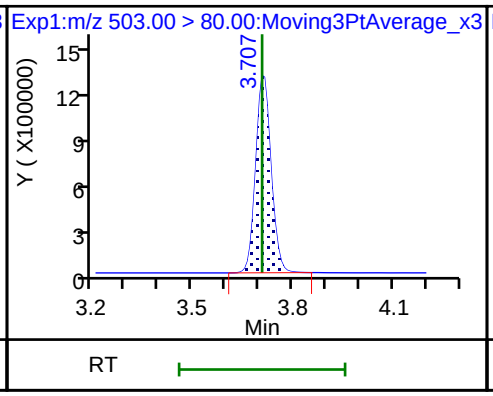
* 25 13C2 PFOA



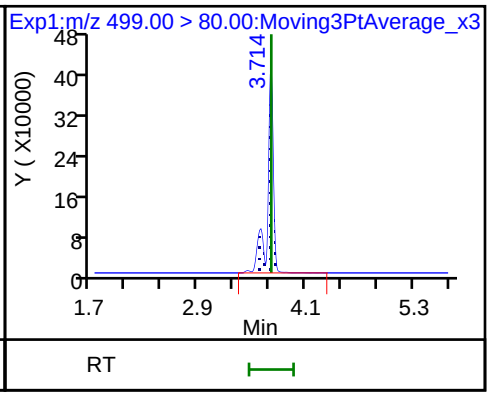
$ 27 13C8 PFOS



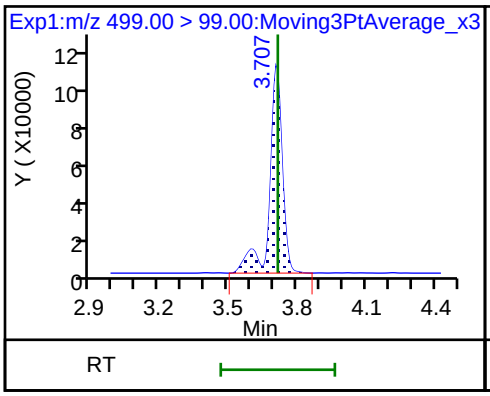
D 31 13C4 PFOS



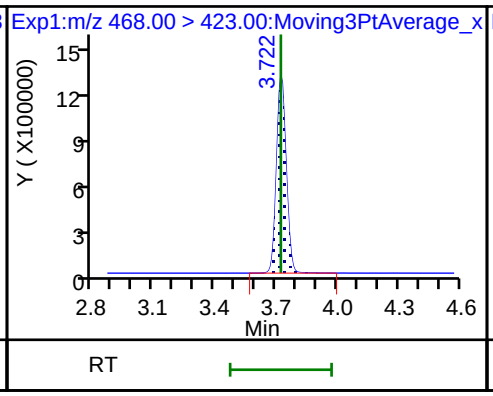
28 Perfluorooctanesulfonic acid



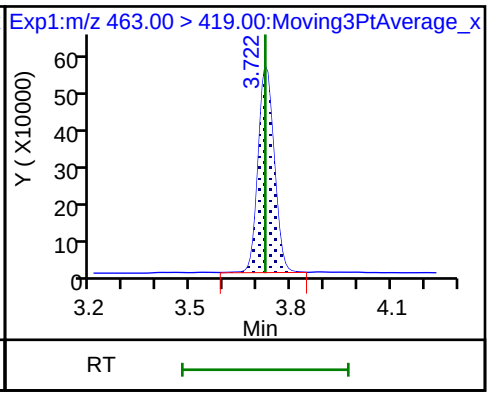
28 Perfluorooctanesulfonic acid



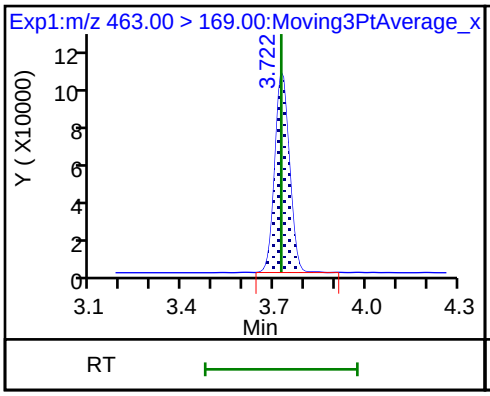
D 29 13C5 PFNA



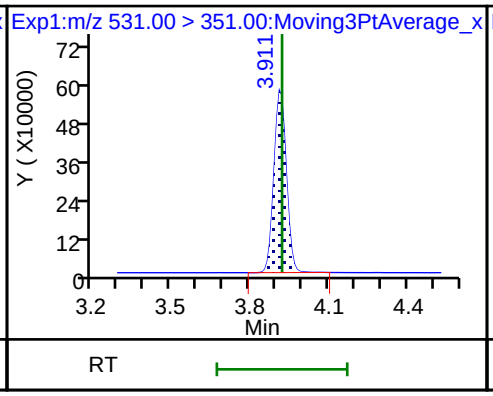
30 Perfluorononanoic acid



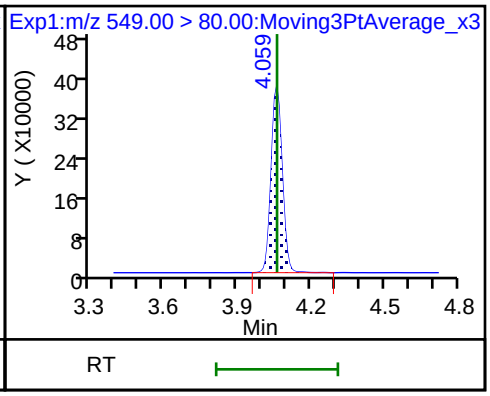
30 Perfluorononanoic acid



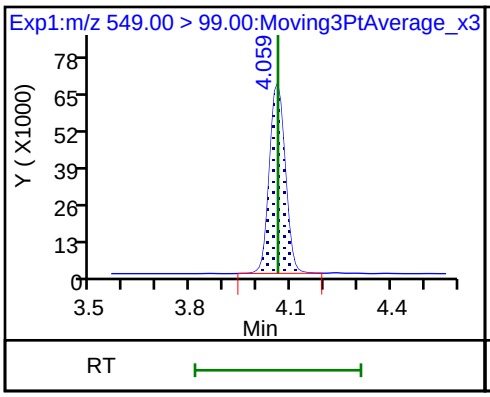
32 9-Chlorohexadecafluoro-3-oxanona



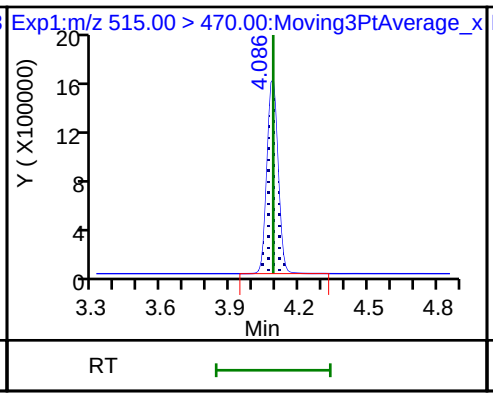
35 Perfluorononanesulfonic acid



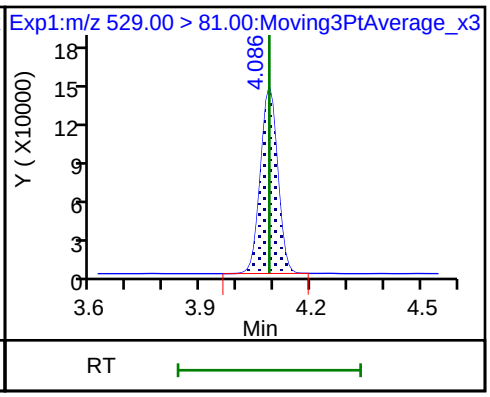
35 Perfluorononanesulfonic acid



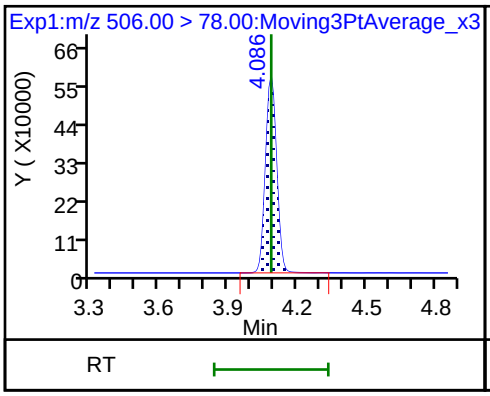
D 33 13C2 PFDA



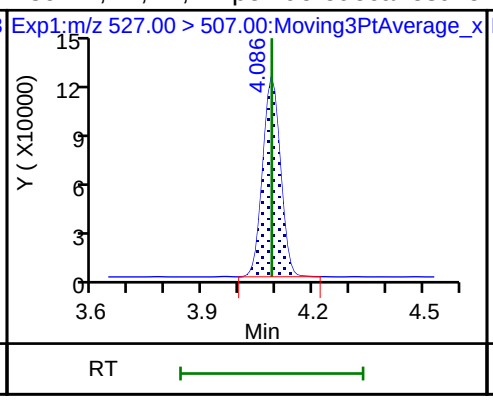
D 37 M2-8:2 FTS



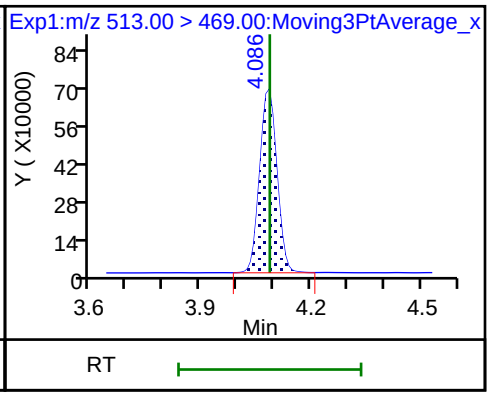
D 36 13C8 FOSA



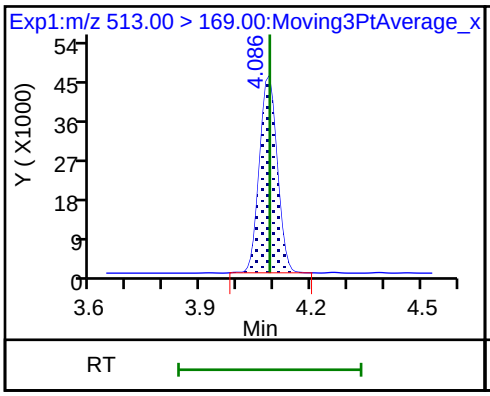
39 1H,1H,2H,2H-perfluorodecanesulfo



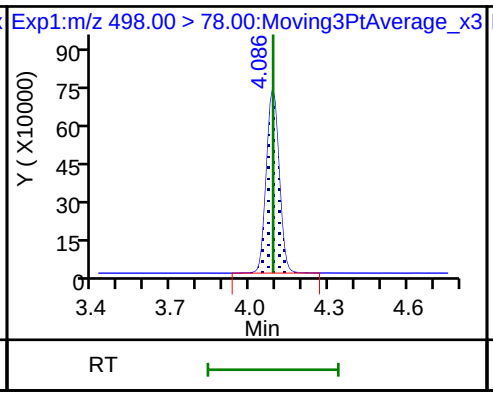
38 Perfluorodecanoic acid



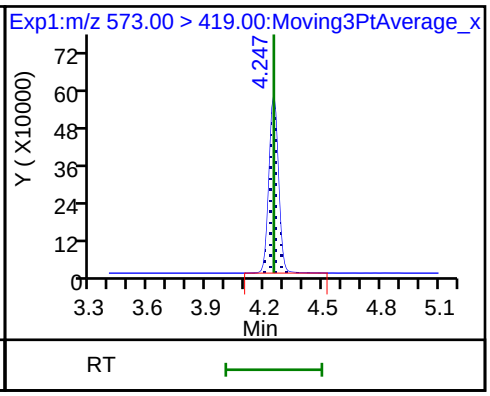
38 Perfluorodecanoic acid



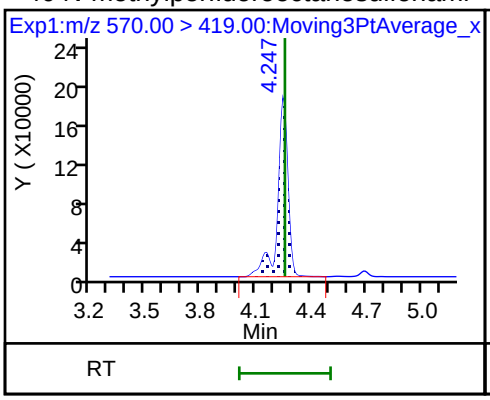
34 Perfluorooctanesulfonamide



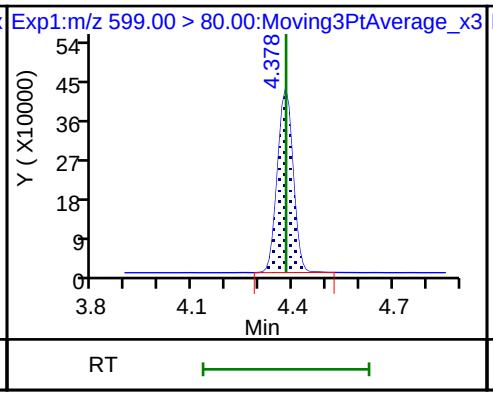
D 41 d3-NMeFOSAA



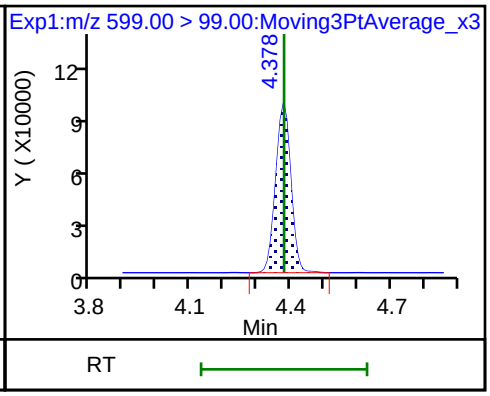
40 N-methylperfluorooctanesulfonami



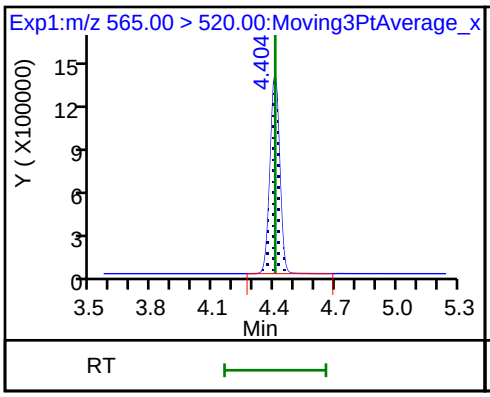
42 Perfluorodecanesulfonic acid



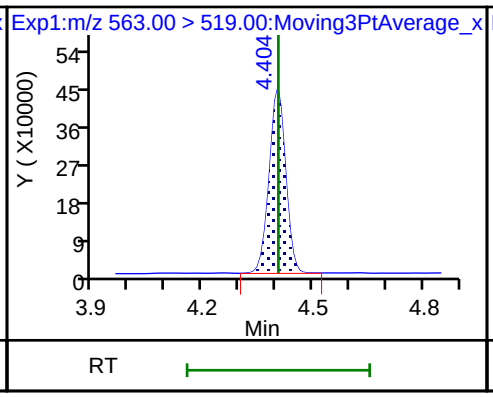
42 Perfluorodecanesulfonic acid



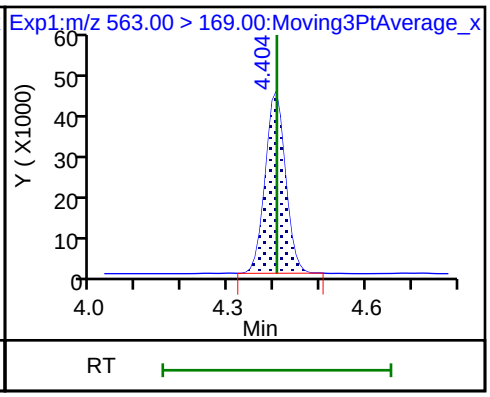
D 46 13C2 PFUnA



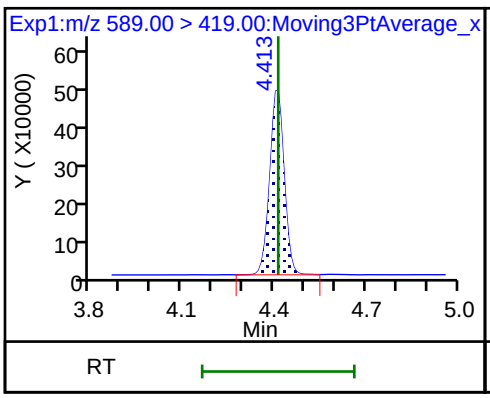
43 Perfluoroundecanoic acid



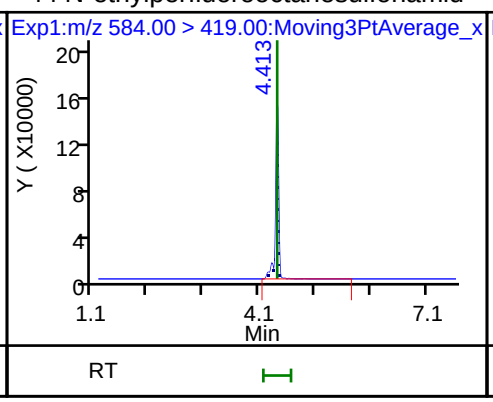
43 Perfluoroundecanoic acid



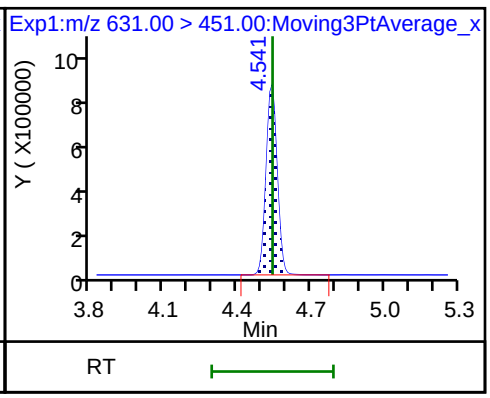
D 45 d5-NEtFOSAA



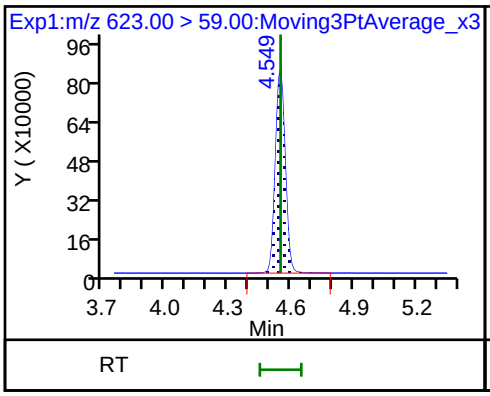
44 N-ethylperfluorooctanesulfonamid



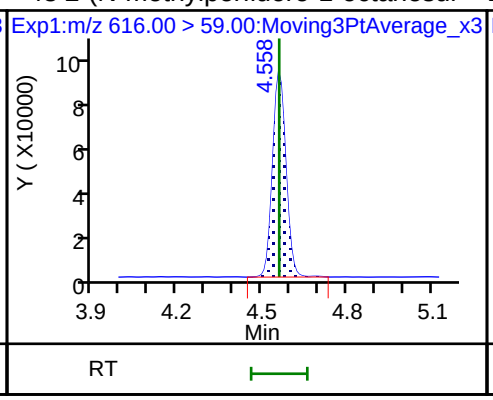
51 11-Chloroeicosafluoro-3-oxaundec



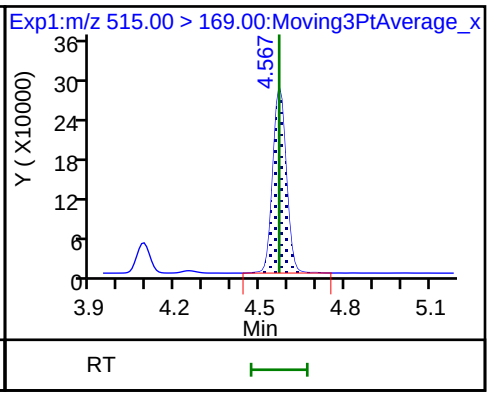
D 47 d7-N-MeFOSE-M



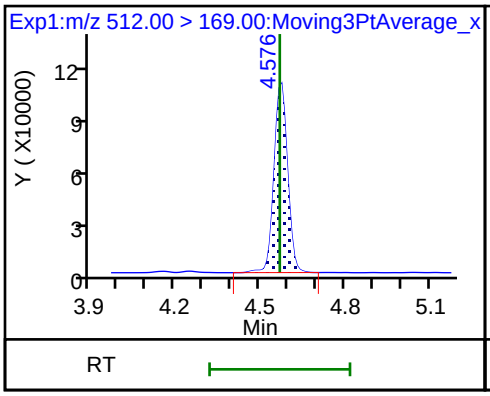
48 2-(N-methylperfluoro-1-octanesul



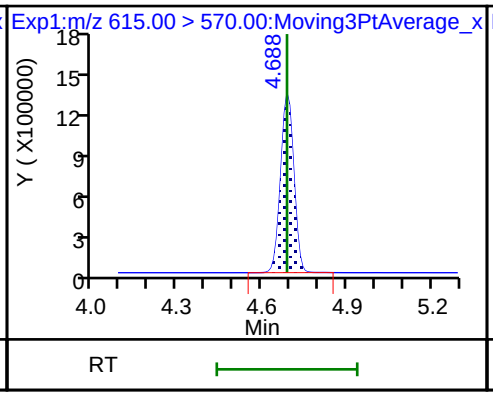
D 49 d-N-MeFOSA-M



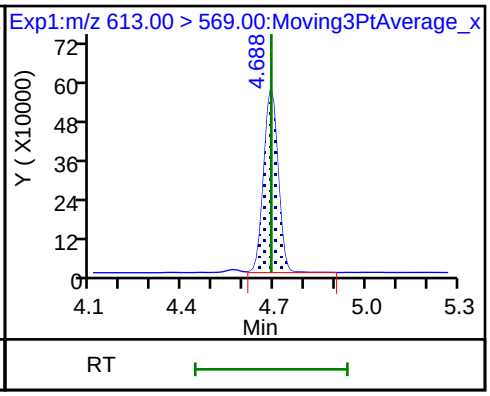
50 NMeFOSA



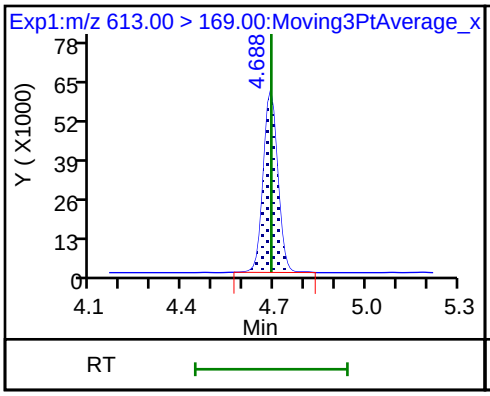
D 56 13C2 PFDoA



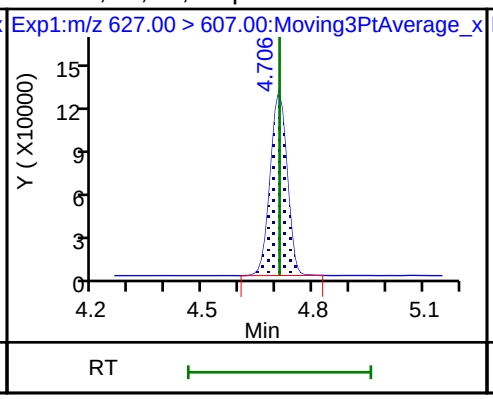
52 Perfluorododecanoic acid



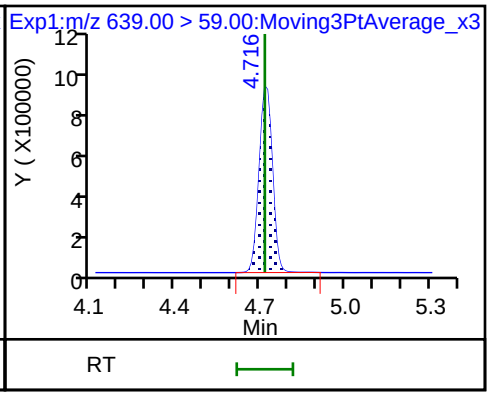
52 Perfluorododecanoic acid



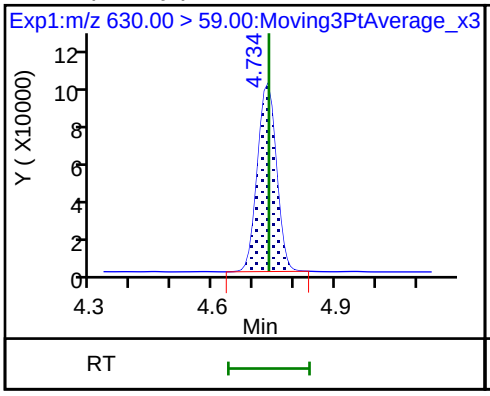
55 1H,1H,2H,2H-perfluorododecanesul



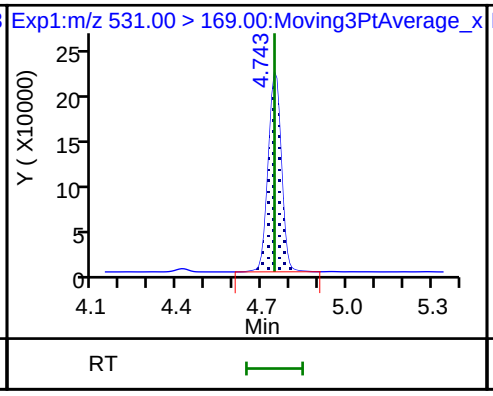
D 53 d9-N-EtFOSE-M



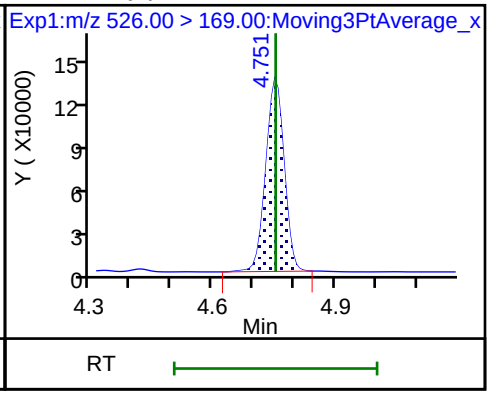
54 2-(N-ethylperfluoro-1-octanesulf



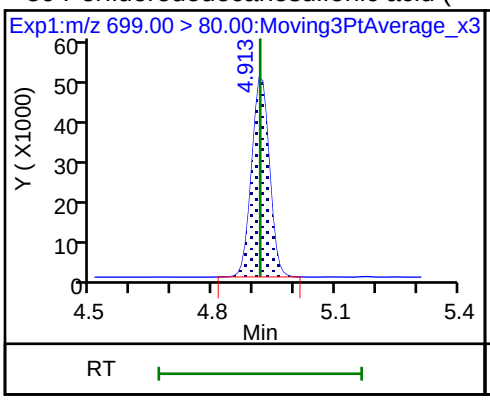
D 58 d-N-EtFOSA-M



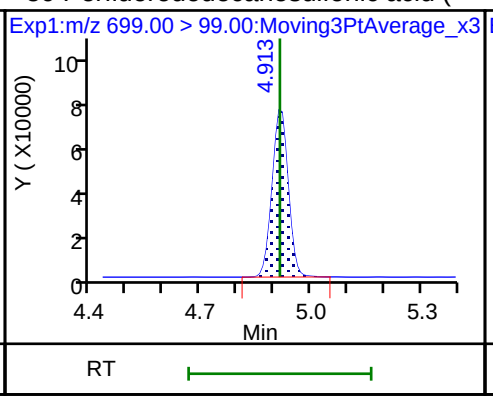
57 N-ethylperfluoro-1-octanesulfona



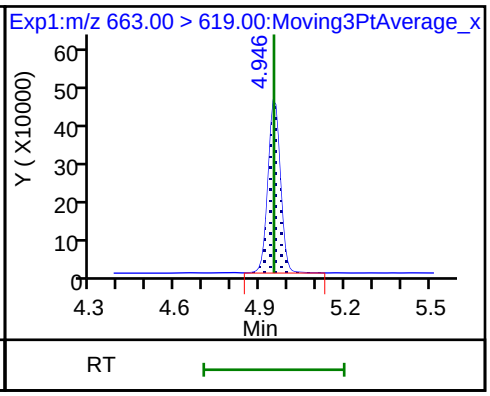
59 Perfluorododecanesulfonic acid (



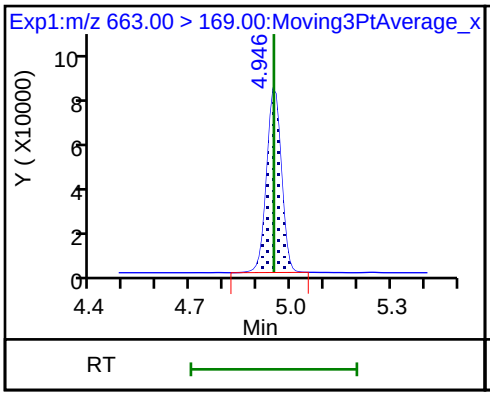
59 Perfluorododecanesulfonic acid (



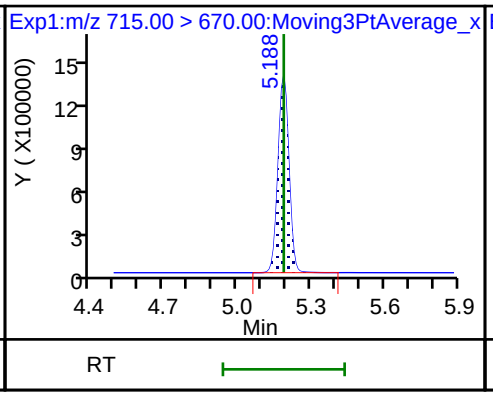
60 Perfluorotridecanoic acid



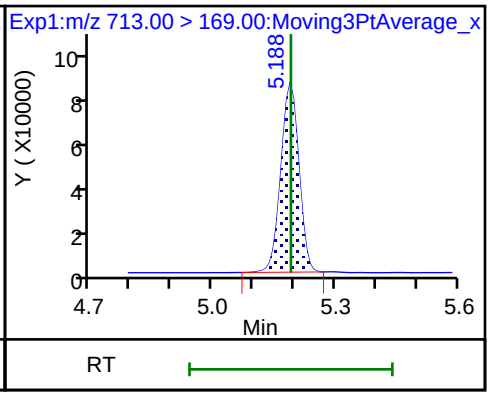
60 Perfluorotridecanoic acid



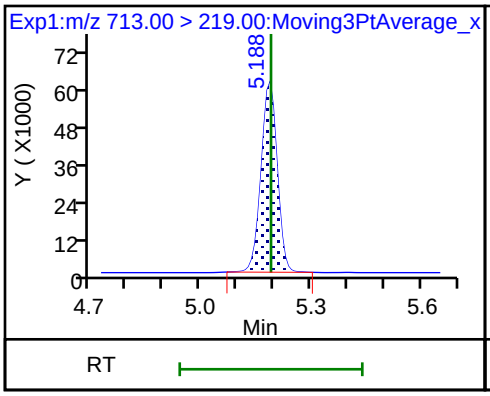
D 62 13C2 PFTeDA



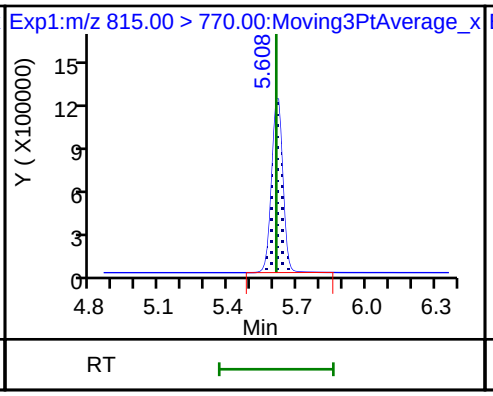
61 Perfluorotetradecanoic acid



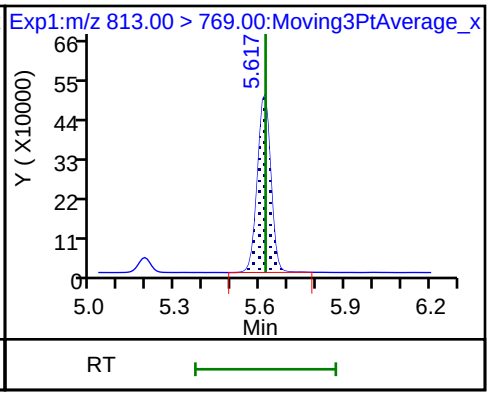
61 Perfluorotetradecanoic acid



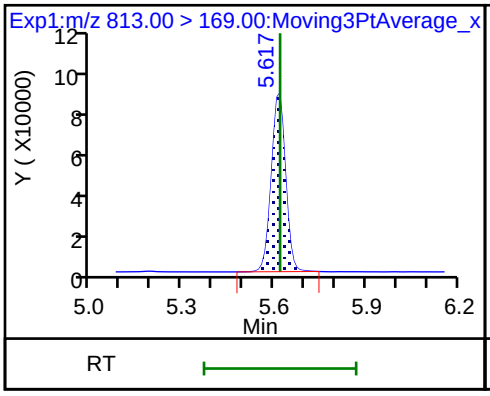
D 63 13C2 PFHxDA



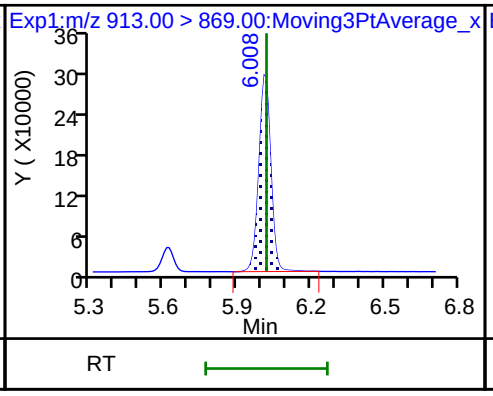
64 Perfluorohexadecanoic acid



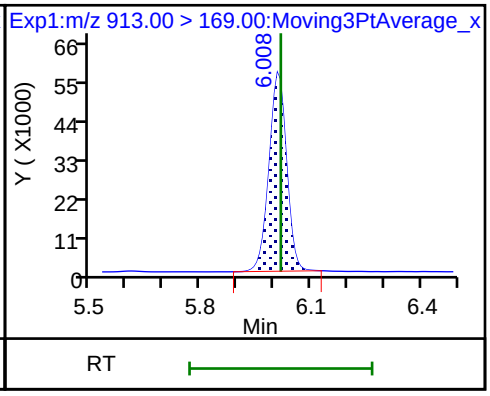
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

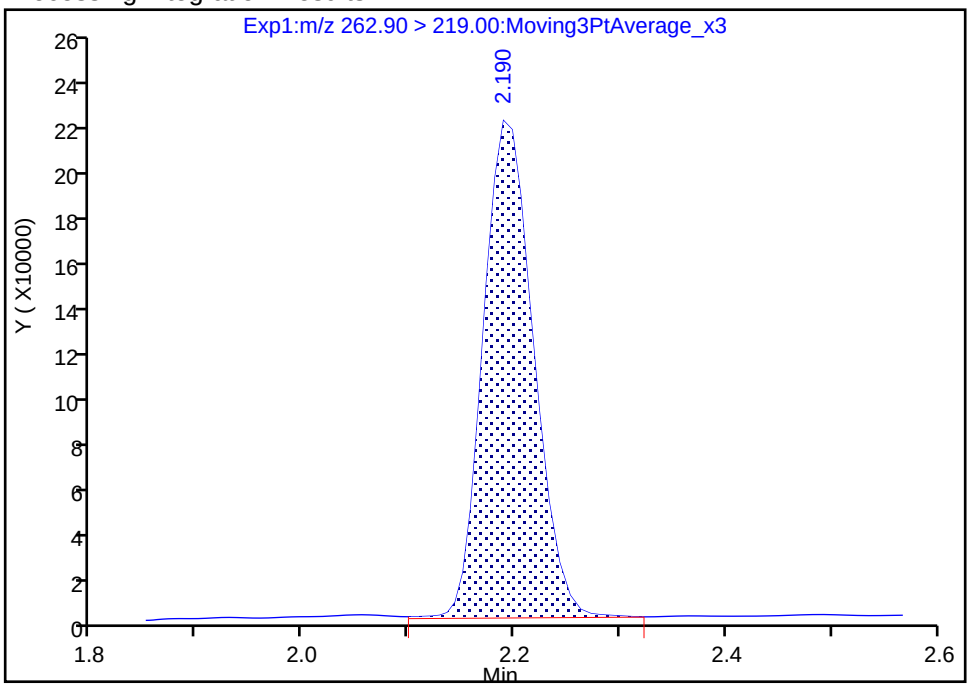
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_006.d				
Injection Date:	08-Jun-2020 08:28:23	Instrument ID:	A9		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	52	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

3 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

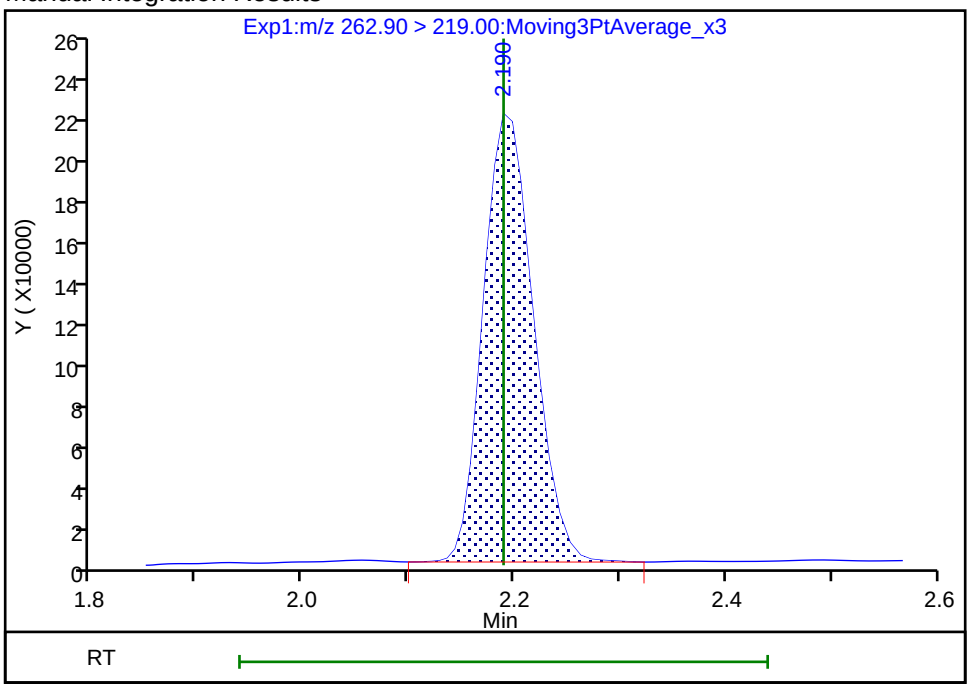
Processing Integration Results

RT: 2.19
Area: 723679
Amount: 0.958052
Amount Units: ng/ml



Manual Integration Results

RT: 2.19
Area: 717384
Amount: 0.949718
Amount Units: ng/ml



Reviewer: sorndeek, 09-Jun-2020 08:16:10

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

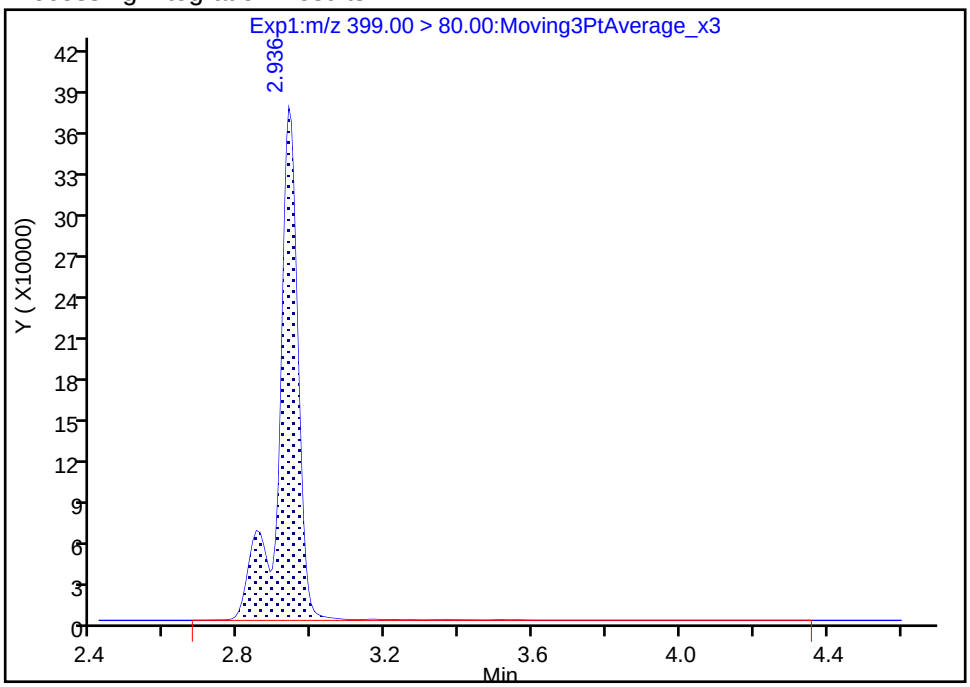
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_006.d				
Injection Date:	08-Jun-2020 08:28:23	Instrument ID:	A9		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	52	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

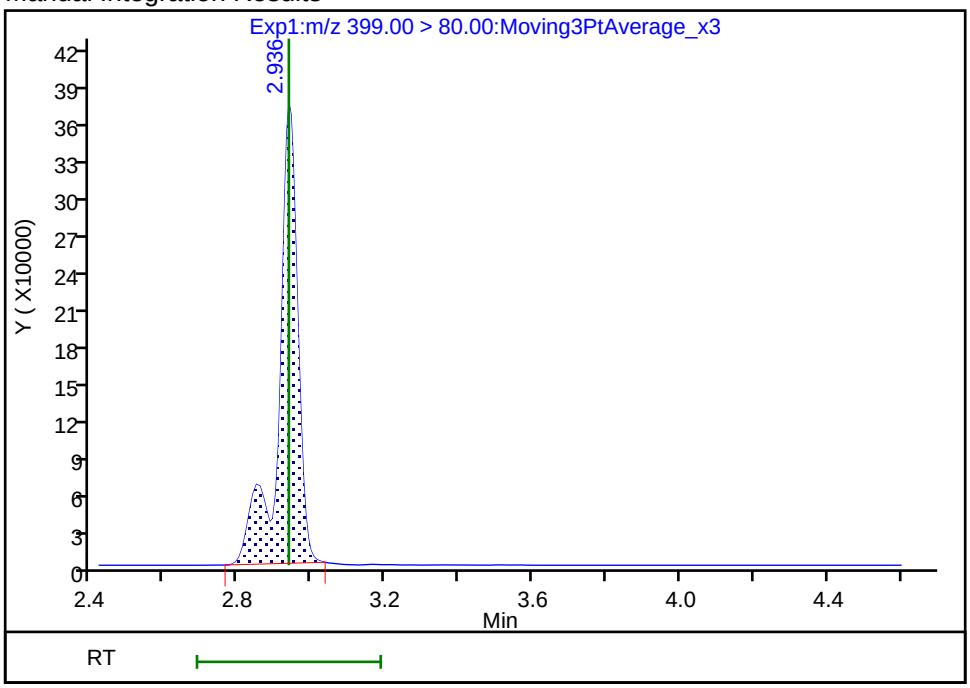
Processing Integration Results

RT: 2.94
Area: 1360821
Amount: 0.870710
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 1327088
Amount: 0.849126
Amount Units: ng/ml



Reviewer: contrerase, 08-Jun-2020 10:50:25

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

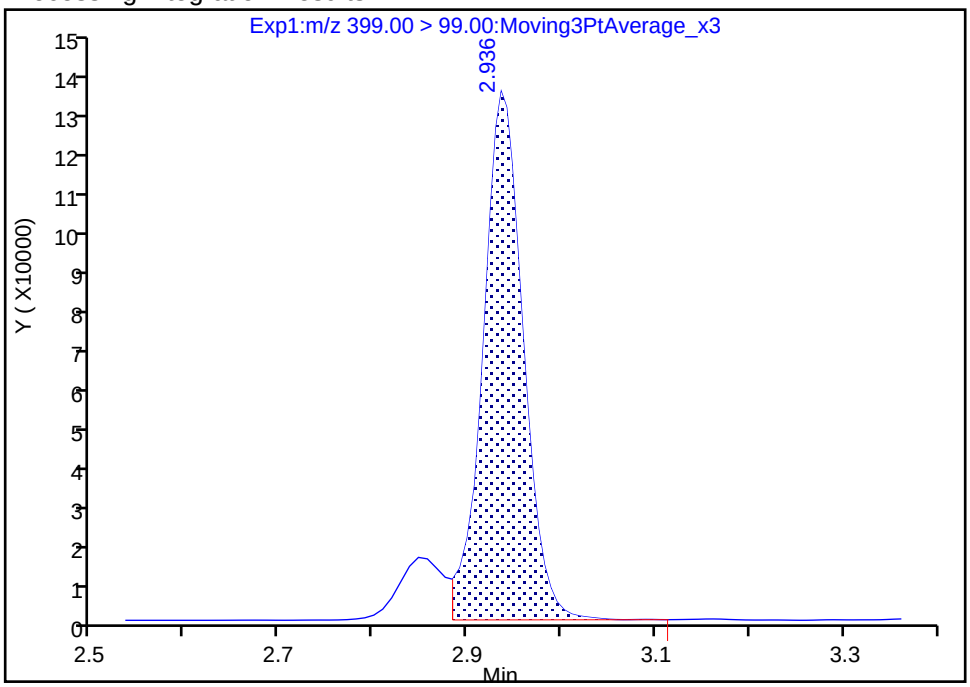
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97159.b\2020.06.08_A9_PFC.LLA_006.d				
Injection Date:	08-Jun-2020 08:28:23	Instrument ID:	A9		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	52	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

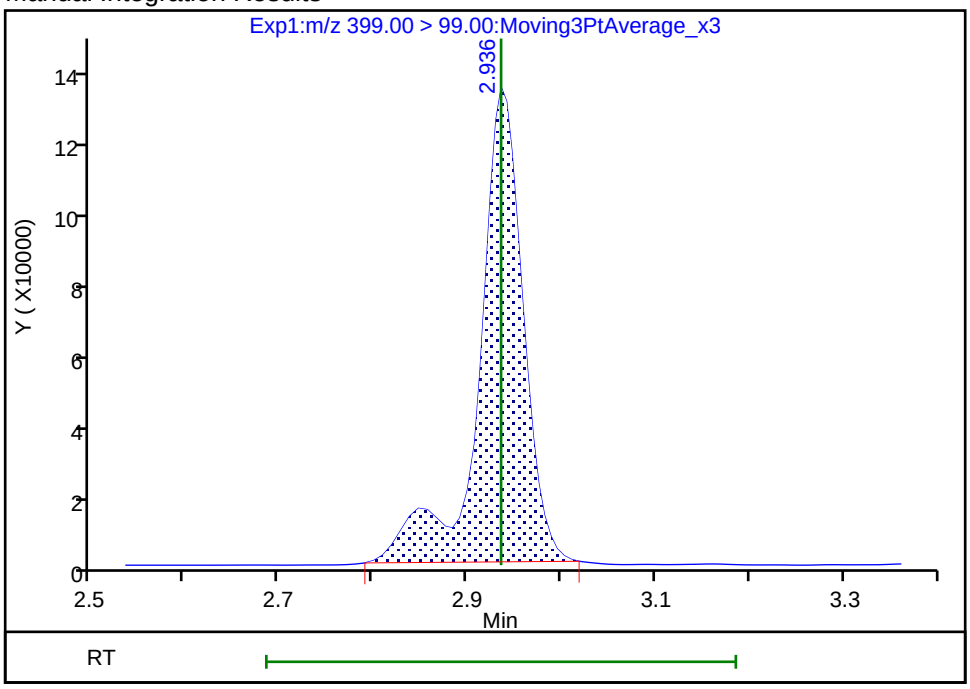
Processing Integration Results

RT: 2.94
Area: 394913
Amount: 0.870710
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 435471
Amount: 0.849126
Amount Units: ng/ml



Reviewer: contrerase, 08-Jun-2020 10:50:32
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-384478/1 Calibration Date: 06/08/2020 15:19

Instrument ID: A9 Calib Start Date: 06/02/2020 15:24

GC Column: Acquity ID: 2.10(mm) Calib End Date: 06/02/2020 16:30

Lab File ID: 2020.06.08_A9_PFC.B_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	0.4794	0.5261		1.10	1.00	9.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.044	1.024		0.981	1.00	-1.9	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.087	1.123		0.914	0.884	3.4	50.0
4:2 FTS	AveID	2.868	3.150		1.03	0.934	9.8	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.037	1.063		1.03	1.00	2.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	1.009	1.076		1.00	0.938	6.6	50.0
HFPO-DA (GenX)	AveID	0.5790	0.5720		0.988	1.00	-1.2	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.306	1.318		1.01	1.00	0.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.179	1.129		0.871	0.910	-4.3	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	1.906	2.061		1.02	0.942	8.2	50.0
6:2 FTS	AveID	2.227	2.257		0.961	0.948	1.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.058	1.142		1.03	0.952	8.0	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.257	1.238		0.985	1.00	-1.5	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.091	1.072		0.912	0.928	-1.7	40.0
Perfluorononanoic acid (PFNA)	AveID	1.089	1.143		1.05	1.00	5.0	40.0
F-53B Major	AveID	1.149	1.155		0.937	0.932	0.5	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6782	0.6922		0.980	0.960	2.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	1.001	1.092		1.09	1.00	9.1	40.0
8:2 FTS	AveID	2.202	2.134		0.928	0.958	-3.1	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	3.256	3.277		1.01	1.00	0.6	40.0
NMeFOSAA	AveID	0.9274	0.8918		0.962	1.00	-3.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8058	0.8975		1.07	0.964	11.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7722	0.7885		1.02	1.00	2.1	40.0
NEtFOSAA	AveID	0.8961	0.8993		1.00	1.00	0.4	40.0
F-53B Minor	AveID	1.563	1.698		1.02	0.942	8.6	50.0
NMeFOSE	AveID	1.404	1.352		0.963	1.00	-3.7	40.0
NMeFOSA	AveID	0.8825	0.9940		1.13	1.00	12.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.048	1.184		1.13	1.00	13.0	40.0
10:2 FTS	AveID	1.964	2.113		1.04	0.964	7.6	50.0
NEtFOSE	AveID	1.470	1.493		1.02	1.00	1.5	40.0
NEtFOSA	AveID	1.280	1.398		1.09	1.00	9.2	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0899	0.0959		1.03	0.968	6.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-384478/1 Calibration Date: 06/08/2020 15:19

Instrument ID: A9 Calib Start Date: 06/02/2020 15:24

GC Column: Acquity ID: 2.10(mm) Calib End Date: 06/02/2020 16:30

Lab File ID: 2020.06.08_A9_PFC.B_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7140	0.8523		1.19	1.00	19.4	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1699	0.1700		1.00	1.00	0.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.996		1.10	1.00	9.9	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5681	0.6874		1.21	1.00	21.0	50.0
13C4 PFBA	Ave	1.205	1.080		2.24	2.50	-10.4	50.0
13C5 PFPeA	Ave	0.4352	0.3929		2.26	2.50	-9.7	50.0
13C3 PFBS	Ave	0.5598	0.5350		2.22	2.33	-4.4	50.0
M2-4:2 FTS	Ave	0.1177	0.0888		1.76	2.34	-24.5	50.0
13C2 PFHxA	Ave	0.8637	0.8216		2.38	2.50	-4.9	50.0
13C3 HFPO-DA	Ave	0.5521	0.5208		2.36	2.50	-5.7	50.0
13C4 PFHpA	Ave	0.7783	0.7702		2.47	2.50	-1.0	50.0
18O2 PFHxS	Ave	0.7377	0.7569		2.43	2.37	2.6	50.0
M2-6:2 FTS	Ave	0.0988	0.0905		2.18	2.38	-8.3	50.0
13C4 PFOA	Ave	0.9544	0.9583		2.51	2.50	0.4	50.0
13C4 PFOS	Ave	0.9416	0.9550		2.42	2.39	1.4	50.0
13C5 PFNA	Ave	0.9381	0.9270		2.47	2.50	-1.2	50.0
13C2 PFDA	Ave	1.098	1.056		2.41	2.50	-3.8	50.0
M2-8:2 FTS	Ave	0.1176	0.1107		2.25	2.40	-5.9	50.0
13C8 FOSA	Ave	0.3734	0.3917		2.62	2.50	4.9	50.0
d3-NMeFOSAA	Ave	0.4372	0.4641		2.65	2.50	6.2	50.0
13C2 PFUnA	Ave	0.9597	0.9764		2.54	2.50	1.7	50.0
d5-NEtFOSAA	Ave	0.3319	0.3467		2.61	2.50	4.4	50.0
d7-N-MeFOSE-M	Ave	0.1093	0.1219		13.9	12.5	11.5	50.0
d-N-MeFOSA-M	Ave	0.2211	0.2102		2.38	2.50	-4.9	50.0
13C2 PFDoA	Ave	0.9094	0.9180		2.52	2.50	1.0	50.0
d9-N-EtFOSE-M	Ave	0.1102	0.1191		13.5	12.5	8.1	50.0
d-N-EtFOSA-M	Ave	0.1665	0.1595		2.40	2.50	-4.2	50.0
13C2 PFTeDA	Ave	0.8835	0.9298		2.63	2.50	5.2	50.0
13C2 PFHxDA	Ave	0.8563	1.020		2.98	2.50	19.1	50.0
13C8 PFOA	Ave	0.9349	0.9476		2.48	2.45	1.4	50.0
13C8 PFOS	Ave	0.2183	0.2207		2.42	2.39	1.1	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 08-Jun-2020 15:19:41 ALS Bottle#: 3 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200608-97178.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 09-Jun-2020 08:03:52 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1037

First Level Reviewer: mongkols Date: 09-Jun-2020 08:03:52
Ratio Calibration: Average of Initial Calibration

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	1.887	1.887	0.0	0.566	5431940	2.24		89.6	9717	
2 Perfluorobutanoic acid										
212.90 > 169.00	1.887	1.887	0.0	1.000	1143086	1.10		110	1158	
D 4 13C5 PFPeA										
267.90 > 223.00	2.190	2.190	0.0	0.657	1976697	2.26		90.3	6008	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.190	2.190	0.0	1.000	809848	0.9811		98.1	134	
D 6 13C3 PFBS										
301.90 > 80.00	2.223	2.223	0.0	0.667	2503411	2.22		95.6	7536	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.223	2.223	0.0	1.000	1069314	0.9140	Target=2.39	103	764	
298.90 > 99.00	2.223	2.223	0.0	1.000	435943		2.45(1.20-3.59)		644	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.503	2.503	0.0	0.751	417281	1.76		75.5	2291	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.503	2.503	0.0	1.000	525795	1.03		110	4476	
D 10 13C2 PFHxA										
315.00 > 270.00	2.546	2.546	0.0	0.764	4133750	2.38		95.1	6339	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.546	2.546	0.0	1.000	1758411	1.03	Target=15.64	103	666	
313.00 > 119.00	2.546	2.546	0.0	1.000	114569		15.35(7.82-23.46)		425	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.557	2.557	0.0	1.150	1086477	1.00	Target=1.75	107	2903	
349.00 > 99.00	2.557	2.557	0.0	1.150	595988		1.82(0.88-2.63)		1540	
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.660	2.660	0.0	0.798	2620216	2.36		94.3	5046	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.660	2.660	0.0	1.000	599526	0.9880		98.8	2323	
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.936	2.936	0.0	1.002	2043113	1.01	Target=4.39	101	551	
363.00 > 169.00	2.936	2.936	0.0	1.002	487813		4.19(2.20-6.59)		1086	
D 15 13C4 PFHpA										
367.00 > 322.00	2.930	2.930	0.0	0.879	3874794	2.47		99.0	6265	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.936	2.936	0.0	1.000	1564285	0.8710	Target=3.04	95.7	3470	
399.00 > 99.00	2.936	2.936	0.0	1.000	512736		3.05(1.52-4.56)		1619	M
D 17 18O2 PFHxS										
403.00 > 84.00	2.936	2.936	0.0	0.881	3602421	2.43		103	3729	
19 DONA										
377.00 > 251.00	2.982	2.982	0.0	0.804	3731930	1.02	Target=2.17	108	4966	
377.00 > 85.00	2.982	2.982	0.0	0.804	1725657		2.16(1.09-3.26)		5106	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.319	3.319	0.0	0.996	432648	2.18		91.7	2366	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.319	3.319	0.0	1.000	389841	0.9610		101	1305	
$ 21 13C8 PFOA										
421.00 > 376.00	3.326	3.326	0.0	0.998	4667392	2.48		101	11324	
D 26 13C4 PFOA										
417.00 > 372.00	3.333	3.333	0.0	1.000	4821296	2.51		100	6745	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.333	3.333	0.0	0.899	2088932	1.03	Target=3.82	108	3917	
449.00 > 99.00	3.333	3.333	0.0	0.899	528698		3.95(1.91-5.72)		1669	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.333	3.333	0.0	1.000	2388027	0.9847	Target=2.82	98.5	240	
413.00 > 169.00	3.333	3.333	0.0	1.000	811055		2.94(1.41-4.23)		1592	
* 25 13C2 PFOA										
415.00 > 370.00	3.333	3.333	0.0		5031184	2.50			8051	
$ 27 13C8 PFOS										
507.00 > 99.00	3.708	3.708	0.0	1.113	1061388	2.42		101	3035	
D 31 13C4 PFOS										
503.00 > 80.00	3.708	3.708	0.0	1.113	4593567	2.42		101	6018	
28 Perfluorooctanesulfonic acid										M
499.00 > 80.00	3.708	3.708	0.0	1.000	1912677	0.9125	Target=4.25	98.3	1857	
499.00 > 99.00	3.708	3.708	0.0	1.000	453096		4.22(2.13-6.38)		1907	M
30 Perfluorononanoic acid										
463.00 > 419.00	3.723	3.723	0.0	1.000	2132414	1.05	Target=5.46	105	430	
463.00 > 169.00	3.723	3.723	0.0	1.000	368592		5.79(2.73-8.19)		1705	
D 29 13C5 PFNA										
468.00 > 423.00	3.723	3.723	0.0	1.117	4664074	2.47		98.8	6976	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.913	3.913	0.0	1.055	2068929	0.9368		101	3107	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.053	4.053	0.0	1.093	1277112	0.9798	Target=4.97	102	3787	
549.00 > 99.00	4.061	4.053	0.008	1.095	277167		4.61(2.48-7.45)		1035	
D 33 13C2 PFDA										
515.00 > 470.00	4.079	4.079	0.0	1.224	5314832	2.41		96.2	8684	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.079	4.079	0.0	1.000	2322164	1.09	Target=14.66	109	862	
513.00 > 169.00	4.079	4.079	0.0	1.000	166229		13.97(7.33-21.99)		204	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.088	4.088	0.0	1.002	455386	0.9281		96.9	1610	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.079	4.079	0.0	1.224	533591	2.25		94.1	3329	
D 36 13C8 FOSA										
506.00 > 78.00	4.088	4.088	0.0	1.227	1970557	2.62		105	3274	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.088	4.088	0.0	1.000	2582915	1.01		101	5749	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.249	4.249	0.0	1.275	2335139	2.65		106	3177	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.249	4.249	0.0	1.000	832994	0.9616		96.2	202	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.380	4.380	0.0	1.181	1662935	1.07	Target=4.49	111	4979	
599.00 > 99.00	4.380	4.380	0.0	1.181	339060		4.90(2.25-6.74)		1599	
D 46 13C2 PFUnA										
565.00 > 520.00	4.406	4.406	0.0	1.322	4912272	2.54		102	9449	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.406	4.406	0.0	1.000	1549328	1.02	Target=10.82	102	419	
563.00 > 169.00	4.406	4.406	0.0	1.000	154582		10.02(5.41-16.23)		912	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.406	4.406	0.0	1.322	1744146	2.61		104	2035	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.414	4.414	0.0	1.002	627411	1.00		100	1868	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.534	4.534	0.0	1.223	3074813	1.02		109	5128	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.543	4.543	0.0	1.363	3067481	13.9		112	5446	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.561	4.561	0.0	1.004	331737	0.9631		96.3	1222	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.570	4.570	0.0	1.371	1057374	2.38		95.1	258	
50 NMeFOSA										
512.00 > 169.00	4.570	4.570	0.0	1.000	420394	1.13		113	859	
52 Perfluorododecanoic acid										
613.00 > 569.00	4.690	4.690	0.0	1.000	2188075	1.13	Target=8.20	113	457	
613.00 > 169.00	4.690	4.690	0.0	1.000	254610		8.59(4.10-12.30)		1703	
D 56 13C2 PFDoA										
615.00 > 570.00	4.690	4.690	0.0	1.407	4618849	2.52		101	6267	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.709	4.709	0.0	1.154	453833	1.04		108	2627	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.719	4.719	0.0	1.416	2995452	13.5		108	6471	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.737	4.737	0.0	1.004	357710	1.02		102	1331	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.746	4.746	0.0	1.424	802674	2.40		95.8	1208	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.754	4.754	0.0	1.002	448724	1.09		109	807	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.916	4.916	0.0	1.326	178493	1.03	Target=0.67	107	1465	
699.00 > 99.00	4.916	4.916	0.0	1.326	275395		0.65(0.33-1.00)		2569	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.949	4.949	0.0	1.055	1574628	1.19	Target=5.48	119	813	
663.00 > 169.00	4.949	4.949	0.0	1.055	266784		5.90(2.74-8.23)		1686	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.183	5.183	0.0	1.555	4677895	2.63		105	4803	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.183	5.183	0.0	1.000	318081	1.00	Target=1.49	100	2632	
713.00 > 219.00	5.183	5.183	0.0	1.000	224267		1.42(0.75-2.24)		2164	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.613	5.613	0.0	1.684	5129727	2.98		119	8447	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.613	5.613	0.0	1.000	2044637	1.10	Target=5.24	110	275	
813.00 > 169.00	5.613	5.613	0.0	1.000	357164		5.72(2.62-7.87)		2345	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.012	6.012	0.0	1.071	1410520	1.21	Target=4.86	121	267	
913.00 > 169.00	6.004	6.012	-0.008	1.070	258206		5.46(2.43-7.29)		1059	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 09-Jun-2020 08:03:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_006.d

Injection Date: 08-Jun-2020 15:19:41 Instrument ID: A9

Lims ID: CCV L4

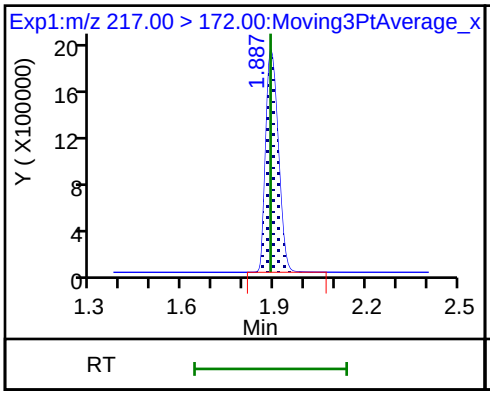
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 3 Worklist Smp#: 1

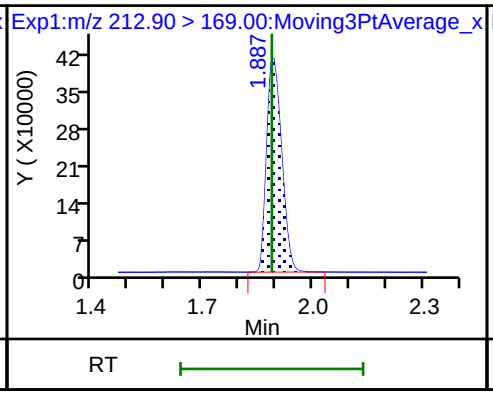
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

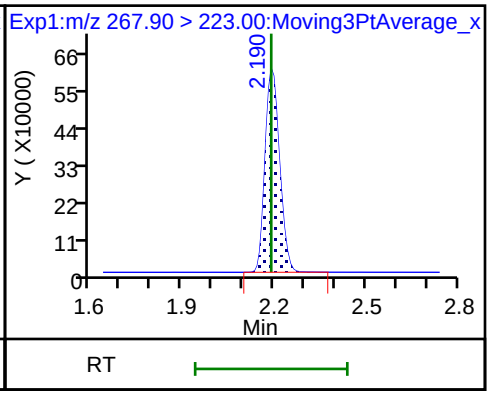
D 1 13C4 PFBA



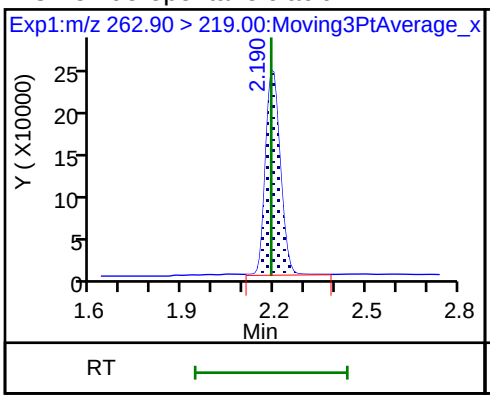
2 Perfluorobutanoic acid



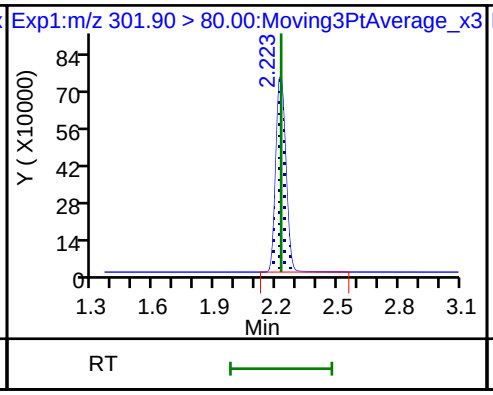
D 4 13C5 PFPeA



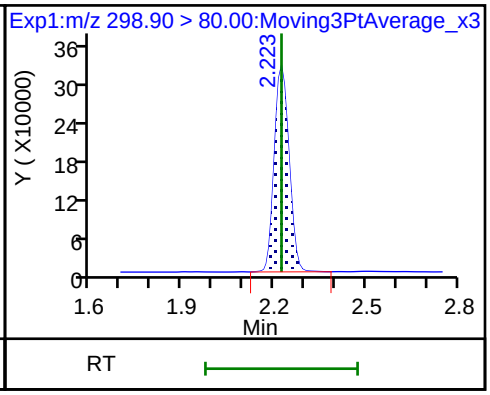
3 Perfluoropentanoic acid



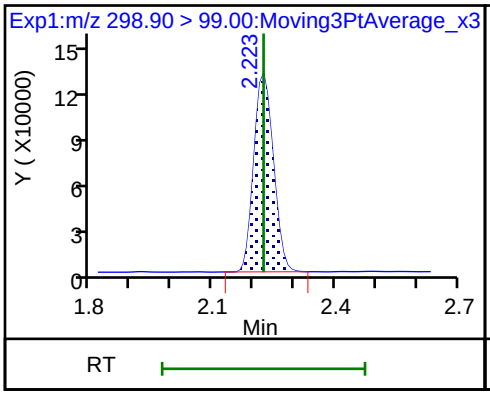
D 6 13C3 PFBS



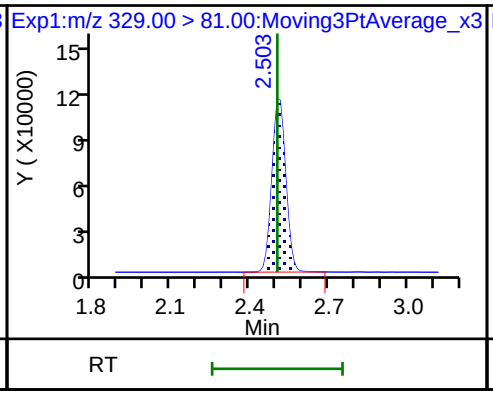
5 Perfluorobutanesulfonic acid



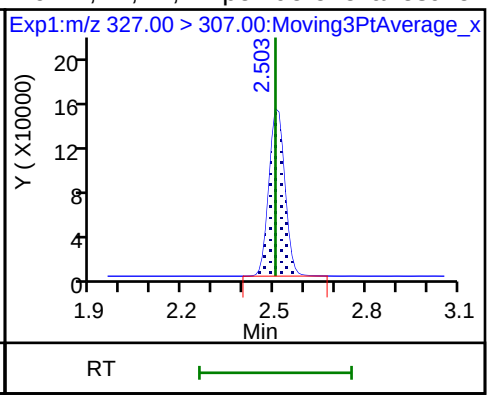
5 Perfluorobutanesulfonic acid



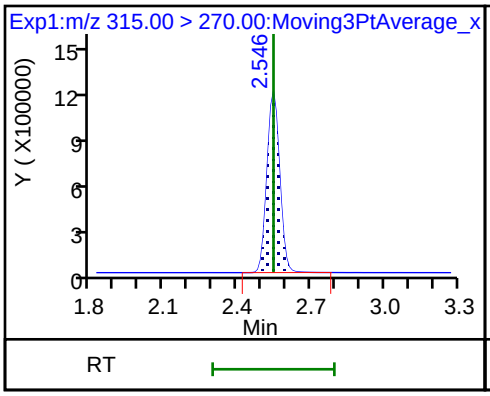
D 8 M2-4:2 FTS



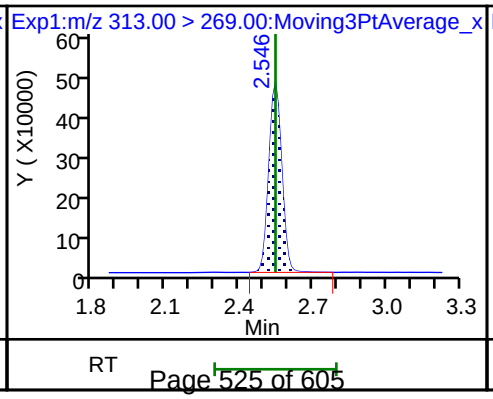
9 1H,1H,2H,2H-perfluorohexanesulfo



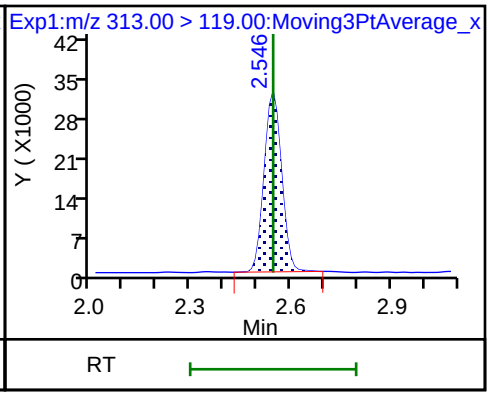
D 10 13C2 PFHxA



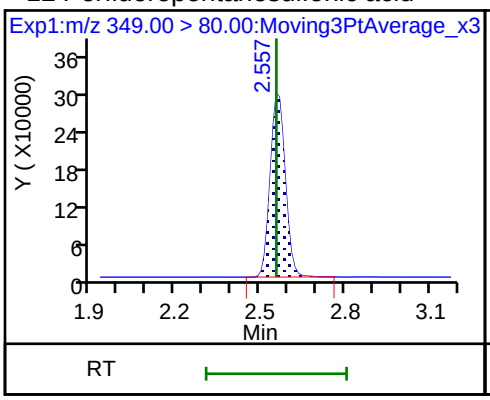
11 Perfluorohexanoic acid



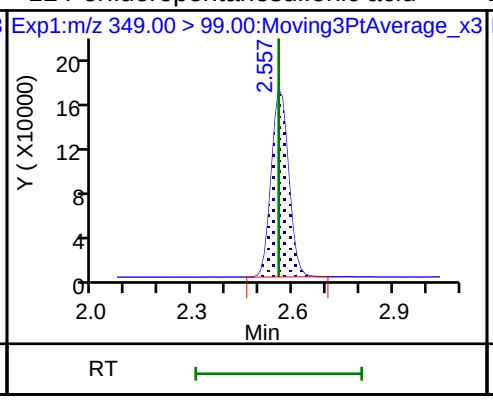
11 Perfluorohexanoic acid



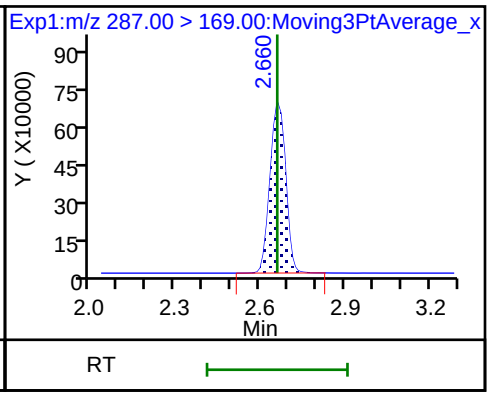
12 Perfluoropentanesulfonic acid



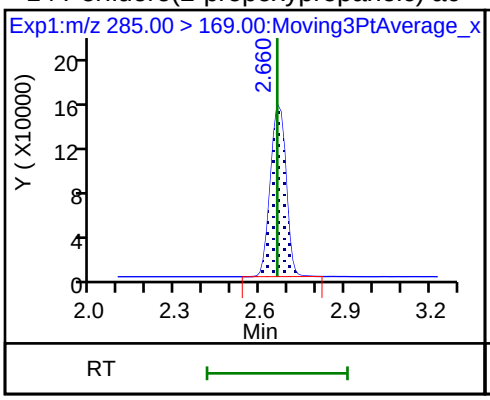
12 Perfluoropentanesulfonic acid



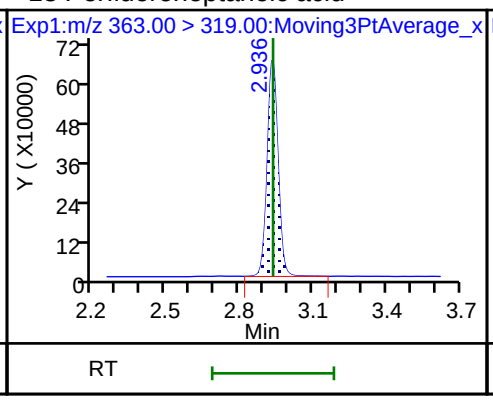
D 13 13C3 HFPO-DA



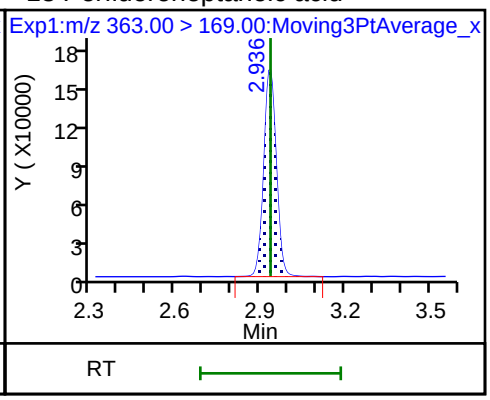
14 Perfluoro(2-propoxypropanoic) ac



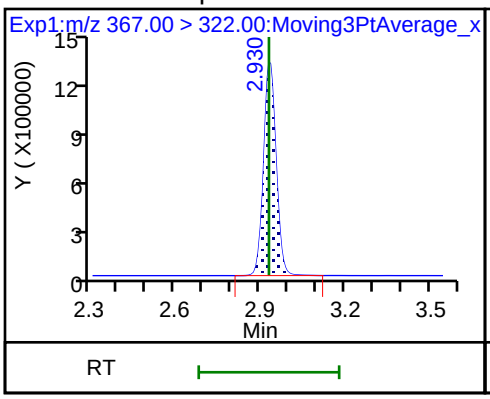
18 Perfluoroheptanoic acid



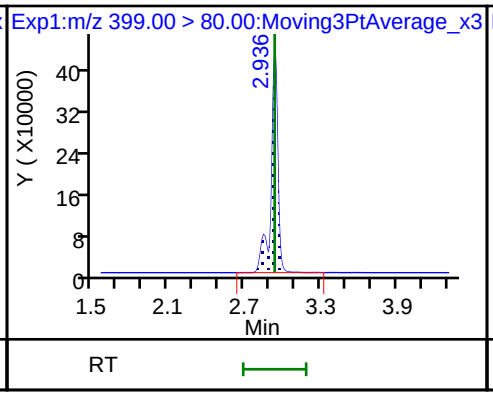
18 Perfluoroheptanoic acid



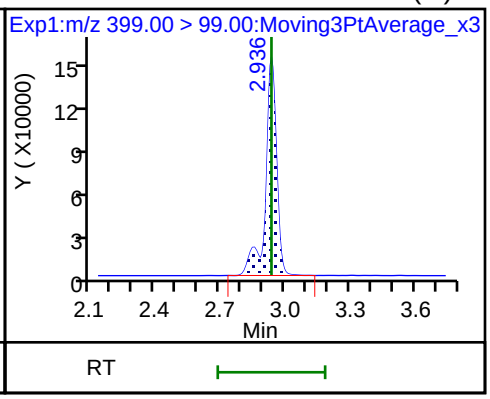
D 15 13C4 PFHpA



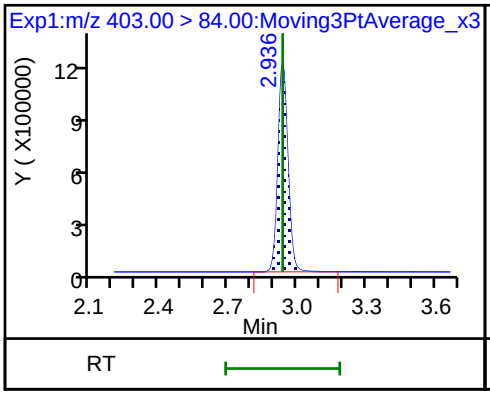
16 Perfluorohexanesulfonic acid



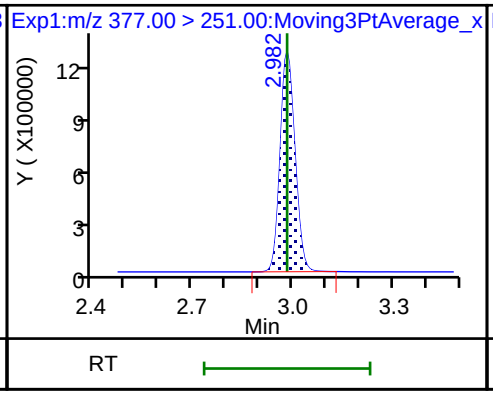
16 Perfluorohexanesulfonic acid (M)



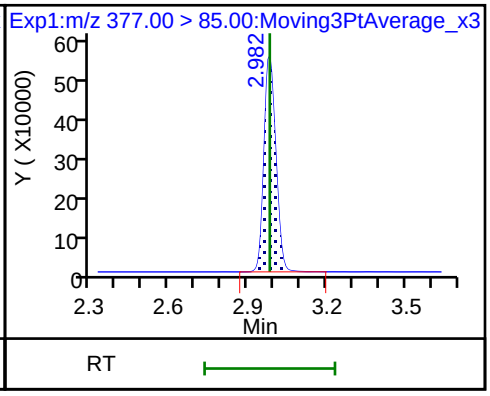
D 17 18O2 PFHxS



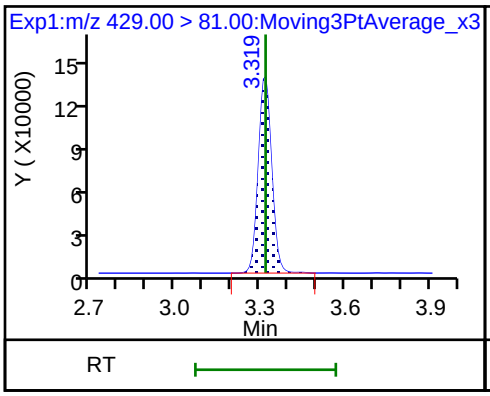
19 DONA



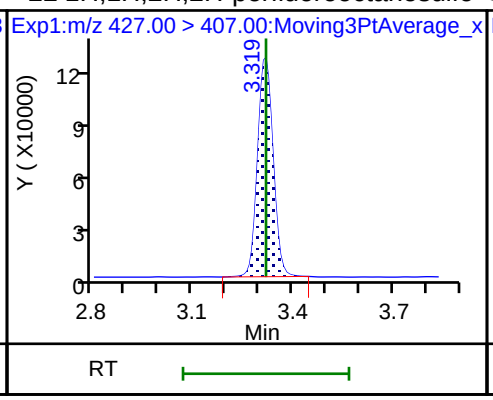
19 DONA



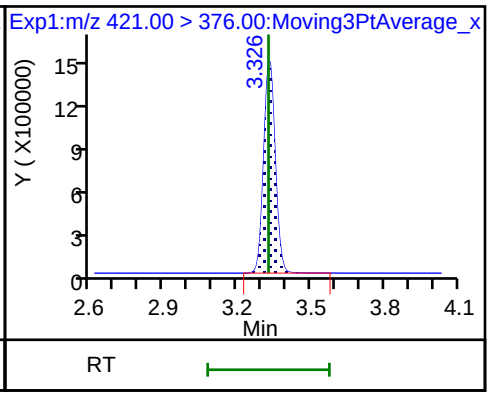
D 20 M2-6:2 FTS



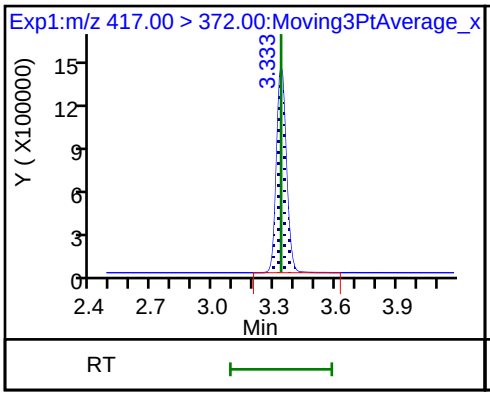
22 1H,1H,2H,2H-perfluorooctanesulfo



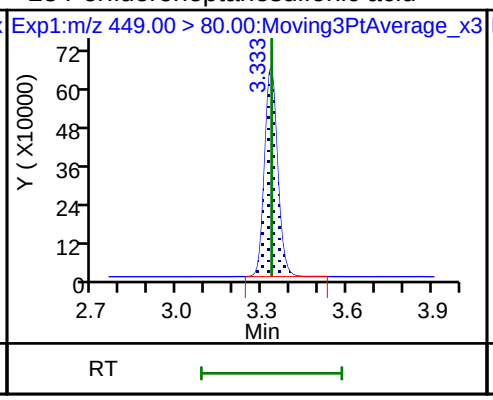
$ 21 13C8 PFOA



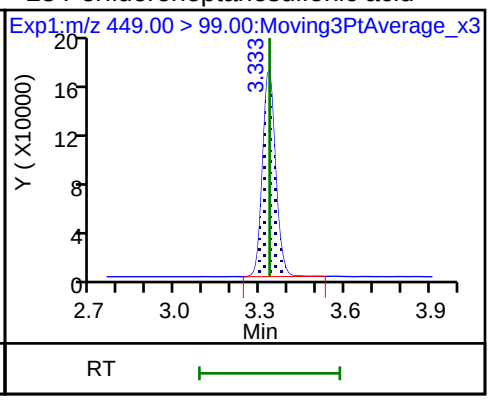
D 26 13C4 PFOA



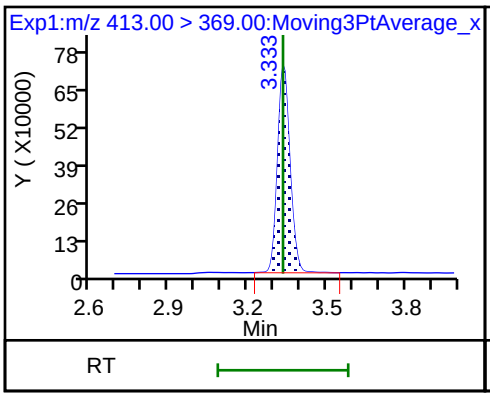
23 Perfluoroheptanesulfonic acid



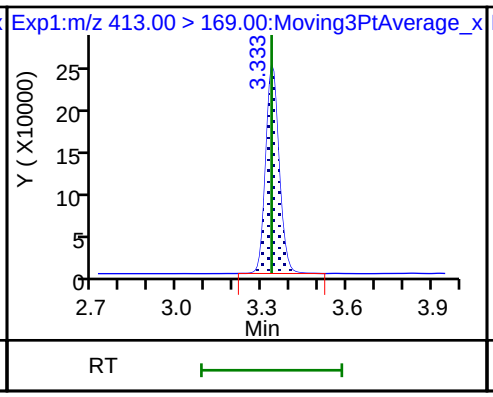
23 Perfluoroheptanesulfonic acid



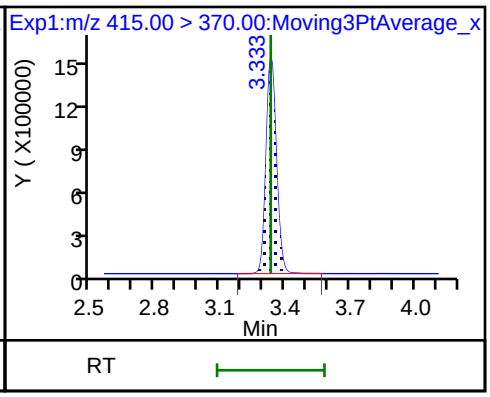
24 Perfluorooctanoic acid



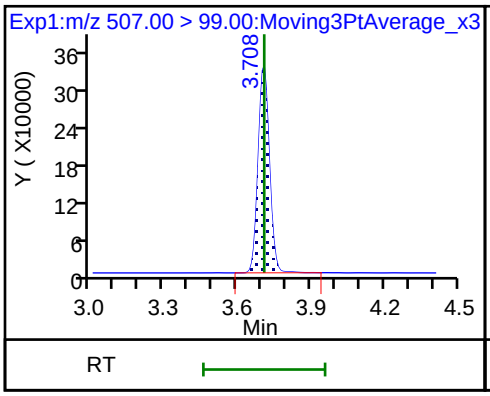
24 Perfluorooctanoic acid



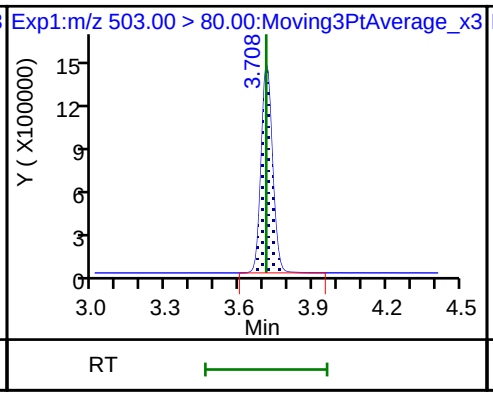
* 25 13C2 PFOA



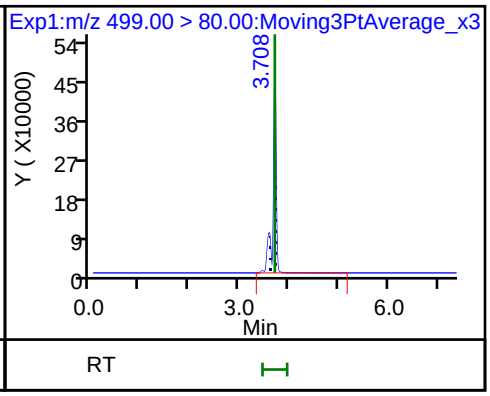
$ 27 13C8 PFOS



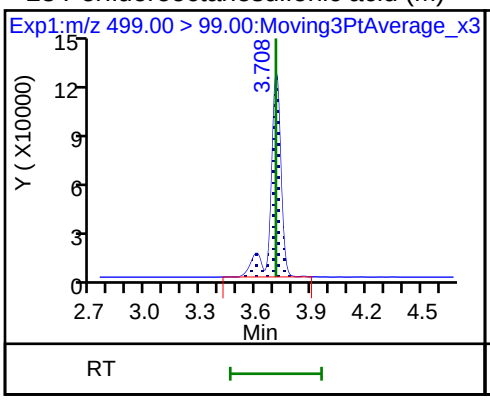
D 31 13C4 PFOS



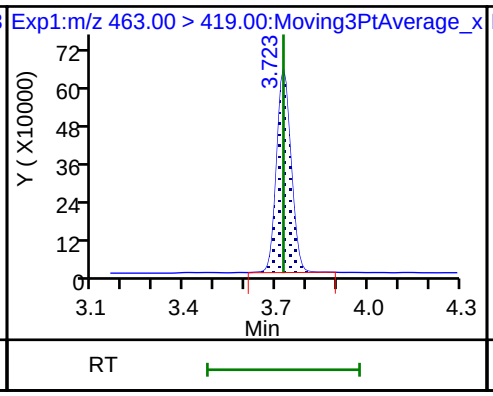
28 Perfluorooctanesulfonic acid



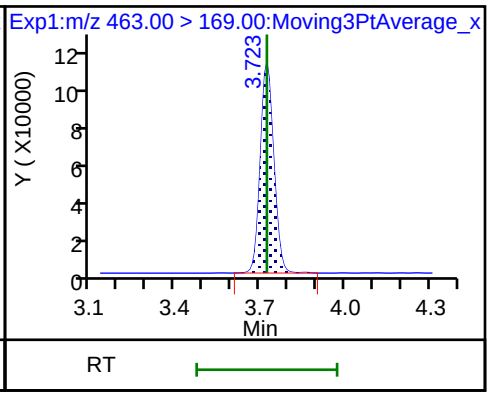
28 Perfluorooctanesulfonic acid (M)



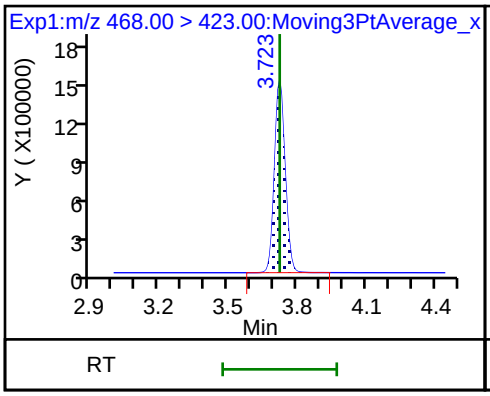
30 Perfluorononanoic acid



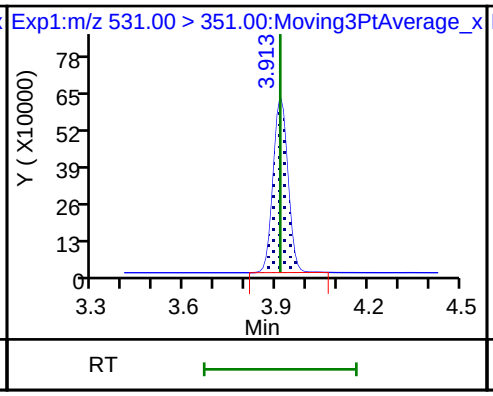
30 Perfluorononanoic acid



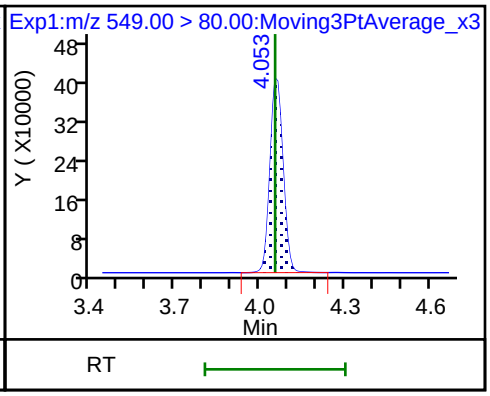
D 29 13C5 PFNA



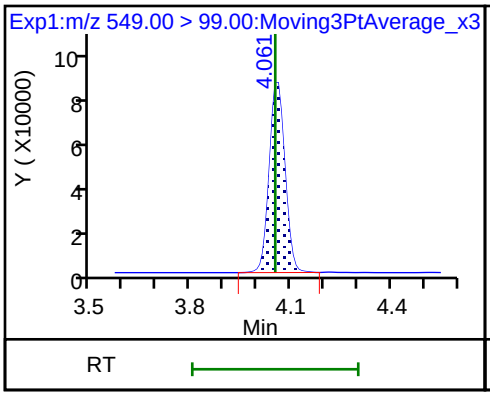
32 9-Chlorohexadecafluoro-3-oxanona



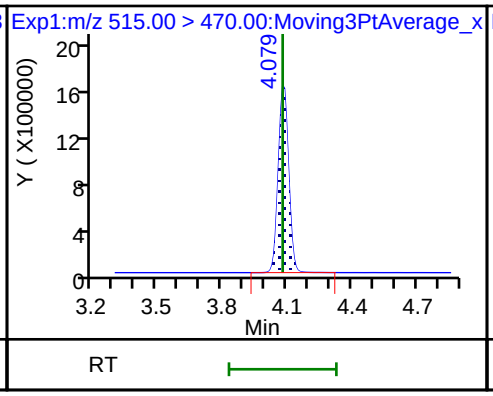
35 Perfluorononanesulfonic acid



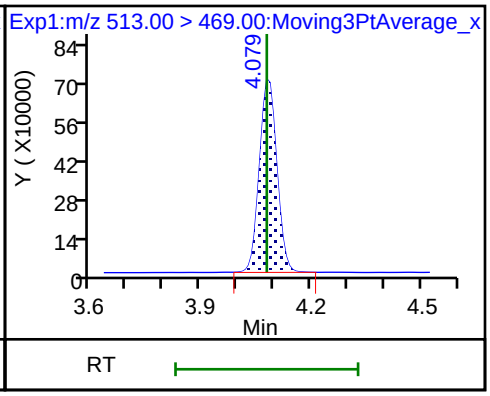
35 Perfluorononanesulfonic acid



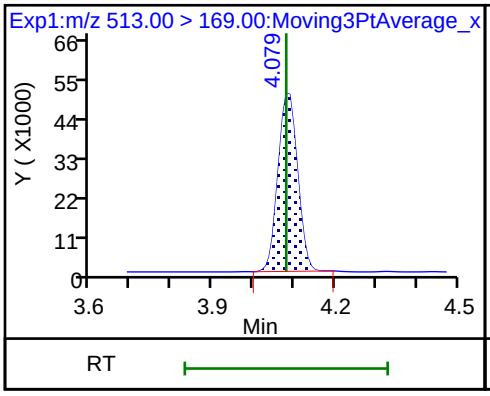
D 33 13C2 PFDA



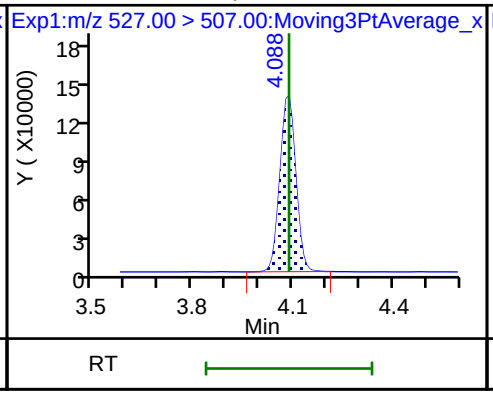
38 Perfluorodecanoic acid



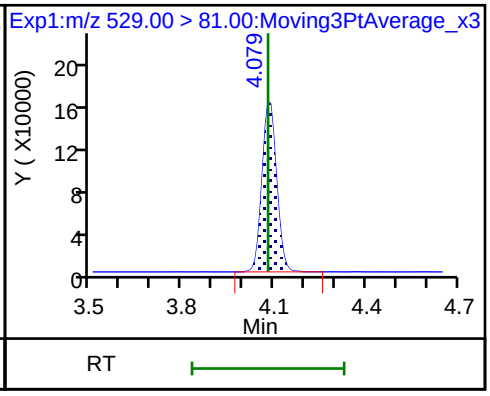
38 Perfluorodecanoic acid



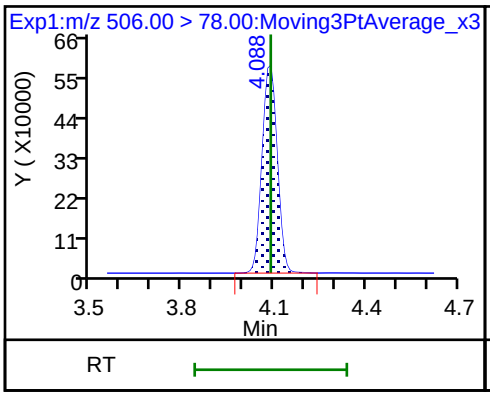
39 1H,1H,2H,2H-perfluorodecanesulfo



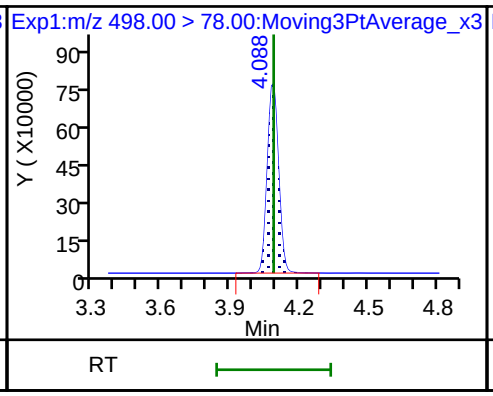
D 37 M2-8:2 FTS



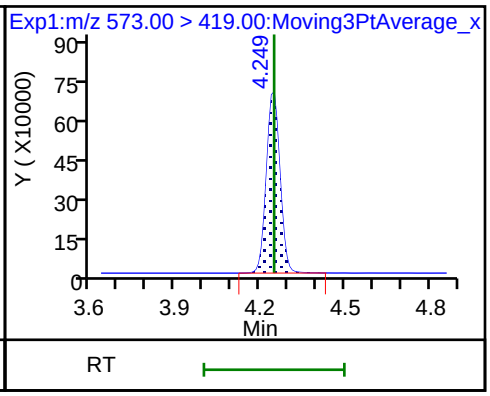
D 36 13C8 FOSA



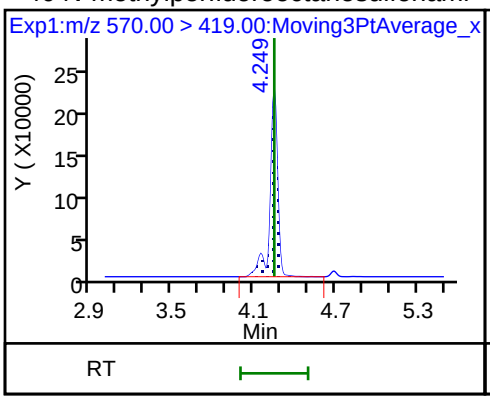
34 Perfluorooctanesulfonamide



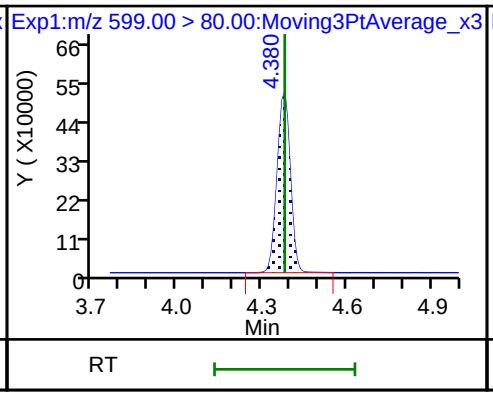
D 41 d3-NMeFOSAA



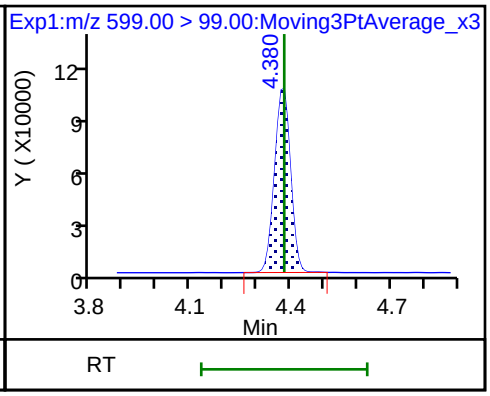
40 N-methylperfluorooctanesulfonami



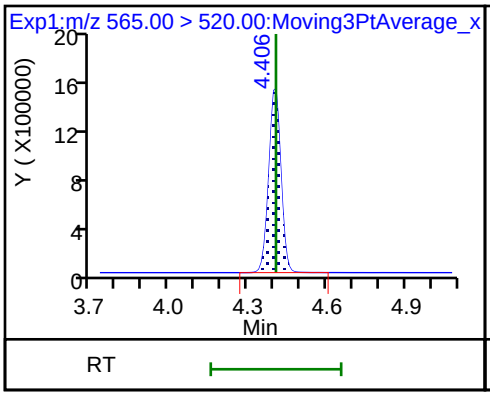
42 Perfluorodecanesulfonic acid



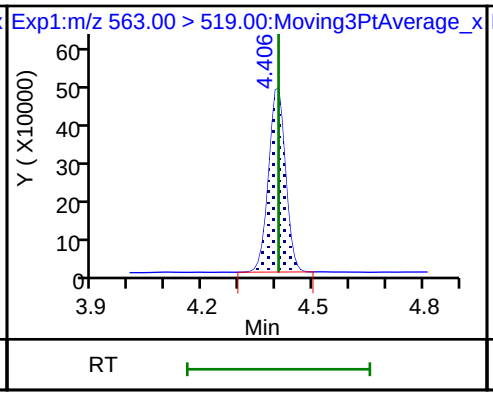
42 Perfluorodecanesulfonic acid



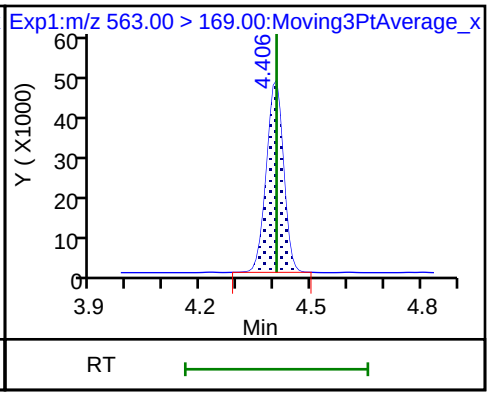
D 46 13C2 PFUnA



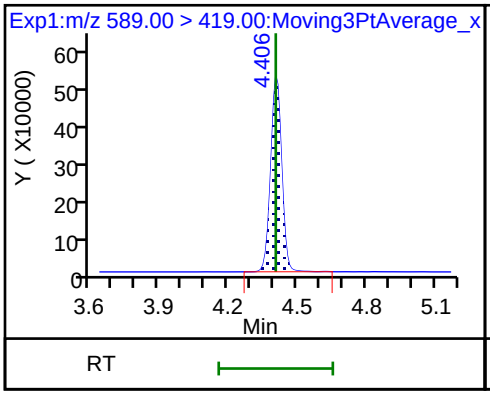
43 Perfluoroundecanoic acid



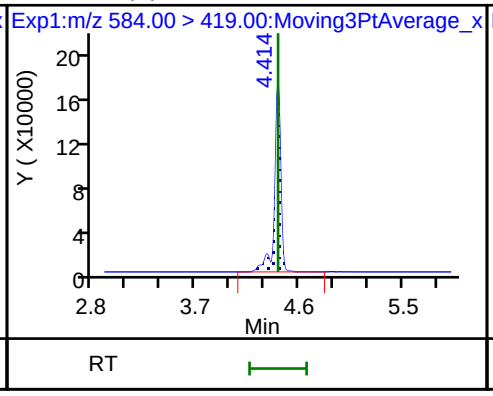
43 Perfluoroundecanoic acid



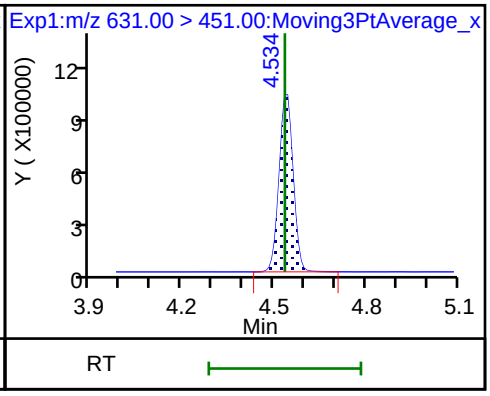
D 45 d5-NEtFOSAA



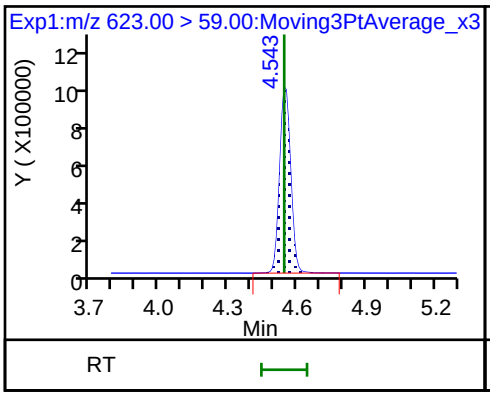
44 N-ethylperfluorooctanesulfonamid



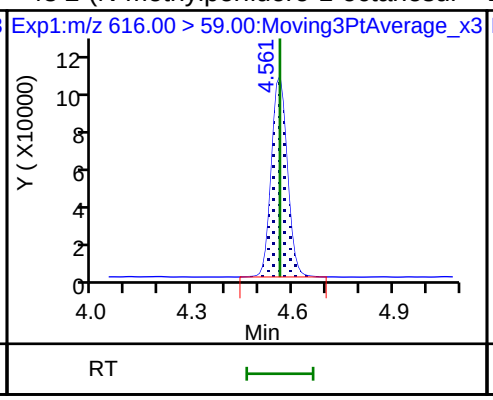
51 11-Chloroeicosafluoro-3-oxaundec



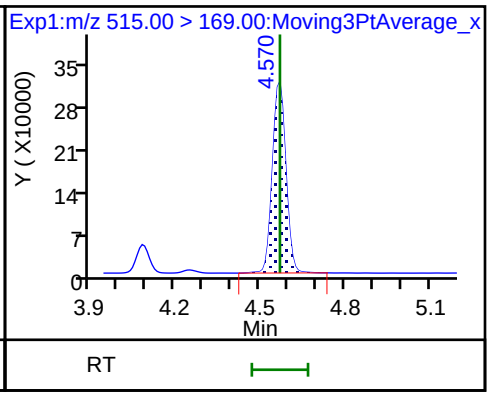
D 47 d7-N-MeFOSE-M



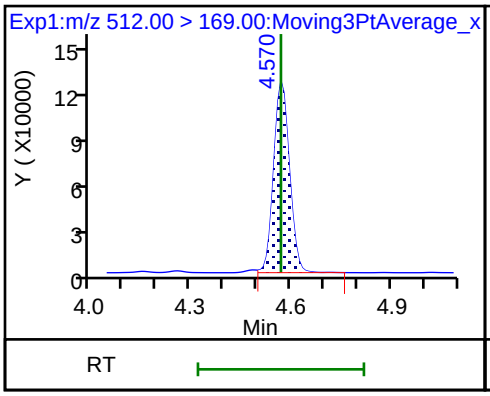
48 2-(N-methylperfluoro-1-octanesul



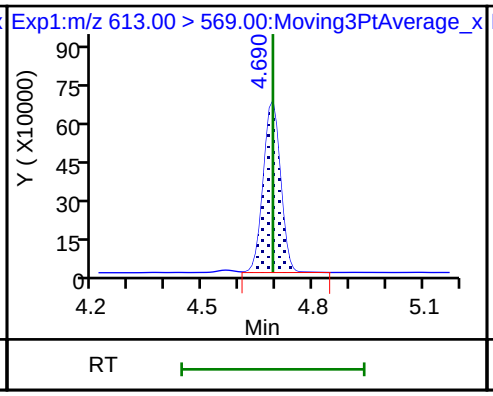
D 49 d-N-MeFOSA-M



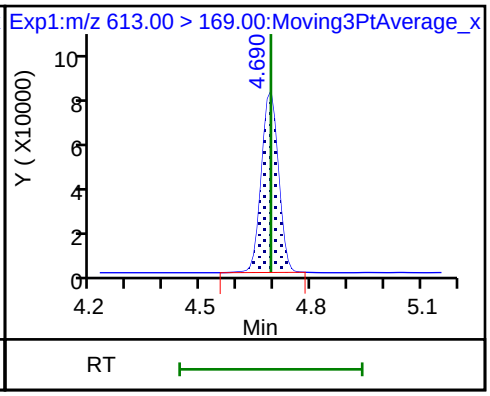
50 NMeFOSA



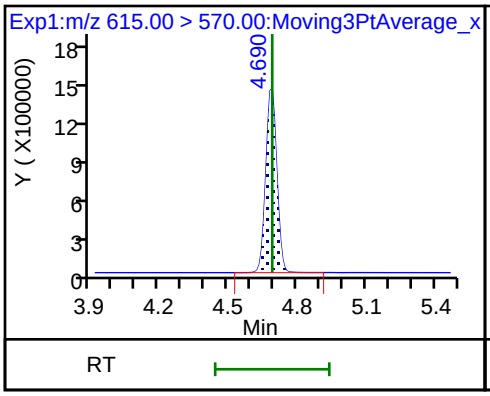
52 Perfluorododecanoic acid



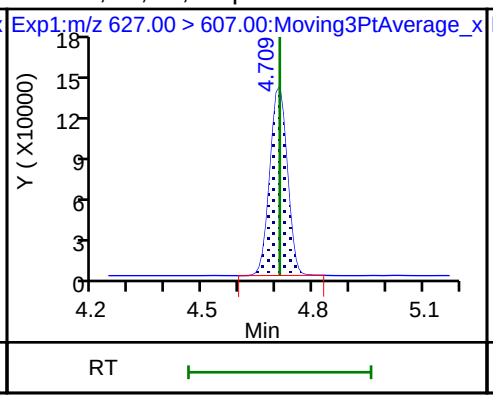
52 Perfluorododecanoic acid



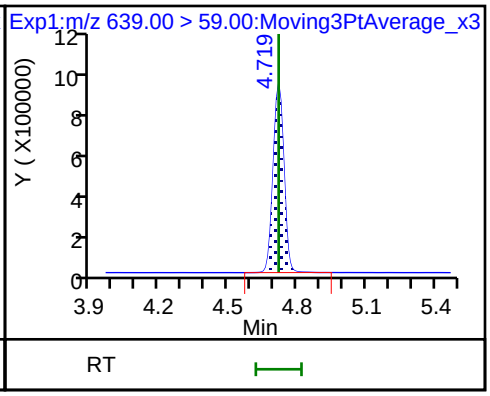
D 56 13C2 PFDoA



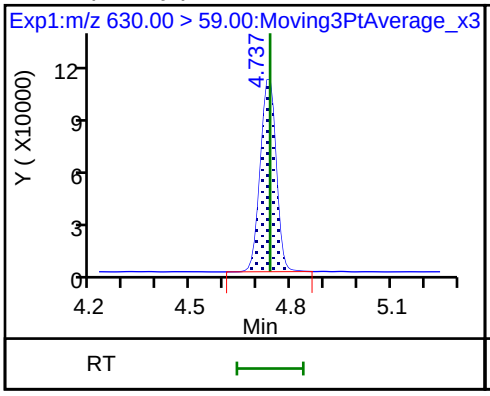
55 1H,1H,2H,2H-perfluorododecanesul



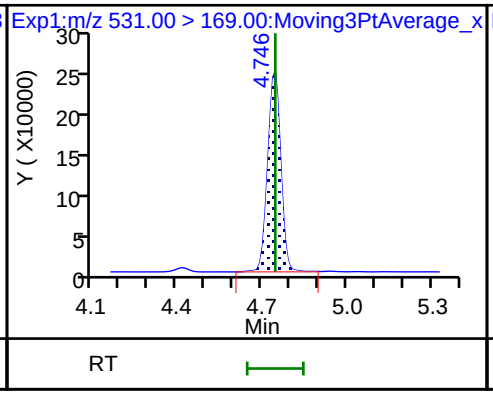
D 53 d9-N-EtFOSE-M



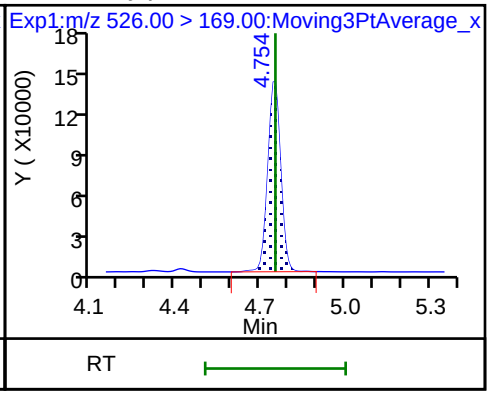
54 2-(N-ethylperfluoro-1-octanesulf



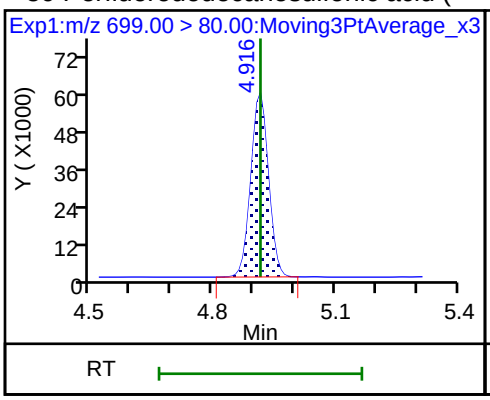
D 58 d-N-EtFOSA-M



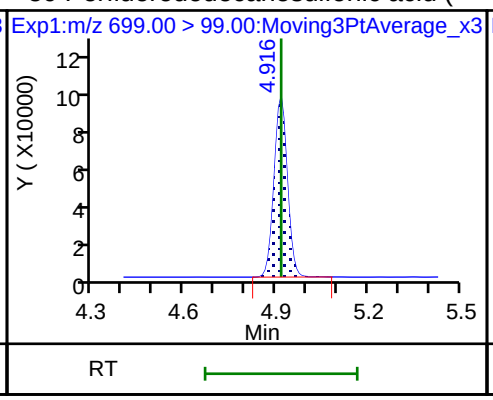
57 N-ethylperfluoro-1-octanesulfona



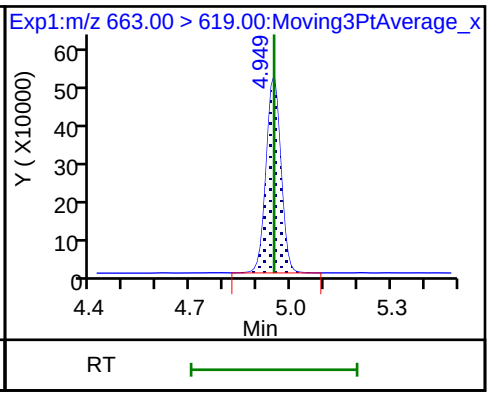
59 Perfluorododecanesulfonic acid (



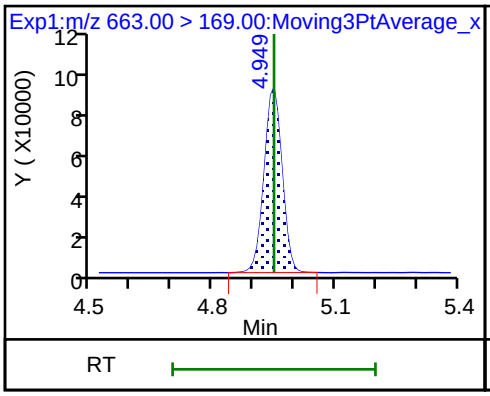
59 Perfluorododecanesulfonic acid (



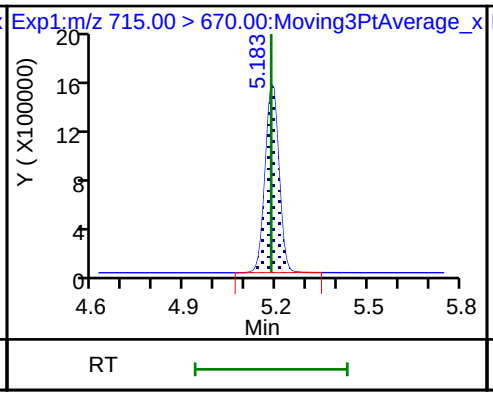
60 Perfluorotridecanoic acid



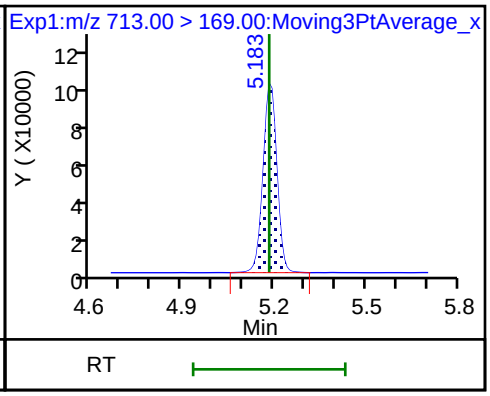
60 Perfluorotridecanoic acid



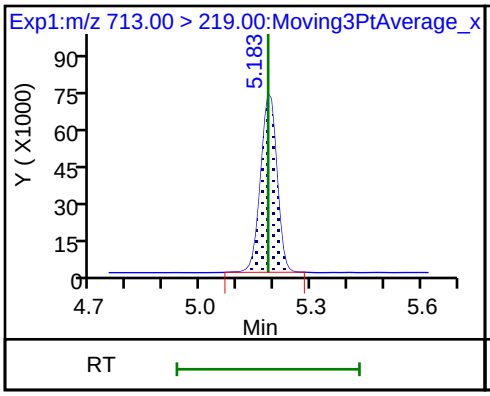
D 62 13C2 PFTeDA



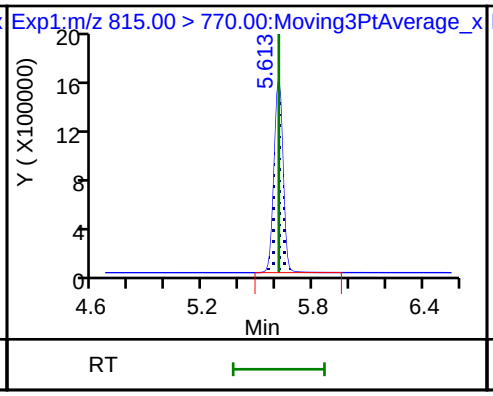
61 Perfluorotetradecanoic acid



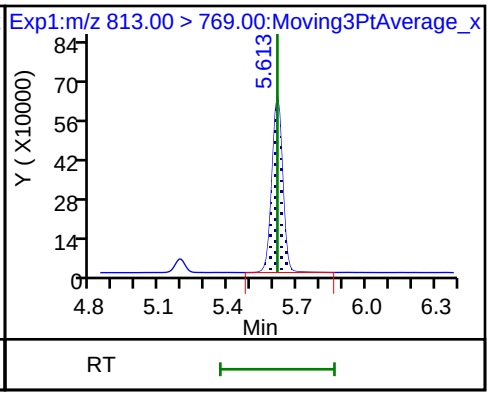
61 Perfluorotetradecanoic acid



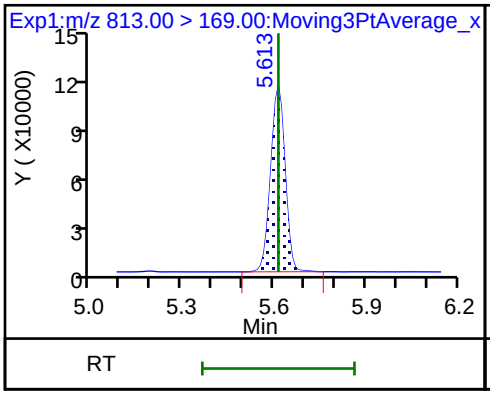
D 63 13C2 PFHxDA



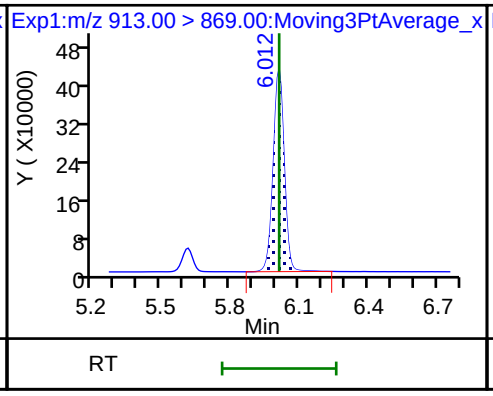
64 Perfluorohexadecanoic acid



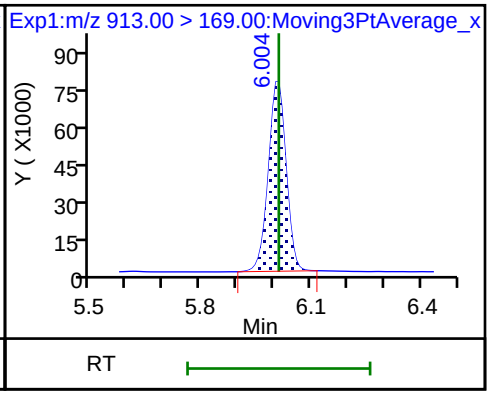
64 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

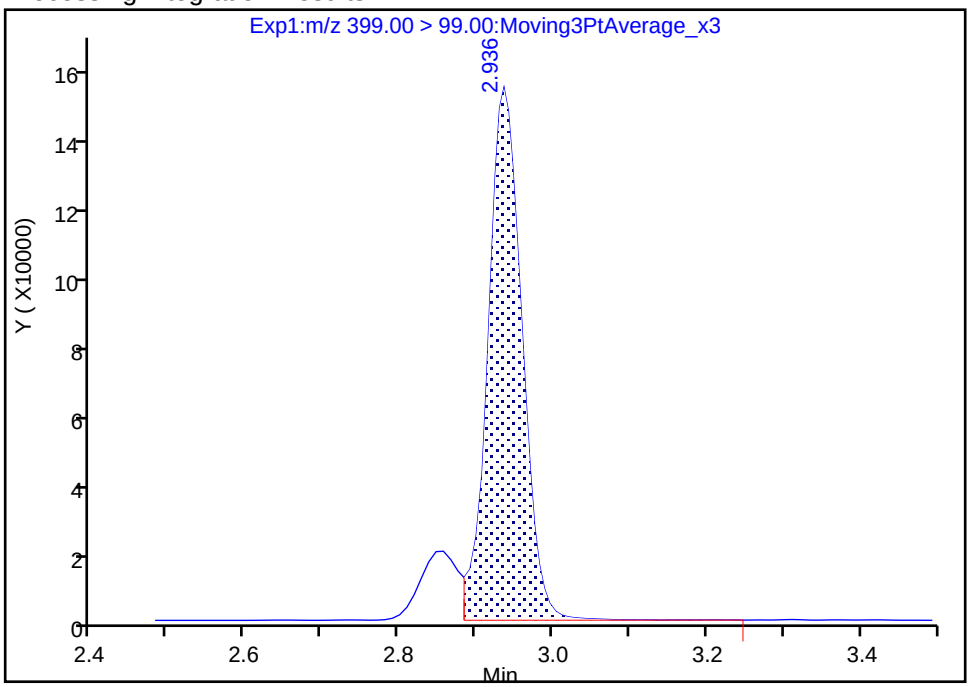
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_006.d				
Injection Date:	08-Jun-2020 15:19:41	Instrument ID:	A9		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	3	Worklist Smp#:	1
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

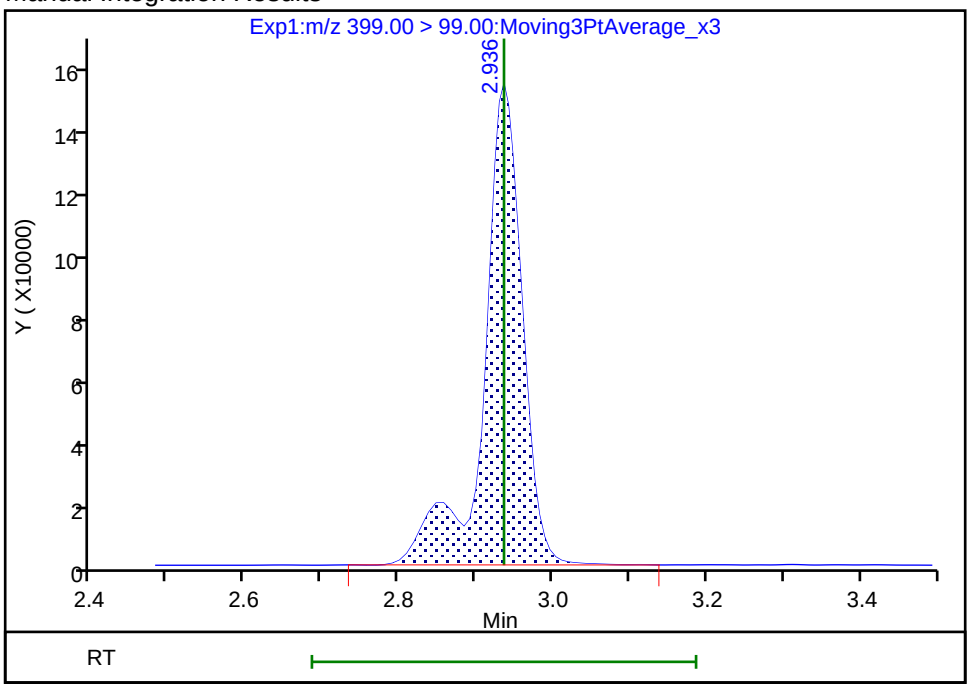
Processing Integration Results

RT: 2.94
Area: 449924
Amount: 0.871016
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 512736
Amount: 0.871016
Amount Units: ng/ml



Reviewer: mongkols, 09-Jun-2020 08:03:33

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

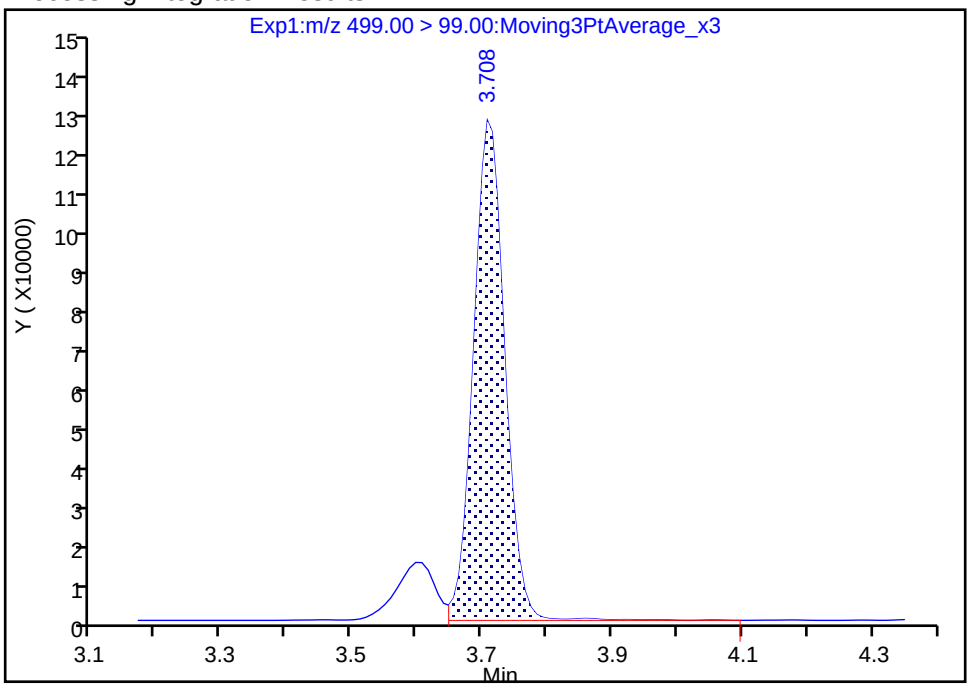
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_006.d				
Injection Date:	08-Jun-2020 15:19:41	Instrument ID:	A9		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	3	Worklist Smp#:	1
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

28 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

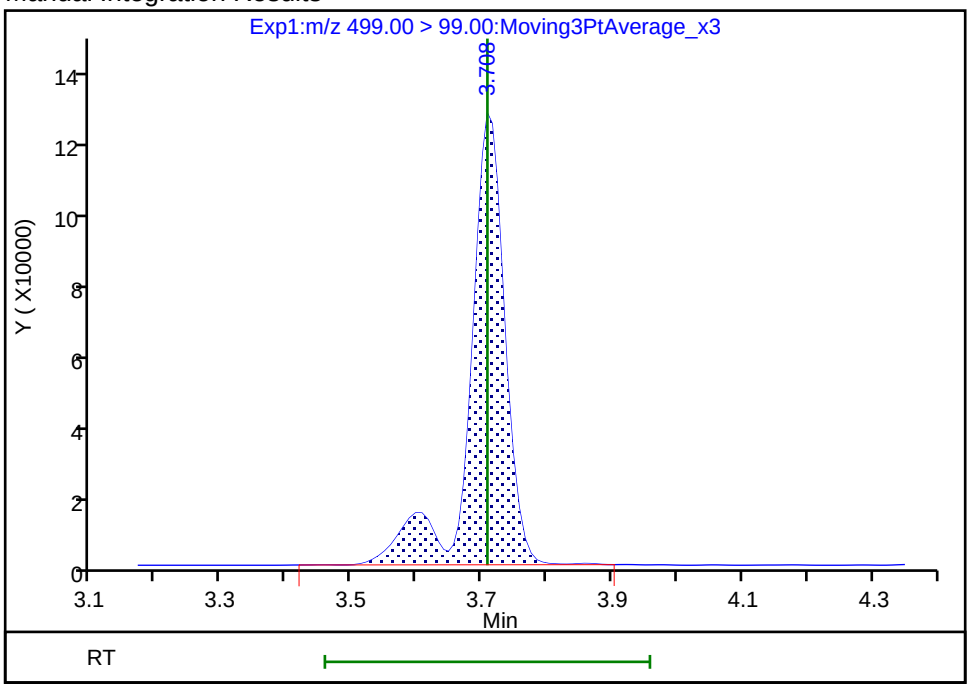
Processing Integration Results

RT: 3.71
Area: 398801
Amount: 0.912470
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 453096
Amount: 0.912470
Amount Units: ng/ml



Reviewer: mongkols, 09-Jun-2020 08:03:42

Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-384478/12 Calibration Date: 06/08/2020 17:02

Instrument ID: A9 Calib Start Date: 06/02/2020 15:24

GC Column: Acquity ID: 2.10(mm) Calib End Date: 06/02/2020 16:30

Lab File ID: 2020.06.08_A9_PFC.B_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.4794	0.5174		2.70	2.50	7.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.044	1.011		2.42	2.50	-3.2	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.087	1.165		2.37	2.21	7.2	50.0
4:2 FTS	AveID	2.868	2.893		2.35	2.34	0.9	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.037	1.023		2.47	2.50	-1.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	1.009	1.042		2.42	2.35	3.3	50.0
HFPO-DA (GenX)	AveID	0.5790	0.5964		2.57	2.50	3.0	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.306	1.391		2.66	2.50	6.5	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.179	1.138		2.19	2.28	-3.5	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	1.906	2.017		2.49	2.36	5.8	50.0
6:2 FTS	AveID	2.227	2.270		2.42	2.37	1.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.058	1.103		2.48	2.38	4.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.257	1.243		2.47	2.50	-1.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.091	1.138		2.42	2.32	4.3	40.0
Perfluorononanoic acid (PFNA)	AveID	1.089	1.143		2.62	2.50	5.0	40.0
F-53B Major	AveID	1.149	1.187		2.41	2.33	3.3	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.6782	0.7440		2.63	2.40	9.7	50.0
8:2 FTS	AveID	2.202	2.242		2.44	2.40	1.8	40.0
Perfluorodecanoic acid (PFDA)	AveID	1.001	1.061		2.65	2.50	6.1	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	3.256	3.402		2.61	2.50	4.5	40.0
NMeFOSAA	AveID	0.9274	0.9176		2.47	2.50	-1.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.8058	0.8900		2.66	2.41	10.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7722	0.7897		2.56	2.50	2.3	40.0
NEtFOSAA	AveID	0.8961	0.8703		2.43	2.50	-2.9	40.0
F-53B Minor	AveID	1.563	1.660		2.50	2.36	6.2	50.0
NMeFOSE	AveID	1.404	1.457		2.59	2.50	3.8	40.0
NMeFOSA	AveID	0.8825	0.9834		2.79	2.50	11.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	1.048	1.067		2.55	2.50	1.8	40.0
10:2 FTS	AveID	1.964	1.990		2.44	2.41	1.3	50.0
NEtFOSE	AveID	1.470	1.521		2.59	2.50	3.5	40.0
NEtFOSA	AveID	1.280	1.324		2.59	2.50	3.4	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.0899	0.0974		2.62	2.42	8.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Lab Sample ID: CCV 320-384478/12 Calibration Date: 06/08/2020 17:02

Instrument ID: A9 Calib Start Date: 06/02/2020 15:24

GC Column: Acquity ID: 2.10(mm) Calib End Date: 06/02/2020 16:30

Lab File ID: 2020.06.08_A9_PFC.B_017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7140	0.8055		2.82	2.50	12.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1699	0.1642		2.42	2.50	-3.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9344		2.60	2.50	4.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5681	0.6791		2.99	2.50	19.5	50.0
13C4 PFBA	Ave	1.205	1.142		2.37	2.50	-5.2	50.0
13C5 PFPeA	Ave	0.4352	0.4352		2.50	2.50	0.0	50.0
13C3 PFBS	Ave	0.5598	0.5733		2.38	2.33	2.4	50.0
M2-4:2 FTS	Ave	0.1177	0.0992		1.97	2.34	-15.7	50.0
13C2 PFHxA	Ave	0.8637	0.8784		2.54	2.50	1.7	50.0
13C3 HFPO-DA	Ave	0.5521	0.5168		2.34	2.50	-6.4	50.0
13C4 PFHpA	Ave	0.7783	0.7726		2.48	2.50	-0.7	50.0
18O2 PFHxS	Ave	0.7377	0.7795		2.50	2.37	5.7	50.0
M2-6:2 FTS	Ave	0.0988	0.0926		2.23	2.38	-6.2	50.0
13C4 PFOA	Ave	0.9544	0.9714		2.54	2.50	1.8	50.0
13C4 PFOS	Ave	0.9416	0.9811		2.49	2.39	4.2	50.0
13C5 PFNA	Ave	0.9381	0.9826		2.62	2.50	4.7	50.0
13C2 PFDA	Ave	1.098	1.132		2.58	2.50	3.1	50.0
13C8 FOSA	Ave	0.3734	0.4092		2.74	2.50	9.6	50.0
M2-8:2 FTS	Ave	0.1176	0.1146		2.33	2.40	-2.5	50.0
d3-NMeFOSAA	Ave	0.4372	0.4814		2.75	2.50	10.1	50.0
13C2 PFUnA	Ave	0.9597	1.031		2.69	2.50	7.4	50.0
d5-NEtFOSAA	Ave	0.3319	0.3841		2.89	2.50	15.7	50.0
d7-N-MeFOSE-M	Ave	0.1093	0.1299		14.8	12.5	18.8	50.0
d-N-MeFOSA-M	Ave	0.2211	0.2311		2.61	2.50	4.5	50.0
13C2 PFDoA	Ave	0.9094	1.002		2.75	2.50	10.1	50.0
d9-N-EtFOSE-M	Ave	0.1102	0.1334		15.1	12.5	21.0	50.0
d-N-EtFOSA-M	Ave	0.1665	0.1809		2.72	2.50	8.7	50.0
13C2 PFTeDA	Ave	0.8835	1.005		2.84	2.50	13.8	50.0
13C2 PFHxDA	Ave	0.8563	1.090		3.18	2.50	27.2	50.0
13C8 PFOA	Ave	0.9349	0.9672		2.53	2.45	3.5	50.0
13C8 PFOS	Ave	0.2183	0.2310		2.53	2.39	5.8	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_017.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 08-Jun-2020 17:02:32 ALS Bottle#: 4 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTRLCMS02 Instrument ID: A9
Sublist: chrom-PFAS_A9*sub16

Method: \\chromfs\Sacramento\ChromData\A9\20200608-97178.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 09-Jun-2020 08:13:43 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1037

First Level Reviewer: mongkols Date: 09-Jun-2020 08:13:43
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.900	1.887	0.013	1.004	2424258	2.70		108	1729	
D 1 13C4 PFBA										
217.00 > 172.00	1.892	1.887	0.005	0.567	4685809	2.37		94.8	9164	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.197	2.190	0.007	1.000	1804337	2.42		96.8	258	
D 4 13C5 PFPeA										
267.90 > 223.00	2.197	2.190	0.007	0.658	1785436	2.50		100	4744	
D 6 13C3 PFBS										
301.90 > 80.00	2.223	2.223	0.0	0.666	2187276	2.38		102	6573	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.232	2.223	0.009	1.004	2421314	2.37	Target=2.39	107	1643	
298.90 > 99.00	2.232	2.223	0.009	1.004	962197		2.52(1.20-3.59)		1551	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.514	2.503	0.011	1.000	1099019	2.35		101	5782	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.514	2.503	0.011	0.753	379935	1.97		84.3	1955	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.556	2.546	0.010	1.004	3687693	2.47	Target=15.64	98.7	959	
313.00 > 119.00	2.556	2.546	0.010	1.004	240670		15.32(7.82-23.46)		856	
D 10 13C2 PFHxA										
315.00 > 270.00	2.546	2.546	0.0	0.762	3603641	2.54		102	7310	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.567	2.557	0.010	1.155	2298050	2.42	Target=1.75	103	3152	
349.00 > 99.00	2.567	2.557	0.010	1.155	1301636		1.77(0.88-2.63)		3272	
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.672	2.660	0.012	1.000	1264477	2.57		103	5690	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.672	2.660	0.012	0.800	2120343	2.34		93.6	5031	
D 15 13C4 PFHpA										
367.00 > 322.00	2.941	2.930	0.011	0.881	3169682	2.48		99.3	6987	
D 17 18O2 PFHxS										
403.00 > 84.00	2.941	2.936	0.005	0.881	3025385	2.50		106	4532	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.941	2.936	0.005	1.000	3310567	2.19	Target=3.04	96.5	1934	
399.00 > 99.00	2.941	2.936	0.005	1.000	1087691		3.04(1.52-4.56)		1806	M
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.941	2.936	0.005	1.000	4408315	2.66	Target=4.39	106	1170	
363.00 > 169.00	2.941	2.936	0.005	1.000	993782		4.44(2.20-6.59)		2549	
19 DONA										
377.00 > 251.00	2.988	2.982	0.006	0.805	7648205	2.49	Target=2.17	106	11684	
377.00 > 85.00	2.988	2.982	0.006	0.805	3652755		2.09(1.09-3.26)		6040	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.318	3.319	-0.001	0.994	360882	2.23		93.8	2172	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.318	3.319	-0.001	1.000	817390	2.42		102	2815	
$ 21 13C8 PFOA										
421.00 > 376.00	3.332	3.326	0.006	0.998	3884720	2.53		103	8277	
D 26 13C4 PFOA										
417.00 > 372.00	3.339	3.333	0.006	1.000	3985068	2.54		102	8075	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.332	3.333	-0.001	0.897	4226748	2.48	Target=3.82	104	4167	
449.00 > 99.00	3.332	3.333	-0.001	0.897	1146591		3.69(1.91-5.72)		3044	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.339	3.333	0.006	1.000	4954164	2.47	Target=2.82	98.9	461	
413.00 > 169.00	3.339	3.333	0.006	1.000	1725622		2.87(1.41-4.23)		3455	
* 25 13C2 PFOA										
415.00 > 370.00	3.339	3.333	0.006		4102538	2.50			7510	
$ 27 13C8 PFOS										
507.00 > 99.00	3.707	3.708	-0.001	1.110	905935	2.53		106	1746	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.714	3.708	0.006	1.000	4250146	2.42	Target=4.25	104	2460	
499.00 > 99.00	3.714	3.708	0.006	1.000	983823		4.32(2.13-6.38)		4956	
D 31 13C4 PFOS										
503.00 > 80.00	3.714	3.708	0.006	1.112	3847747	2.49		104	6273	
30 Perfluorononanoic acid										
463.00 > 419.00	3.730	3.723	0.007	1.000	4607317	2.62	Target=5.46	105	946	
463.00 > 169.00	3.730	3.723	0.007	1.000	826164		5.58(2.73-8.19)		2563	
D 29 13C5 PFNA										
468.00 > 423.00	3.730	3.723	0.007	1.117	4030940	2.62		105	6728	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.921	3.913	0.008	1.056	4451139	2.41		103	3624	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.060	4.053	0.007	1.093	2874582	2.63	Target=4.97	110	5273	
549.00 > 99.00	4.060	4.053	0.007	1.093	584638		4.92(2.48-7.45)		1949	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.086	4.079	0.007	1.000	4928544	2.65	Target=14.66	106	1657	
513.00 > 169.00	4.086	4.079	0.007	1.000	344040		14.33(7.33-21.99)		230	
D 33 13C2 PFDA										
515.00 > 470.00	4.086	4.079	0.007	1.224	4643369	2.58		103	8546	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.086	4.079	0.007	1.224	450482	2.33		97.5	1488	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.086	4.088	-0.002	1.000	1009771	2.44		102	4663	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.095	4.088	0.007	1.002	5711999	2.61		105	3463	
D 36 13C8 FOSA										
506.00 > 78.00	4.086	4.088	-0.002	1.224	1678831	2.74		110	2335	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.247	4.249	-0.002	1.272	1974749	2.75		110	2655	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.256	4.249	0.007	1.002	1811984	2.47		98.9	25101	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.378	4.380	-0.002	1.179	3452960	2.66	Target=4.49	110	4609	
599.00 > 99.00	4.378	4.380	-0.002	1.179	732509		4.71(2.25-6.74)		3294	
D 46 13C2 PFUnA										
565.00 > 520.00	4.404	4.406	-0.002	1.319	4229275	2.69		107	6477	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.404	4.406	-0.002	1.000	3340032	2.56	Target=10.82	102	832	
563.00 > 169.00	4.404	4.406	-0.002	1.000	347302		9.62(5.41-16.23)		1594	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.413	4.406	0.007	1.321	1575693	2.89		116	1338	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.421	4.414	0.007	1.002	1371263	2.43		97.1	2004	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.541	4.534	0.007	1.223	6293096	2.50		106	8181	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.558	4.543	0.015	1.365	2663789	14.8		119	4960	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.567	4.561	0.006	1.002	776014	2.59		104	2695	
50 NMeFOSA										
512.00 > 169.00	4.576	4.570	0.006	1.000	932474	2.79		111	1671	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.576	4.570	0.006	1.370	948187	2.61		105	238	
D 56 13C2 PFDoA										
615.00 > 570.00	4.688	4.690	-0.002	1.404	4108811	2.75		110	8678	
52 Perfluorododecanoic acid										
613.00 > 569.00	4.698	4.690	0.008	1.002	4385918	2.55	Target=8.20	102	922	
613.00 > 169.00	4.688	4.690	-0.002	1.000	528898		8.29(4.10-12.30)		2325	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.716	4.709	0.007	1.154	902055	2.44		101	4485	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.726	4.719	0.007	1.415	2735388	15.1		121	6172	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.744	4.737	0.007	1.004	832109	2.59		103	3432	
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.751	4.746	0.005	1.423	742270	2.72		109	1383	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.759	4.754	0.005	1.002	982830	2.59		103	853	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.922	4.916	0.006	1.325	379620	2.62	Target=0.67	108	2136	
699.00 > 99.00	4.922	4.916	0.006	1.325	556095		0.68(0.33-1.00)		2559	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.955	4.949	0.006	1.057	3309572	2.82	Target=5.48	113	1669	
663.00 > 169.00	4.955	4.949	0.006	1.057	581890		5.69(2.74-8.23)		3080	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.189	5.183	0.006	1.000	677098	2.42	Target=1.49	96.6	3203	
713.00 > 219.00	5.189	5.183	0.006	1.000	475610		1.42(0.75-2.24)		2343	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.189	5.183	0.006	1.554	4124627	2.84		114	9466	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.618	5.613	0.005	1.000	4177070	2.60	Target=5.24	104	578	
813.00 > 169.00	5.618	5.613	0.005	1.000	779462		5.36(2.62-7.87)		3001	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.618	5.613	0.005	1.682	4470239	3.18		127	6456	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.009	6.012	-0.003	1.070	3035800	2.99	Target=4.86	120	541	
913.00 > 169.00	6.009	6.012	-0.003	1.070	560317		5.42(2.43-7.29)		1612	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00027 Amount Added: 1.00 Units: mL

Report Date: 09-Jun-2020 08:13:44 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_017.d

Injection Date: 08-Jun-2020 17:02:32 Instrument ID: A9

Lims ID: CCV L5

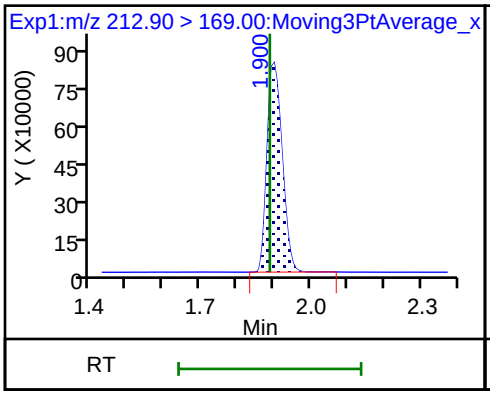
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 4 Worklist Smp#: 12

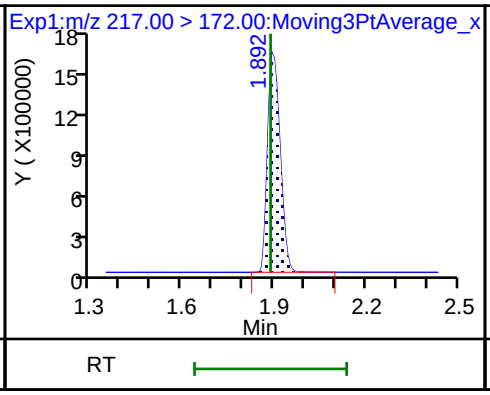
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

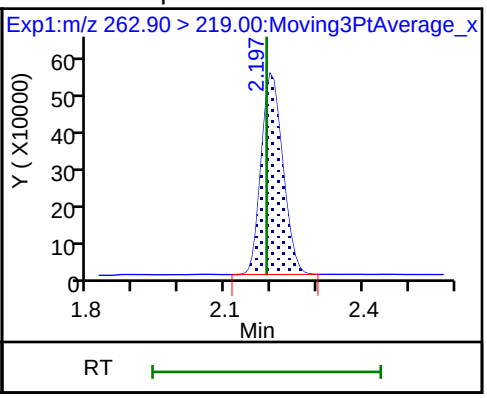
2 Perfluorobutanoic acid



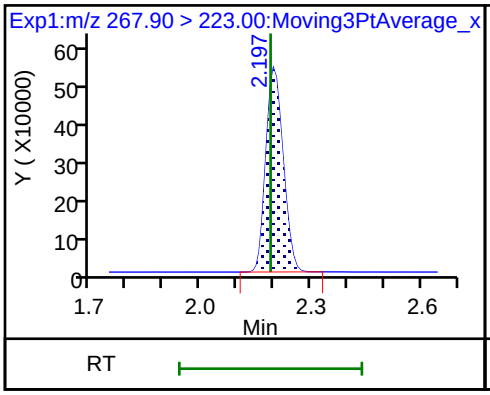
D 1 13C4 PFBA



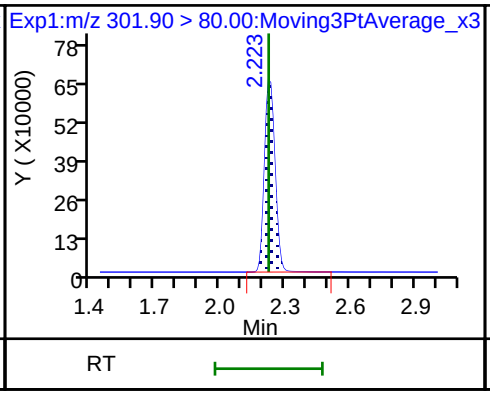
3 Perfluoropentanoic acid



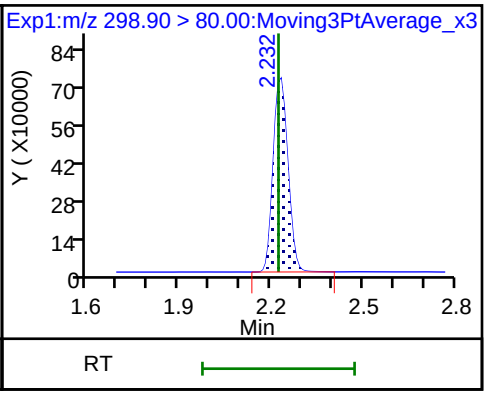
D 4 13C5 PFPeA



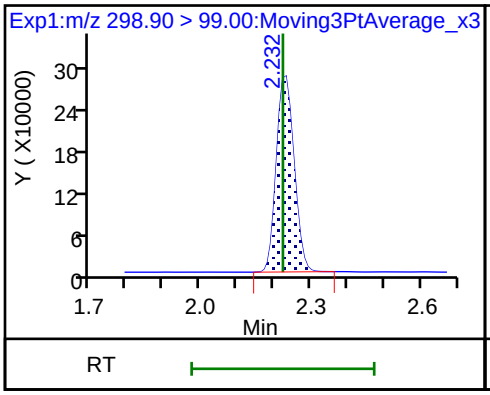
D 6 13C3 PFBS



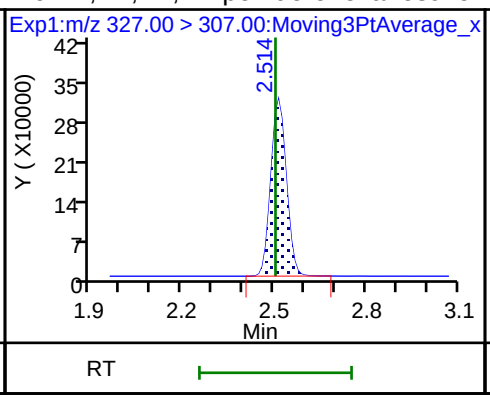
5 Perfluorobutanesulfonic acid



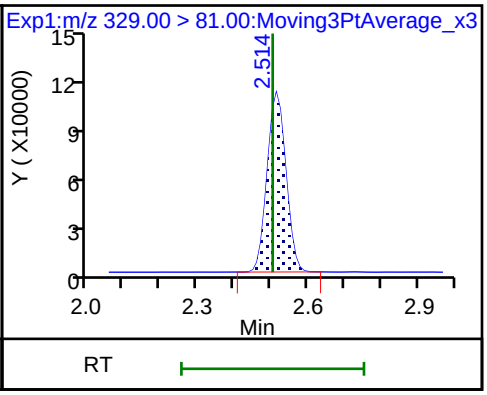
5 Perfluorobutanesulfonic acid



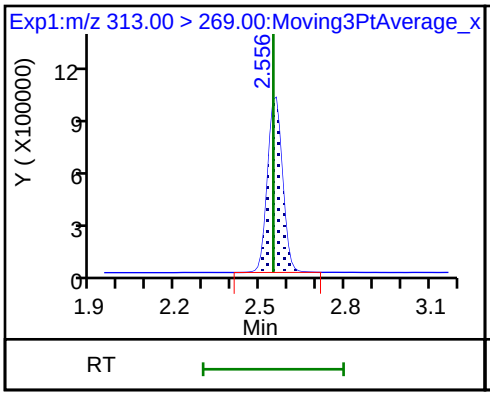
9 1H,1H,2H,2H-perfluorohexanesulfo



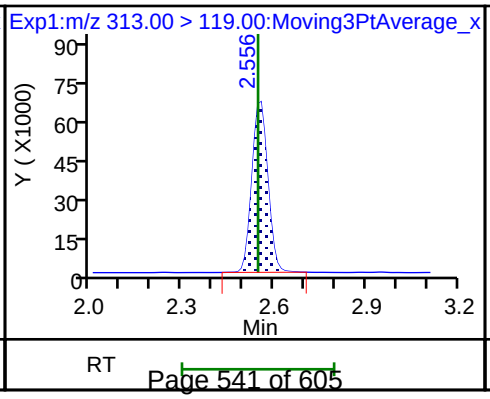
D 8 M2-4:2 FTS



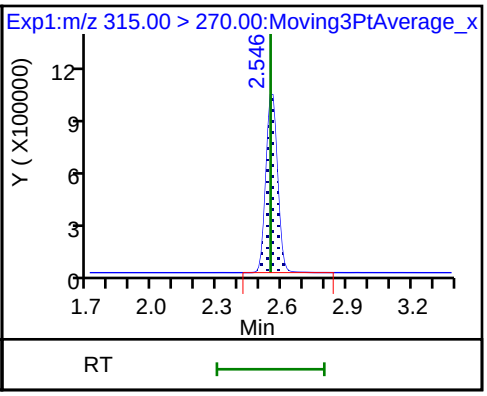
11 Perfluorohexanoic acid



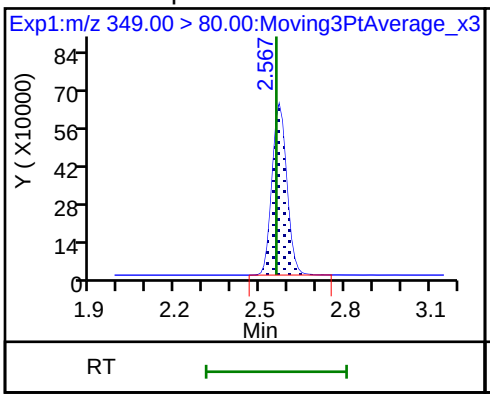
11 Perfluorohexanoic acid



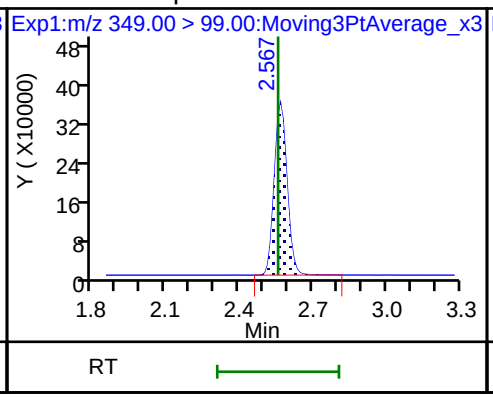
D 10 13C2 PFHxA



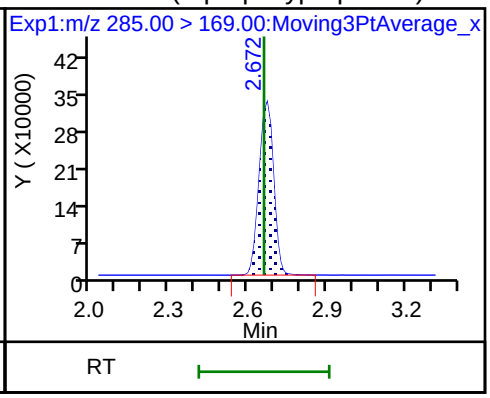
12 Perfluoropentanesulfonic acid



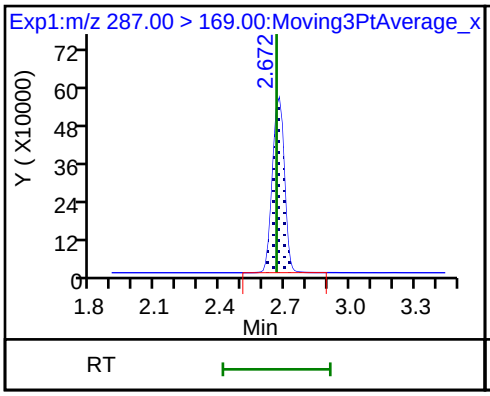
12 Perfluoropentanesulfonic acid



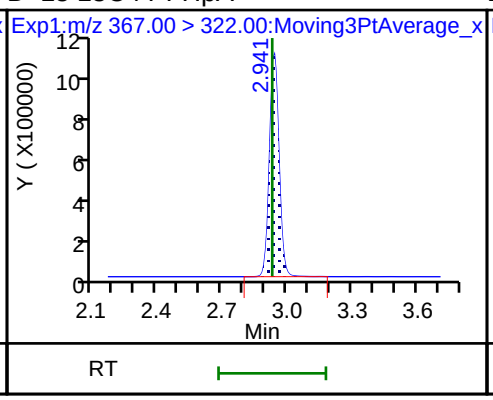
14 Perfluoro(2-propoxypropanoic) ac



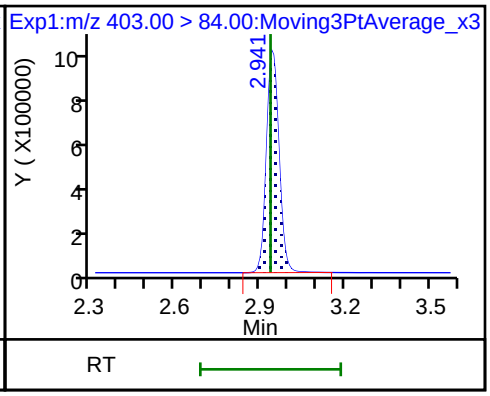
D 13 13C3 HFPO-DA



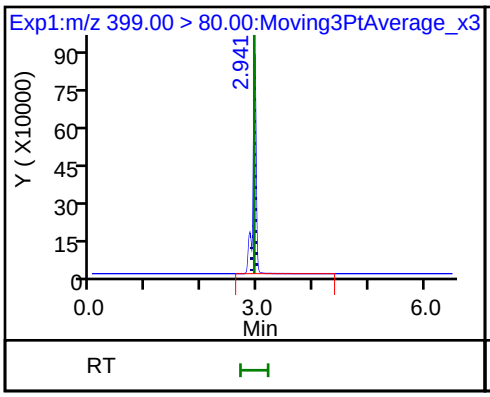
D 15 13C4 PFHpA



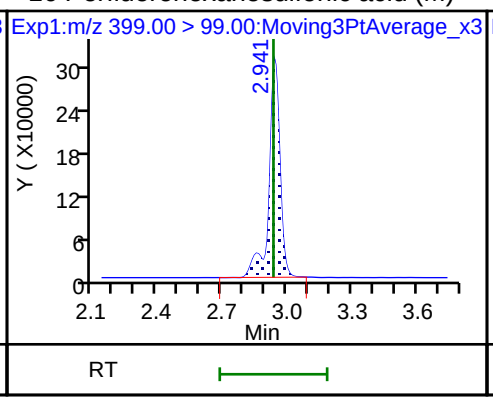
D 17 18O2 PFHxS



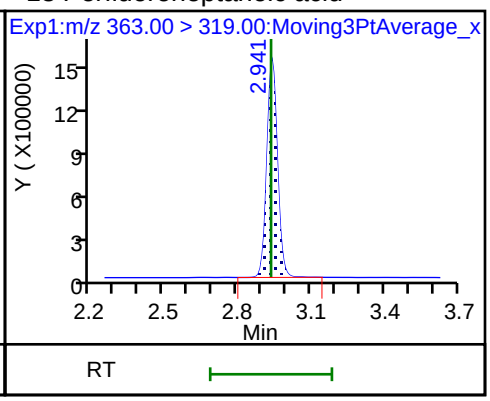
16 Perfluorohexanesulfonic acid



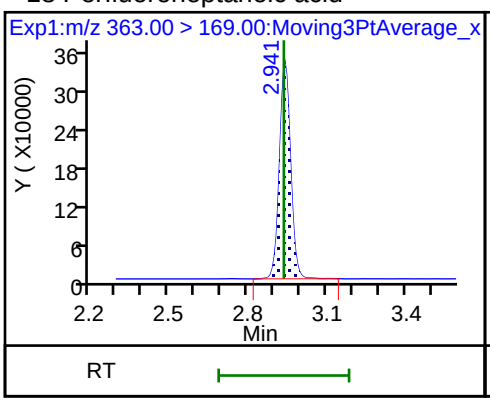
16 Perfluorohexanesulfonic acid (M)



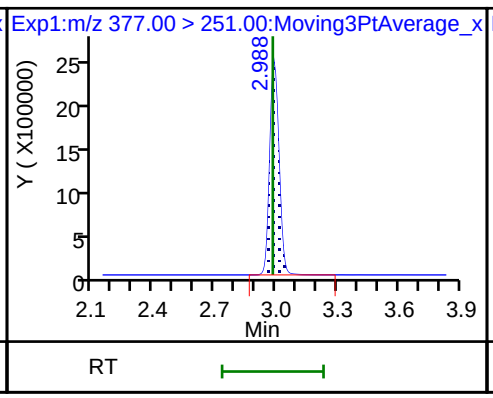
18 Perfluoroheptanoic acid



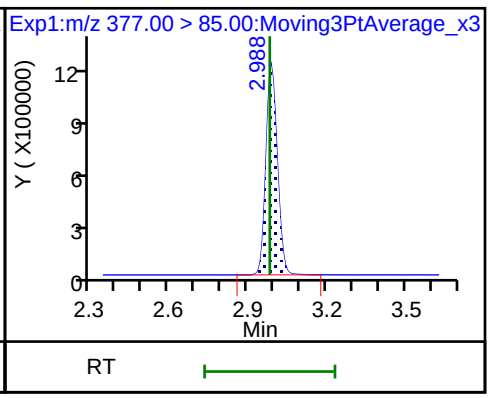
18 Perfluoroheptanoic acid



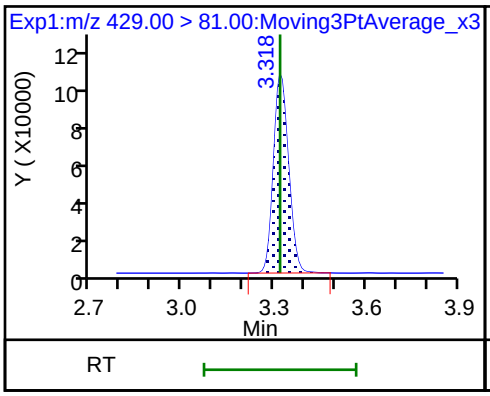
19 DONA



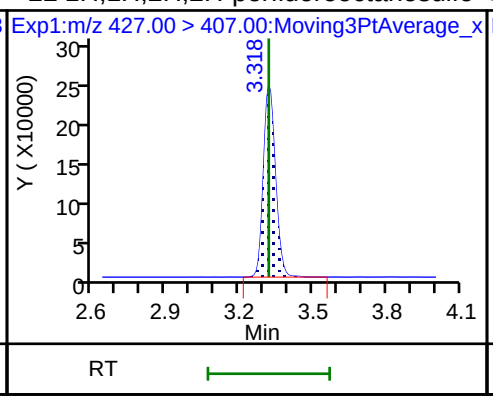
19 DONA



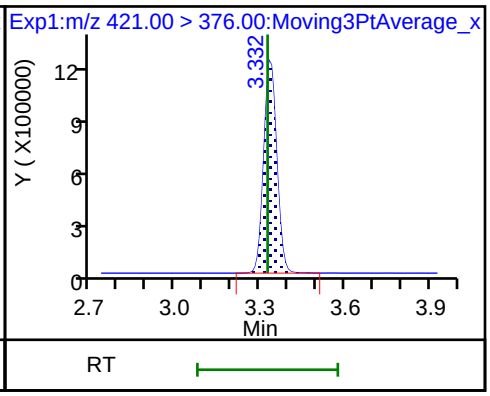
D 20 M2-6:2 FTS



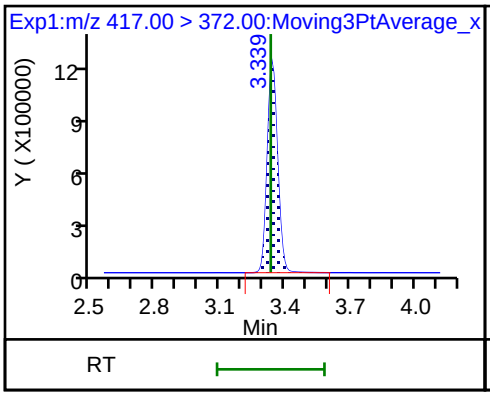
22 1H,1H,2H,2H-perfluorooctanesulfo



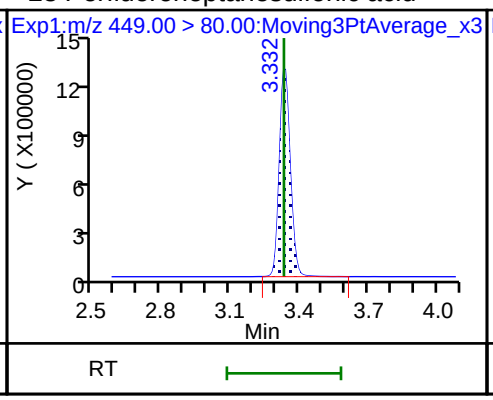
$ 21 13C8 PFOA



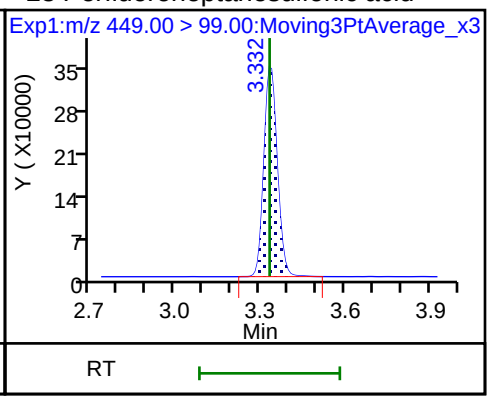
D 26 13C4 PFOA



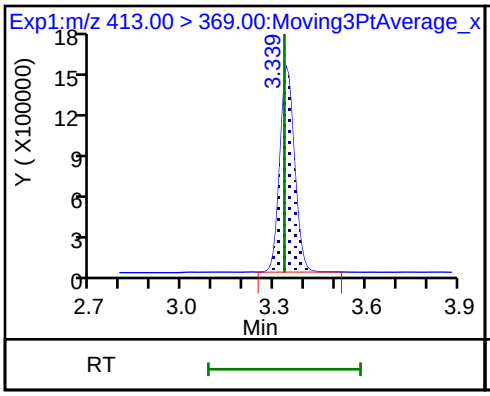
23 Perfluoroheptanesulfonic acid



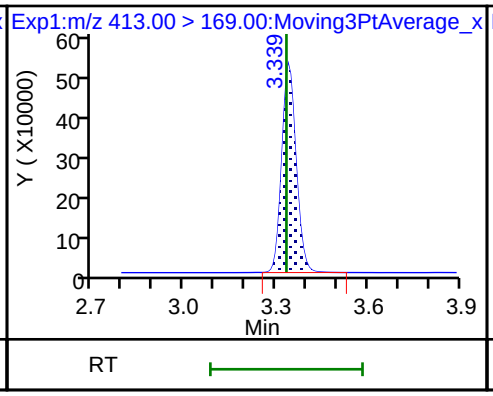
23 Perfluoroheptanesulfonic acid



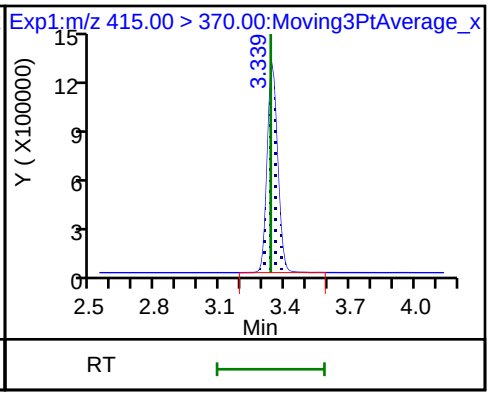
24 Perfluorooctanoic acid



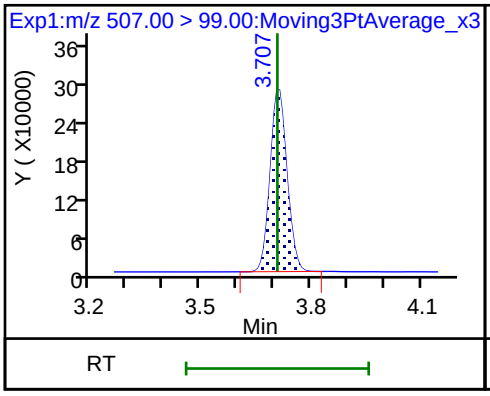
24 Perfluorooctanoic acid



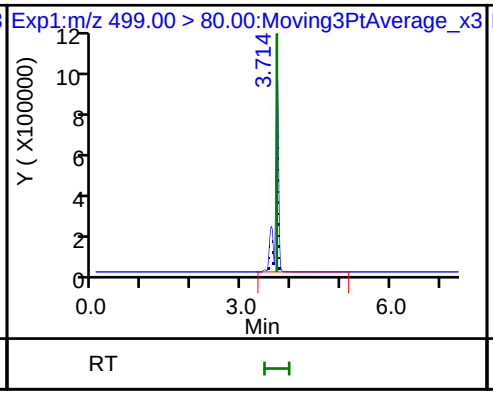
* 25 13C2 PFOA



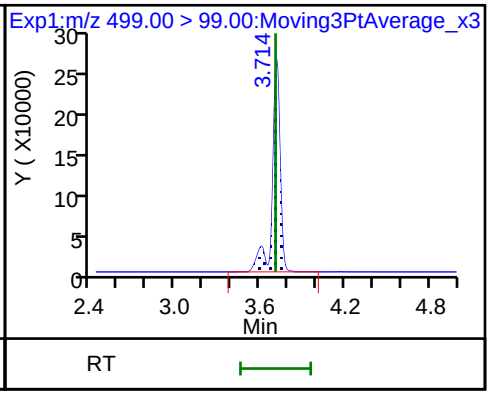
$ 27 13C8 PFOS



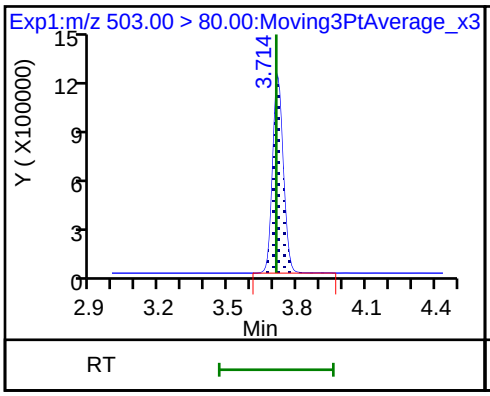
28 Perfluorooctanesulfonic acid



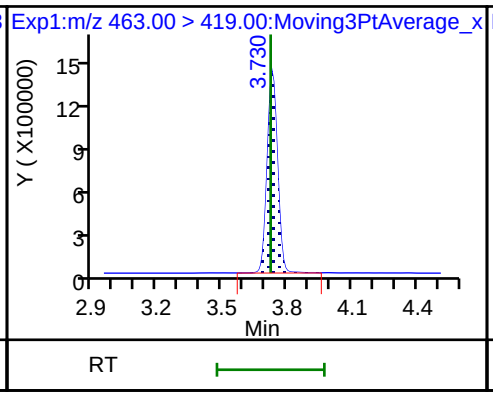
28 Perfluorooctanesulfonic acid



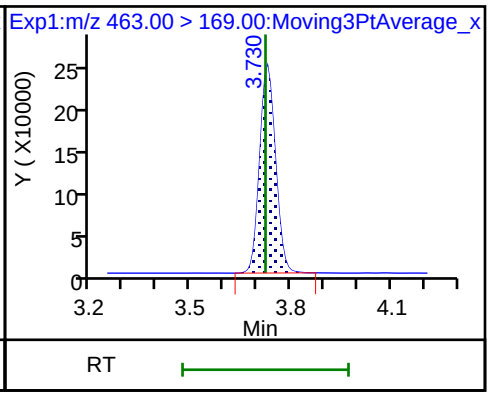
D 31 13C4 PFOS



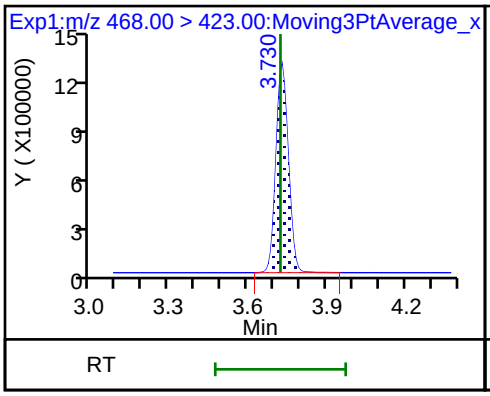
30 Perfluorononanoic acid



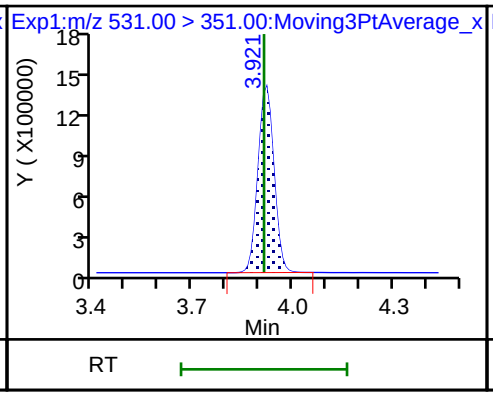
30 Perfluorononanoic acid



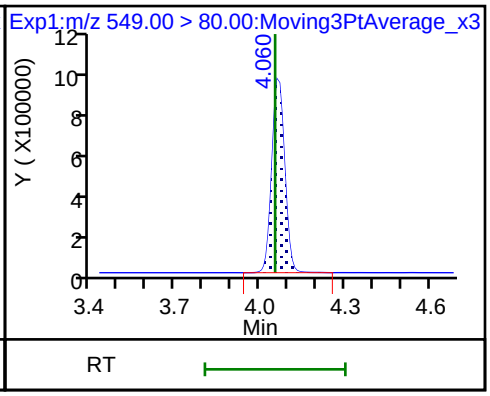
D 29 13C5 PFNA



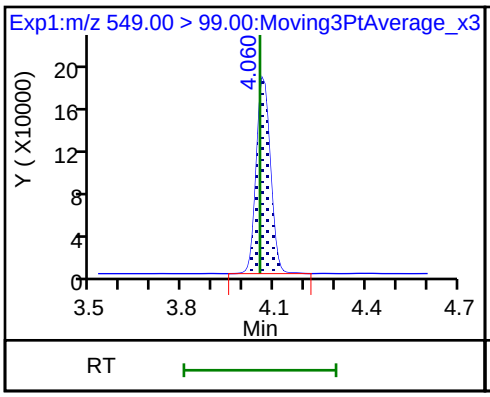
32 9-Chlorohexadecafluoro-3-oxanona



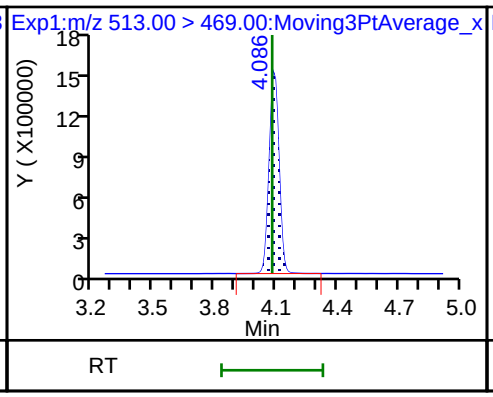
35 Perfluorononanesulfonic acid



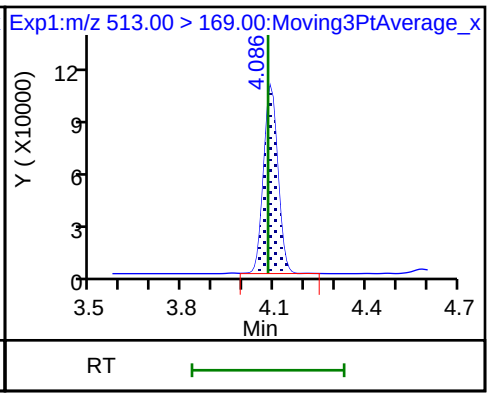
35 Perfluorononanesulfonic acid



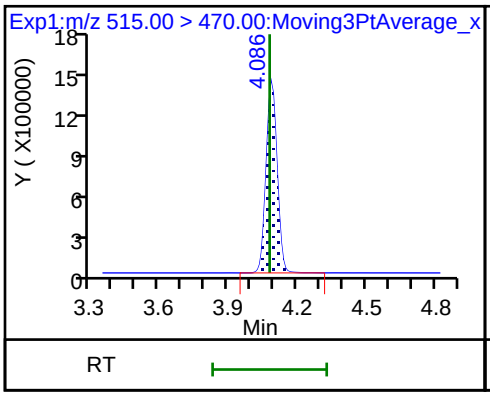
38 Perfluorodecanoic acid



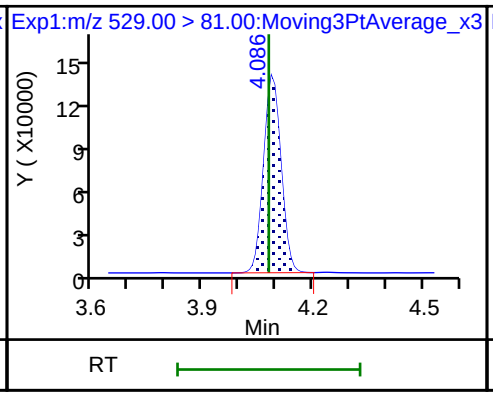
38 Perfluorodecanoic acid



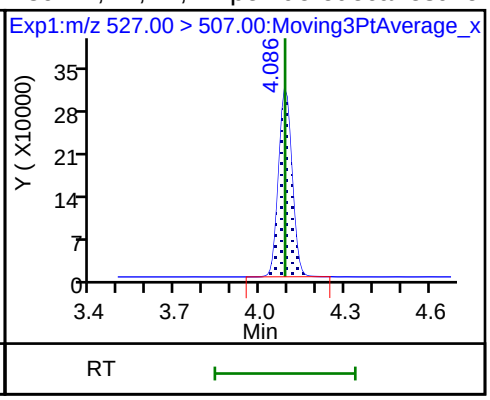
D 33 13C2 PFDA



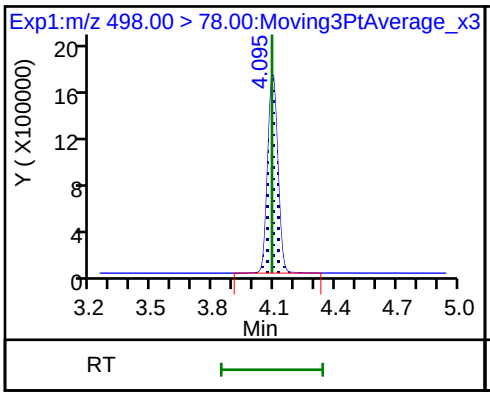
D 37 M2-8:2 FTS



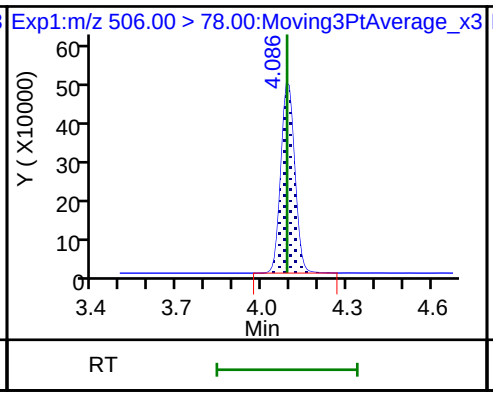
39 1H,1H,2H,2H-perfluorodecanesulfo



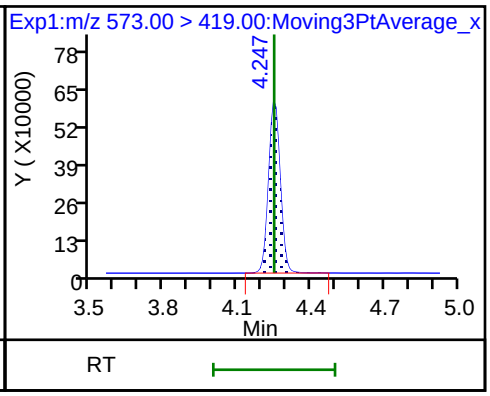
34 Perfluorooctanesulfonamide



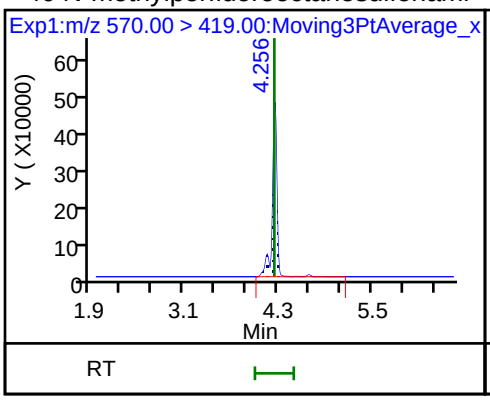
D 36 13C8 FOSA



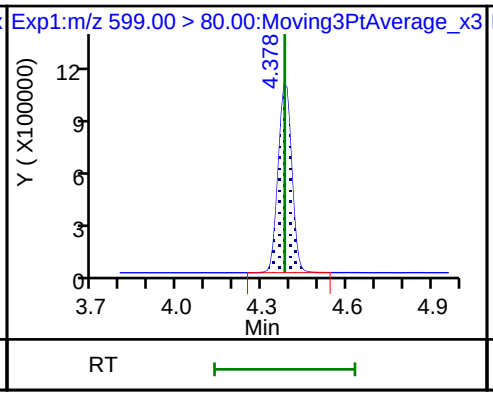
D 41 d3-NMeFOSAA



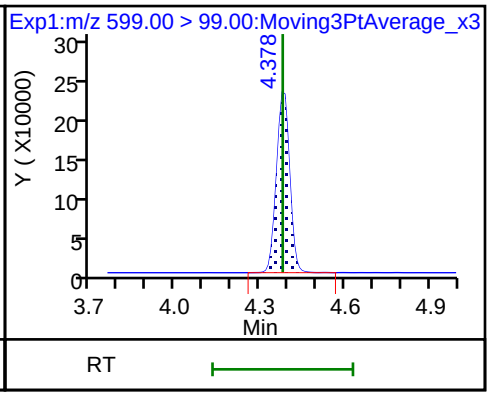
40 N-methylperfluorooctanesulfonami



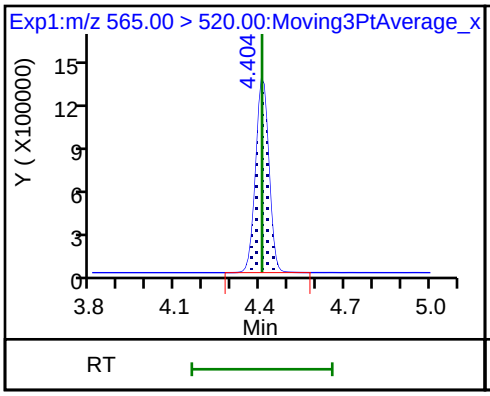
42 Perfluorodecanesulfonic acid



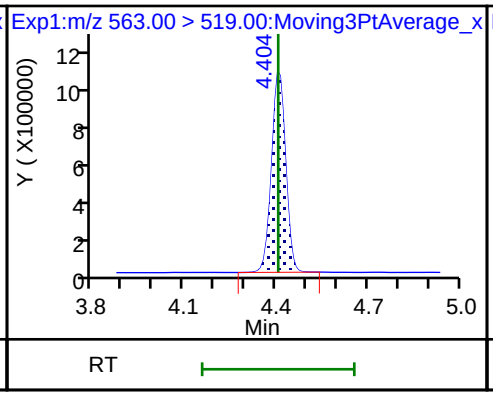
42 Perfluorodecanesulfonic acid



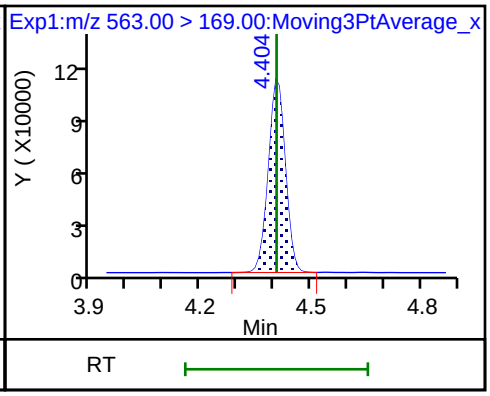
D 46 13C2 PFUnA



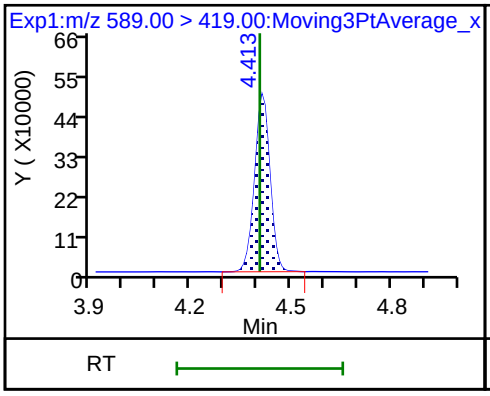
43 Perfluoroundecanoic acid



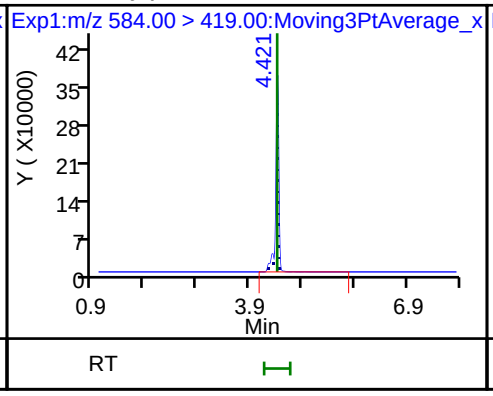
43 Perfluoroundecanoic acid



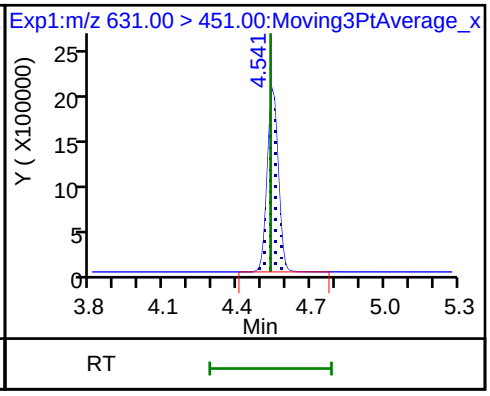
D 45 d5-NEtFOSAA



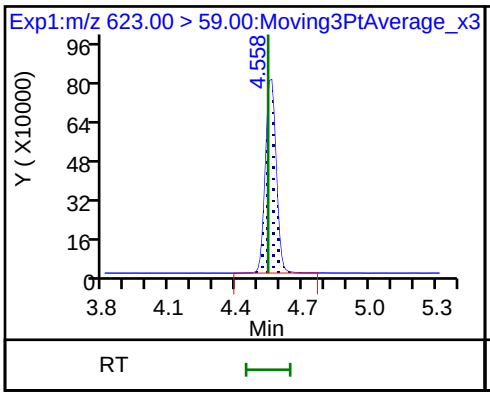
44 N-ethylperfluorooctanesulfonamid



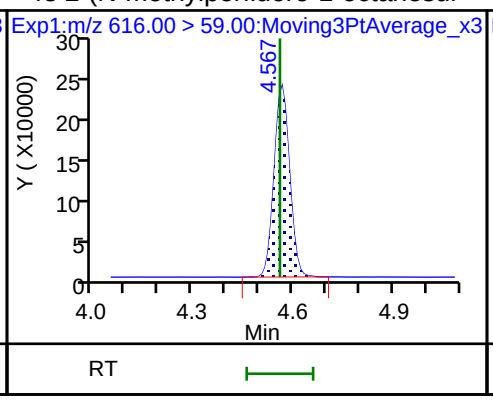
51 11-Chloroeicosafluoro-3-oxaundec



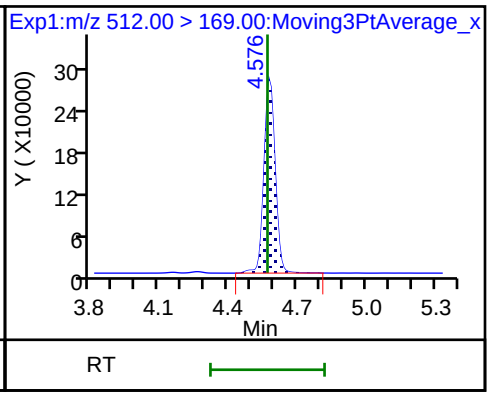
D 47 d7-N-MeFOSE-M



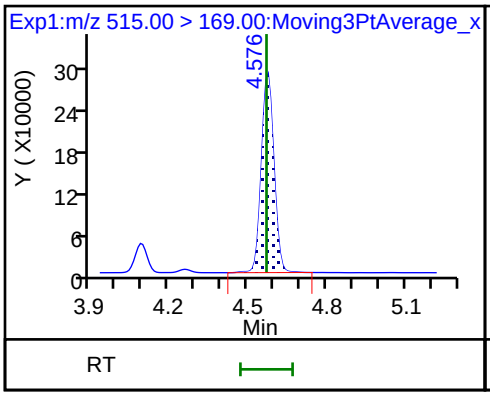
48 2-(N-methylperfluoro-1-octanesul



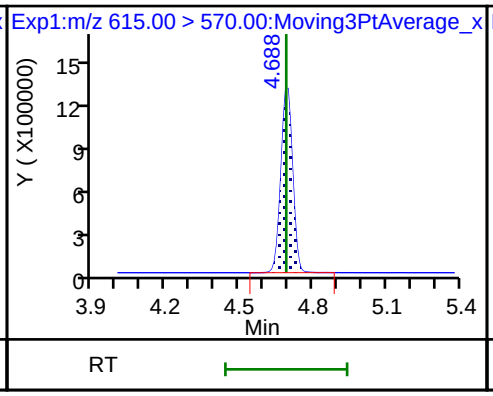
50 NMeFOSA



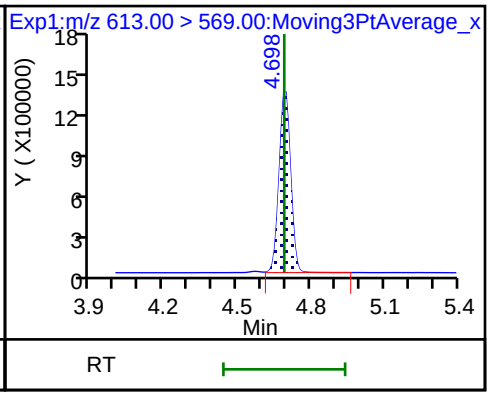
D 49 d-N-MeFOSA-M



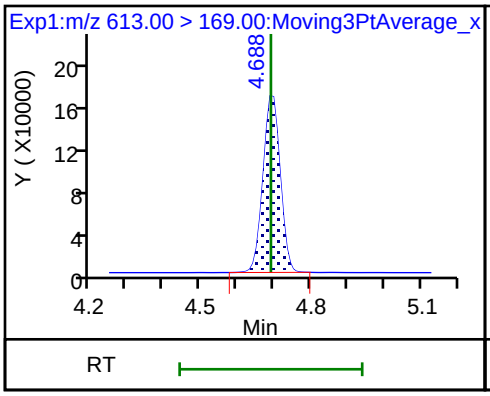
D 56 13C2 PFDoA



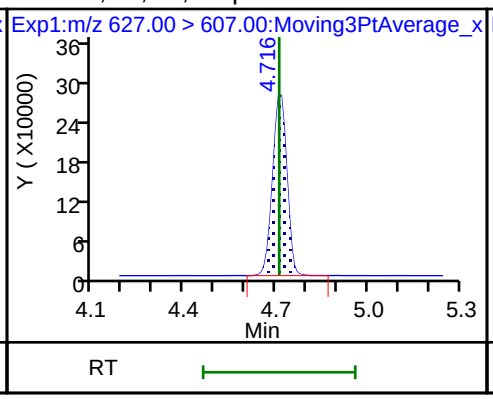
52 Perfluorododecanoic acid



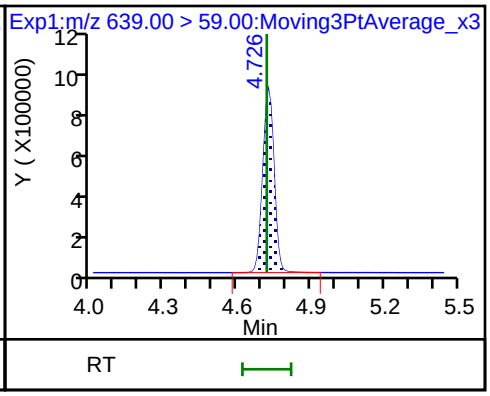
52 Perfluorododecanoic acid



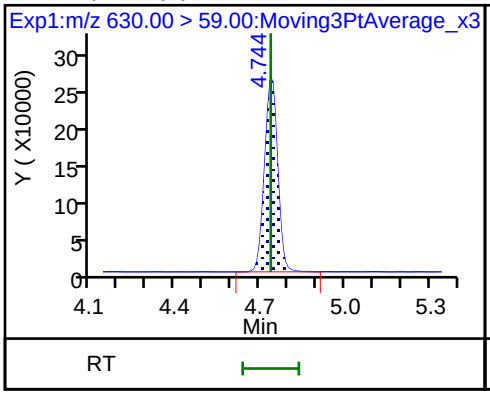
55 1H,1H,2H,2H-perfluorododecanesul



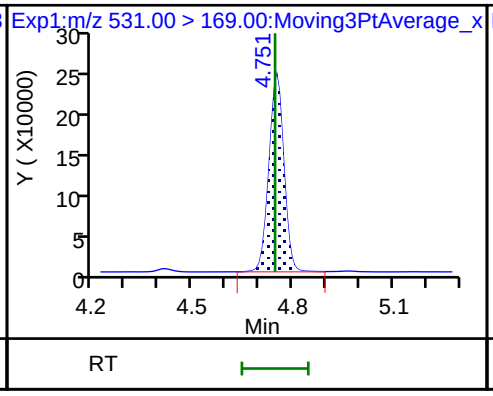
D 53 d9-N-EtFOSE-M



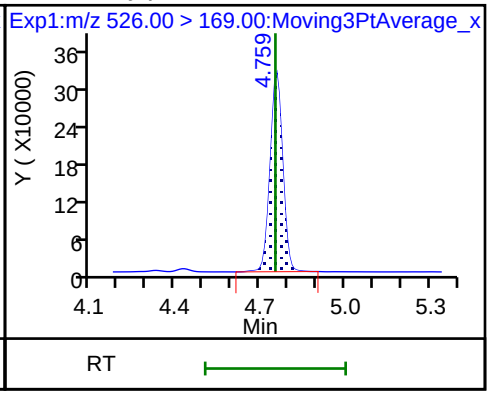
54 2-(N-ethylperfluoro-1-octanesulf



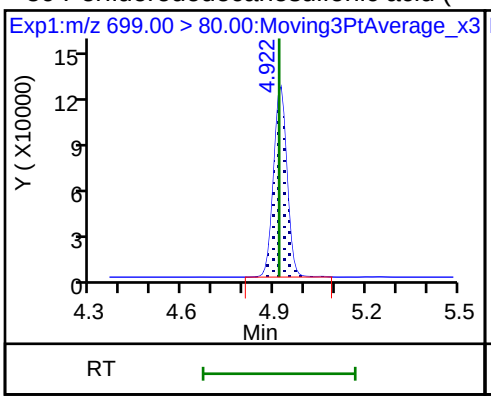
D 58 d-N-EtFOSA-M



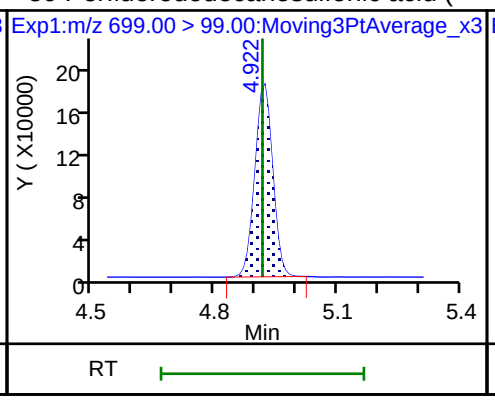
57 N-ethylperfluoro-1-octanesulfona



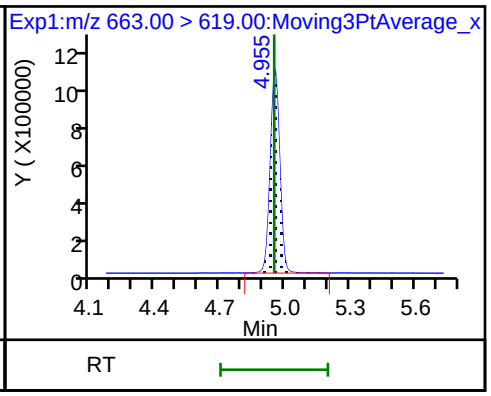
59 Perfluorododecanesulfonic acid (



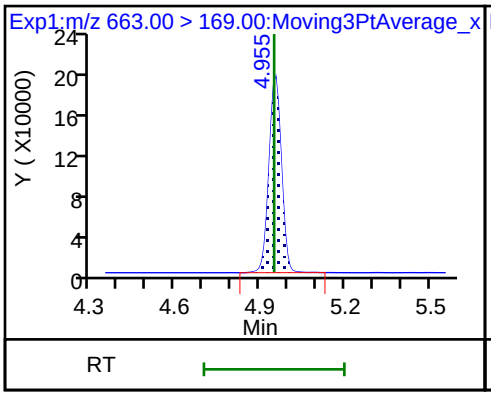
59 Perfluorododecanesulfonic acid (



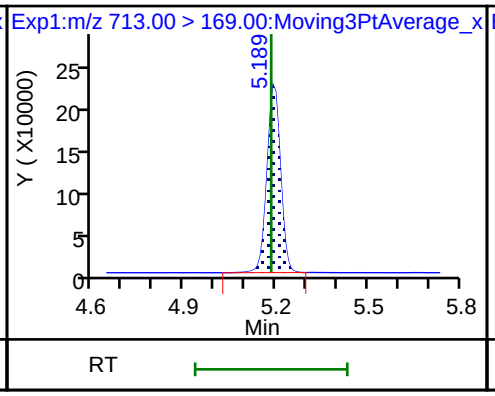
60 Perfluorotridecanoic acid



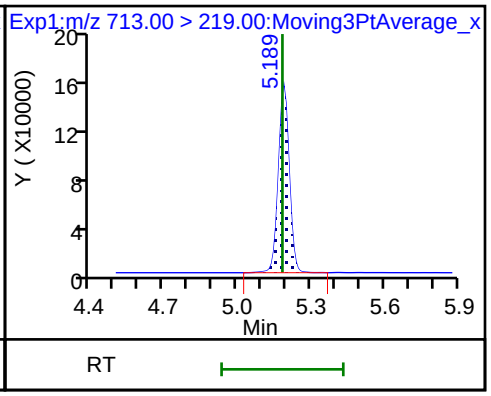
60 Perfluorotridecanoic acid



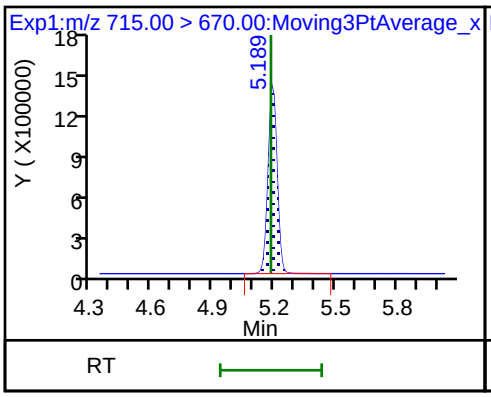
61 Perfluorotetradecanoic acid



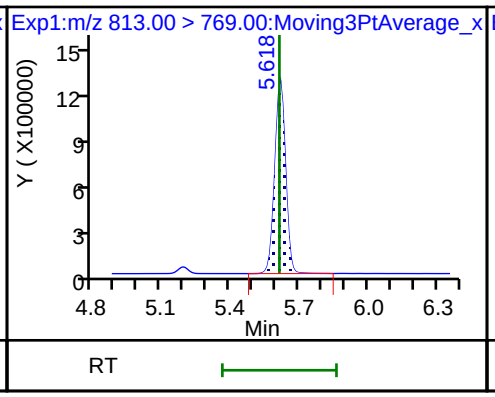
61 Perfluorotetradecanoic acid



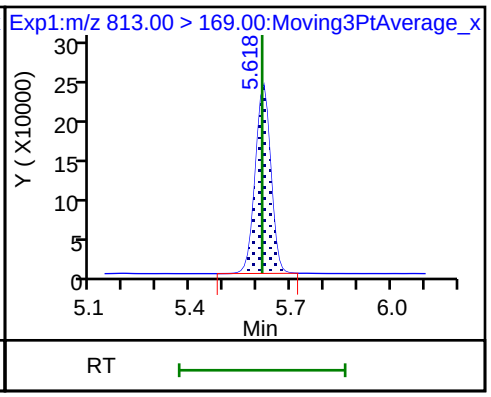
D 62 13C2 PFTeDA



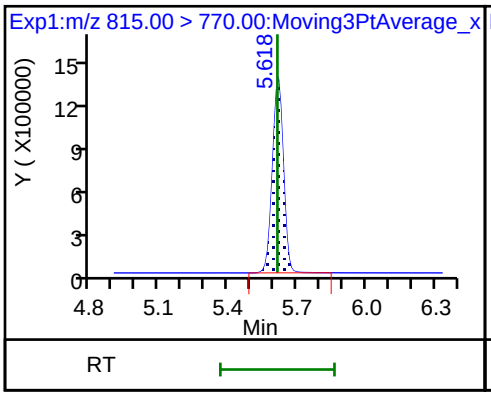
64 Perfluorohexadecanoic acid



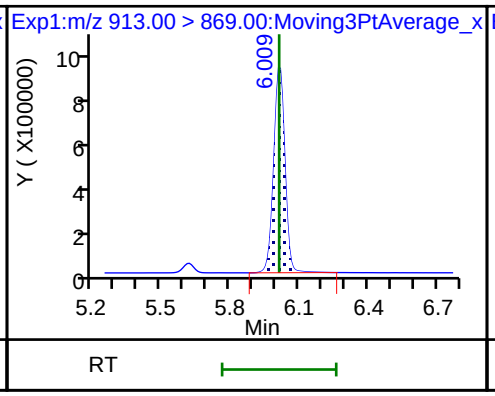
64 Perfluorohexadecanoic acid



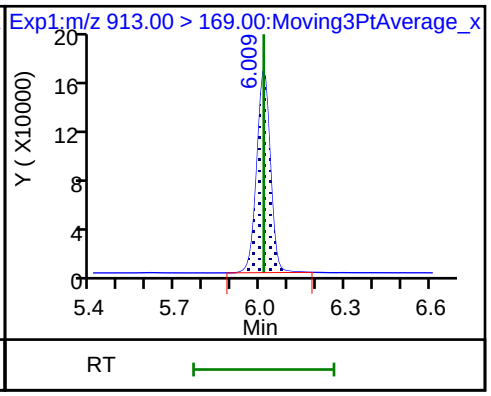
D 63 13C2 PFHxDA



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

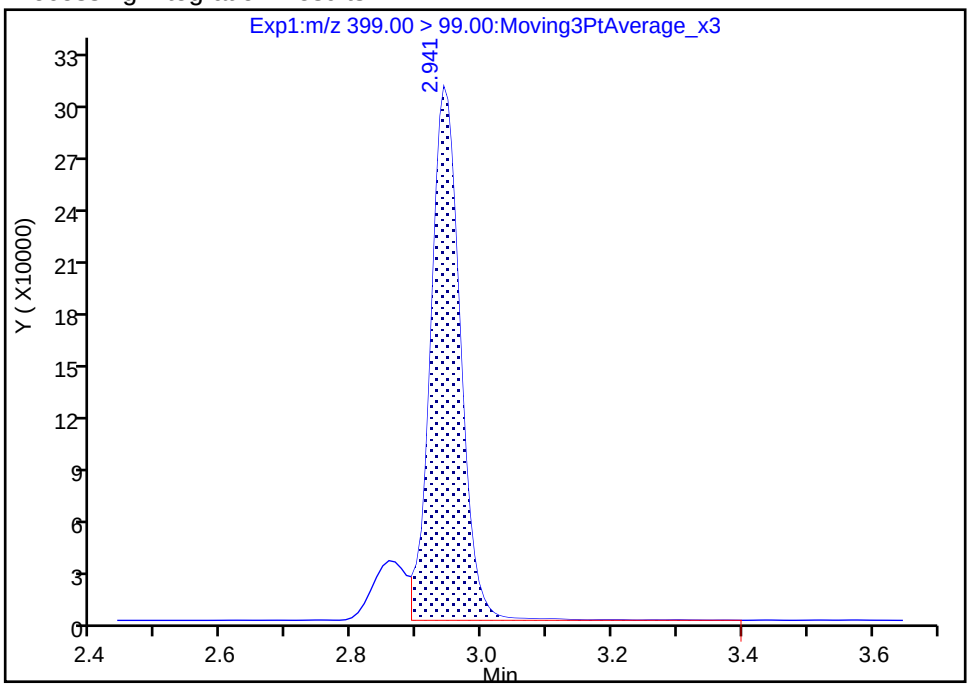
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_017.d				
Injection Date:	08-Jun-2020 17:02:32	Instrument ID:	A9		
Lims ID:	CCV L5				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	4	Worklist Smp#:	12
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

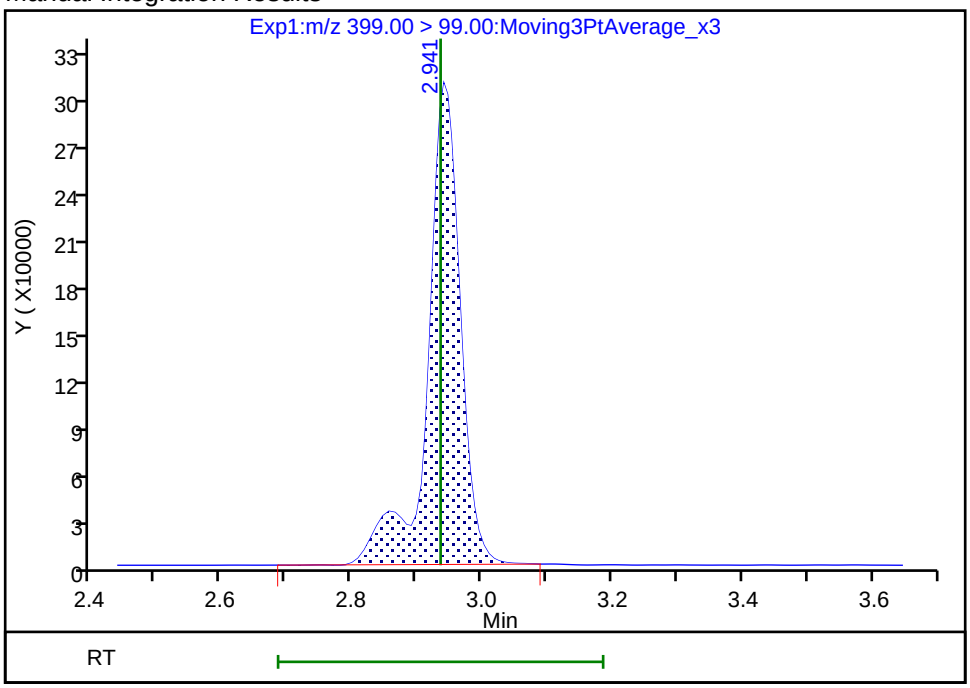
Processing Integration Results

RT: 2.94
Area: 975646
Amount: 2.194960
Amount Units: ng/ml



Manual Integration Results

RT: 2.94
Area: 1087691
Amount: 2.194960
Amount Units: ng/ml



Reviewer: mongkols, 09-Jun-2020 08:13:23

Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: Lab Sample ID: MB 320-383172/1-A

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_040.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 250(mL) Date Analyzed: 06/05/2020 05:55

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	ND		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58
375-85-9	Perfluoroheptanoic acid	ND		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	ND		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	ND		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	ND		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.299	J	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.409	J	2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9
27619-97-2	6:2 FTS	ND		20	2.0
39108-34-4	8:2 FTS	ND		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: Lab Sample ID: MB 320-383172/1-A

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_040.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 250(mL) Date Analyzed: 06/05/2020 05:55

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	78		25-150
STL01893	13C5 PFPeA	85		25-150
STL00993	13C2 PFHxA	87		25-150
STL01892	13C4 PFHpA	87		25-150
STL00990	13C4 PFOA	89		25-150
STL00995	13C5 PFNA	99		25-150
STL00996	13C2 PFDA	90		25-150
STL00997	13C2 PFUnA	79		25-150
STL00998	13C2 PFDoA	102		25-150
STL02116	13C2 PFTeDA	88		25-150
STL02337	13C3 PFBS	81		25-150
STL00994	18O2 PFHxS	85		25-150
STL00991	13C4 PFOS	83		25-150
STL01056	13C8 FOSA	81		25-150
STL02118	d3-NMeFOSAA	73		25-150
STL02117	d5-NEtFOSAA	81		25-150
STL02279	M2-6:2 FTS	86		25-150
STL02280	M2-8:2 FTS	90		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_040.d
Lims ID: MB 320-383172/1-A
Client ID:
Sample Type: MB
Inject. Date: 05-Jun-2020 05:55:29 ALS Bottle#: 27 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-383172/1-a DUE 6/16 (PFC WATER)
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 09:46:29 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: ruangyotsakuld Date: 08-Jun-2020 09:46:29
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

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	2.538	2.549	-0.011	0.626	7904392	1.96		78.5	12821	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.546	2.557	-0.011	1.003	23855	0.008148			3.7	
D 4 13C5 PFPeA										
267.90 > 223.00	2.886	2.899	-0.013	0.712	7667192	2.13		85.2	11226	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.886	2.899	-0.013	1.000	26526	0.008586			1.7	M
D 9 13C3 PFBS										
301.90 > 80.00	2.917	2.940	-0.023	0.719	4688318	1.88		80.8	11133	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.927	2.940	-0.013	1.004	3050	0.001552	Target=2.12		1.5	
298.90 > 99.00	2.927	2.940	-0.013	1.004	2165		1.41(1.06-3.19)		1.4	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.220	3.231	-0.011	0.794	640315	1.93		82.6	1288	
D 11 13C2 PFHxA										
315.00 > 270.00	3.255	3.278	-0.023	0.803	7578478	2.17		86.7	12835	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.381	3.394	-0.013	0.834	1639698	2.05		81.9	6923	
D 18 13C4 PFHpA										
367.00 > 322.00	3.656	3.672	-0.016	0.902	6042882	2.18		87.1	13209	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.656	3.672	-0.016	1.000	6833	0.002797	Target=3.85		2.2	
363.00 > 169.00	3.656	3.672	-0.016	1.000	1417		4.82(1.93-5.78)		7.8	
D 17 18O2 PFHxS										
403.00 > 84.00	3.666	3.682	-0.016	0.904	2400571	2.00		84.6	15560	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.666	3.682	-0.016	1.000	8525	0.007479	Target=2.99		41.3	
399.00 > 99.00	3.666	3.682	-0.016	1.000	4432		1.92(1.49-4.48)		29.4	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.039	4.042	-0.003	0.996	752421	2.05		86.4	3868	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.039	4.042	-0.003	1.000	1499	0.002407			27.2	
D 25 13C4 PFOA										
417.00 > 372.00	4.055	4.059	-0.004	1.000	5597224	2.23		89.2	12240	
* 23 13C2 PFOA										
415.00 > 370.00	4.055	4.059	-0.004		6363256	2.50			13377	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.055	4.059	-0.004	1.000	19772	0.008358	Target=2.79		1.5	M
413.00 > 169.00	4.055	4.059	-0.004	1.000	6141		3.22(1.39-4.18)		26.6	M
D 27 13C4 PFOS										
503.00 > 80.00	4.411	4.405	0.006	1.088	1840195	1.98		82.7	10029	
D 30 13C5 PFNA										
468.00 > 423.00	4.427	4.420	0.007	1.092	4731187	2.46		98.6	9265	
31 Perfluorononanoic acid										
463.00 > 419.00	4.427	4.420	0.007	1.000	3262	0.001700	Target=7.17		0.7	
463.00 > 169.00	4.427	4.420	0.007	1.000	524		6.23(3.58-10.75)		5.0	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.614	4.598	0.016	1.046	1127	0.000536			6.7	
D 33 13C8 FOSA										
506.00 > 78.00	4.766	4.752	0.014	1.175	3738336	2.02		80.7	7387	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.775	4.752	0.023	1.002	13416	0.0102			109	
D 39 13C2 PFDA										
515.00 > 470.00	4.766	4.752	0.014	1.175	4139347	2.26		90.5	9298	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.775	4.761	0.014	1.002	1470	0.002303			17.1	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.766	4.761	0.005	1.175	937163	2.14		89.6	4220	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.924	4.907	0.017	1.214	1247746	1.83		73.0	1622	
41 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.933	4.917	0.016	1.002	5929	0.0163			16.0	M
D 43 13C2 PFUnA										
565.00 > 520.00	5.073	5.066	0.007	1.251	3083250	1.98		79.0	9977	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.082	5.066	0.016	1.253	1407752	2.02		80.9	1747	
46 N-ethylperfluorooctanesulfonamid										M
584.00 > 419.00	5.082	5.075	0.007	1.000	4768	0.0120			34.2	M
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.209	5.193	0.016	1.181	3379	0.001701			14.4	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.217	5.202	0.015	1.287	1083766	2.32		18.6	1405	

Report Date: 08-Jun-2020 09:46:30 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_040.d
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.236	5.220	0.016	1.291	757520	1.29		51.8	78.9	
D 56 13C2 PFDoA										
615.00 > 570.00	5.356	5.340	0.016	1.321	3513833	2.54		102	10163	
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.356	5.358	-0.002	1.124	415	0.000824			6.4	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.381	5.367	0.014	1.327	1043096	1.82		14.6	1451	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.392	5.375	0.017	1.002	976	0.0114			3.0	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.414	5.394	0.020	1.335	453423	0.7632		30.5	285	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.838	5.830	0.008	1.440	1983690	2.19		87.8	7071	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.254	6.245	0.009	1.542	1562805	2.09		83.4	4729	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.254	6.255	-0.001	1.000	16265	0.007275	Target=7.53		2.9	
813.00 > 169.00	6.254	6.255	-0.001	1.000	2224		7.31(3.77-11.30)		40.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 08-Jun-2020 09:46:30 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_040.d

Injection Date: 05-Jun-2020 05:55:29 Instrument ID: A15

Lims ID: MB 320-383172/1-A

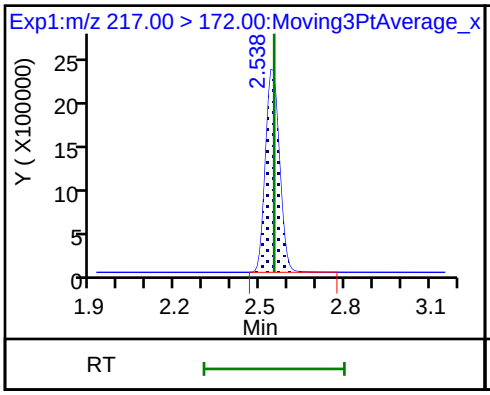
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 27 Worklist Smp#: 2

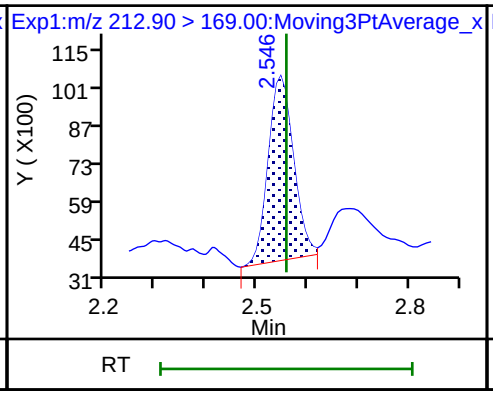
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

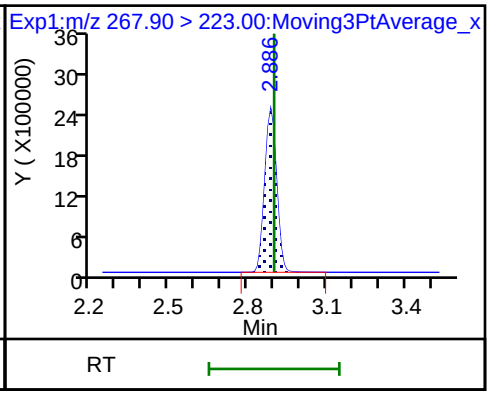
D 1 13C4 PFBA



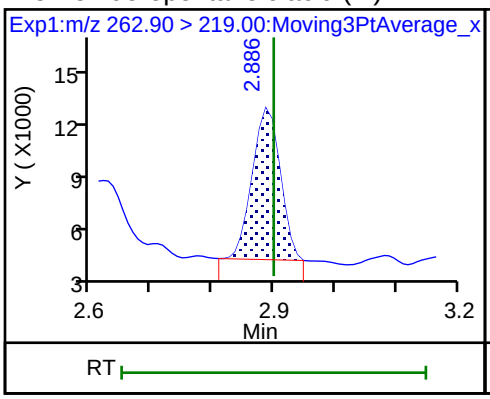
2 Perfluorobutanoic acid



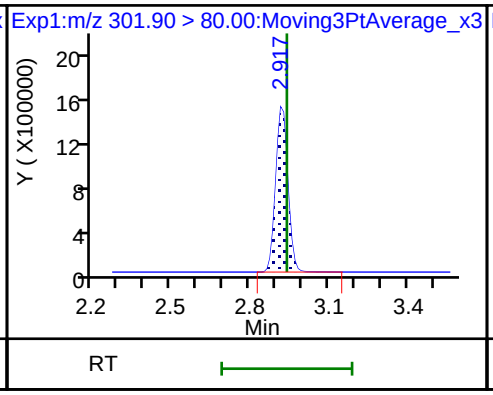
D 4 13C5 PFPeA



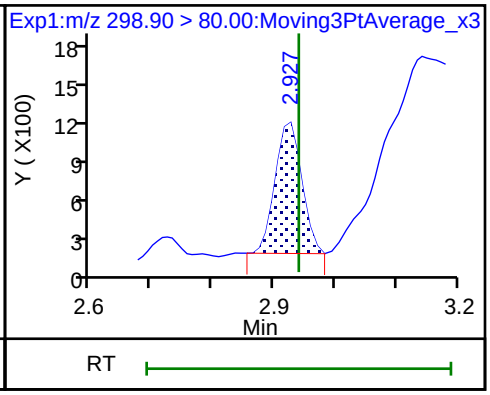
5 Perfluoropentanoic acid (M)



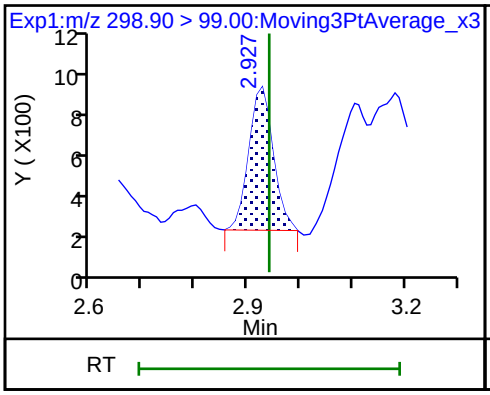
D 9 13C3 PFBS



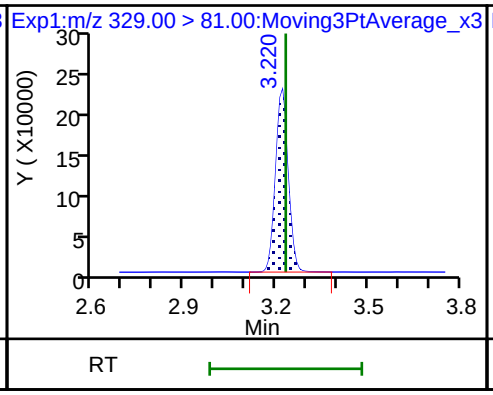
6 Perfluorobutanesulfonic acid



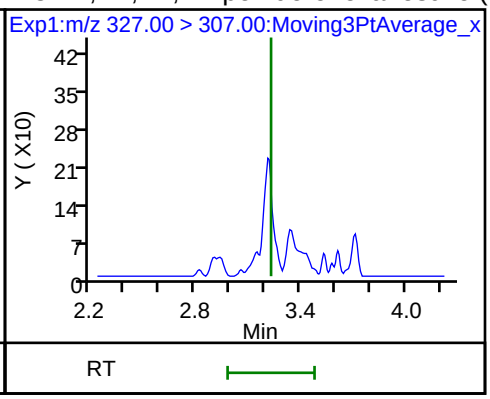
6 Perfluorobutanesulfonic acid



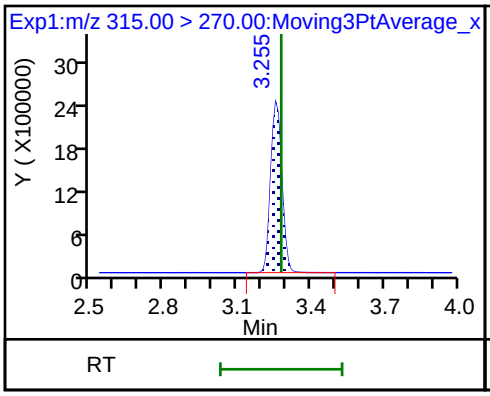
D 7 M2-4:2 FTS



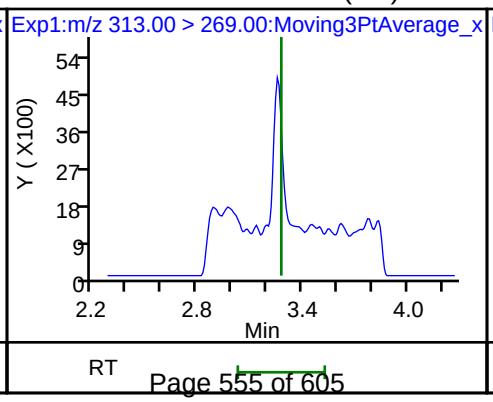
8 1H,1H,2H,2H-perfluorohexanesulfo (ND)



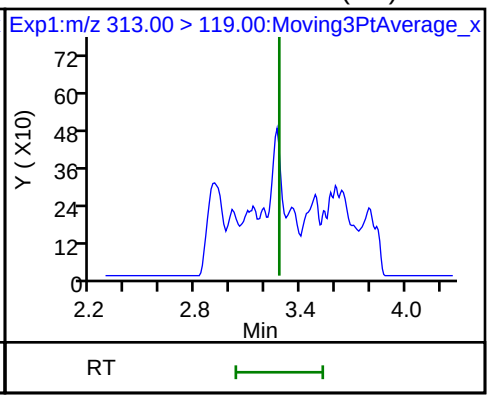
D 11 13C2 PFHxA



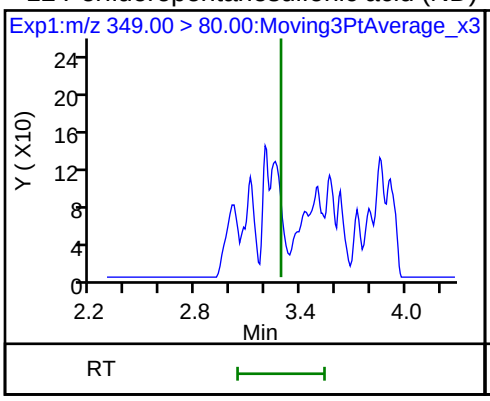
10 Perfluorohexanoic acid (ND)



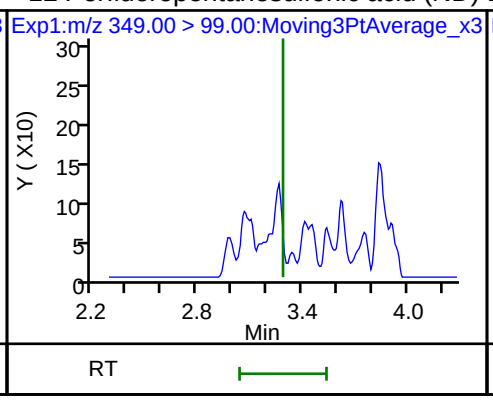
10 Perfluorohexanoic acid (ND)



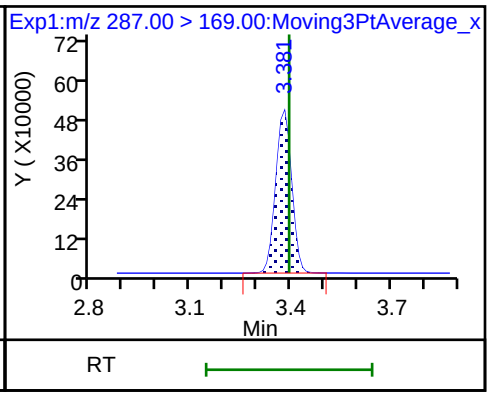
12 Perfluoropentanesulfonic acid (ND)



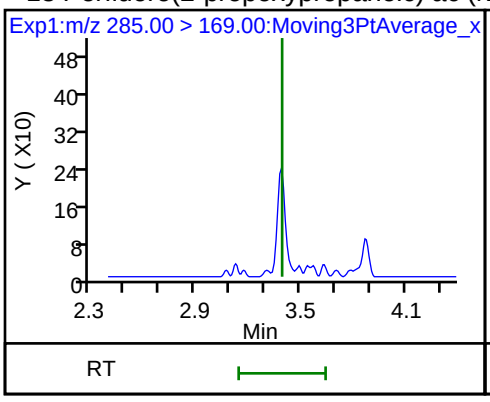
12 Perfluoropentanesulfonic acid (ND) D



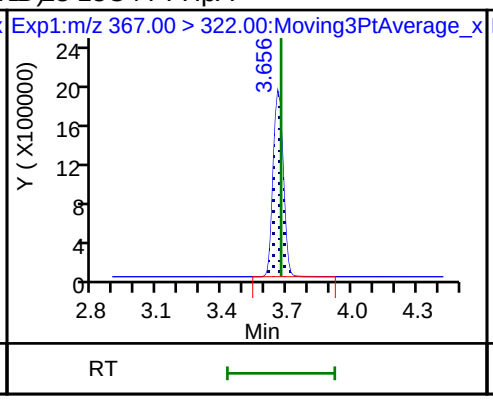
14 13C3 HFPO-DA



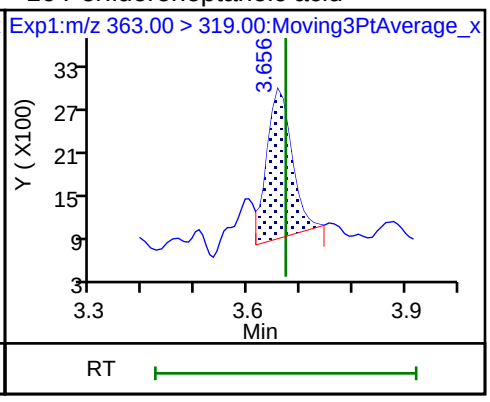
13 Perfluoro(2-propoxypropanoic) ac (ND)



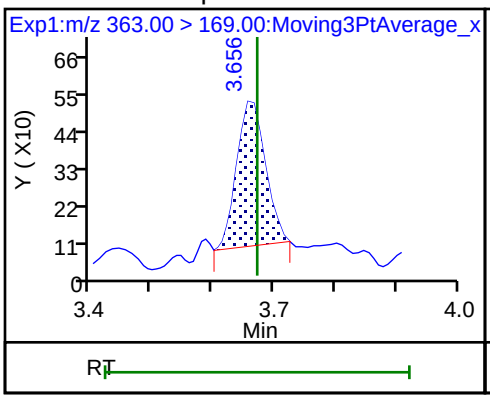
18 13C4 PFHpA



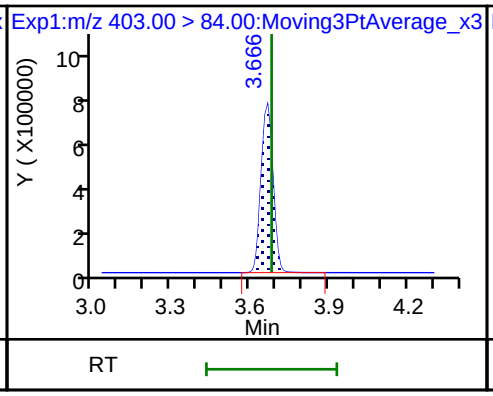
16 Perfluoroheptanoic acid



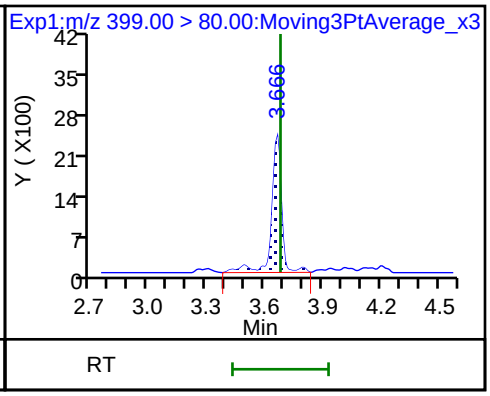
16 Perfluoroheptanoic acid



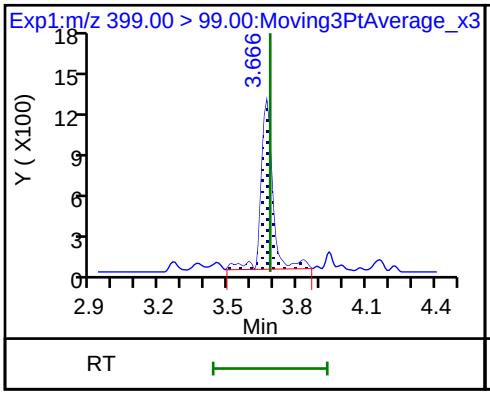
D 17 18O2 PFHxS



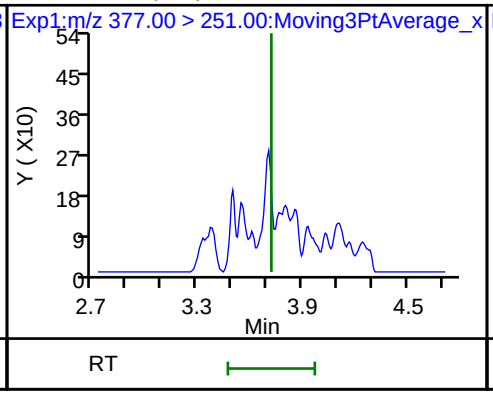
15 Perfluorohexanesulfonic acid



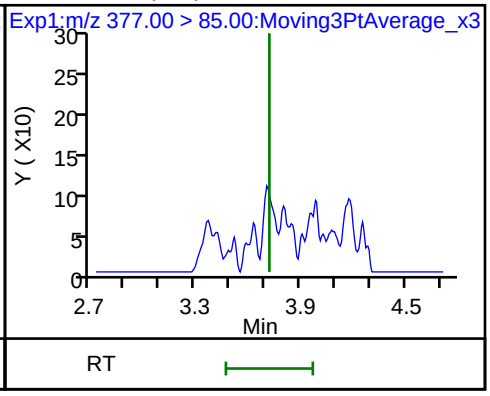
15 Perfluorohexanesulfonic acid



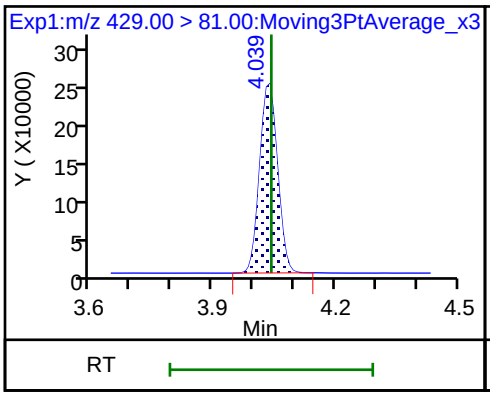
19 DONA (ND)



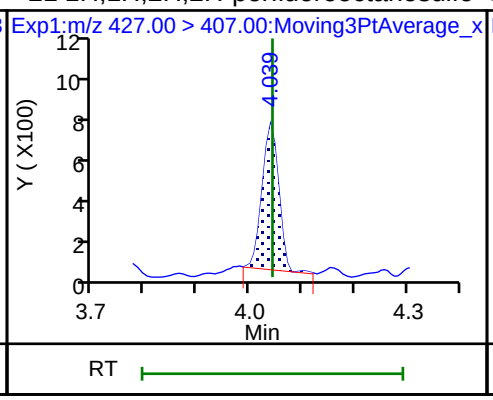
19 DONA (ND)



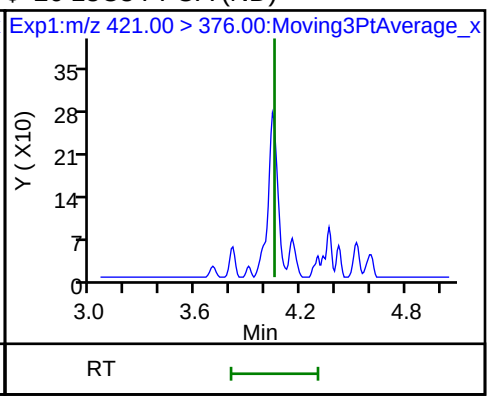
D 20 M2-6:2 FTS



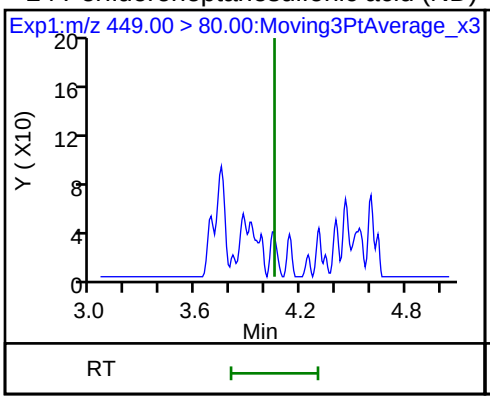
21 1H,1H,2H,2H-perfluorooctanesulfo



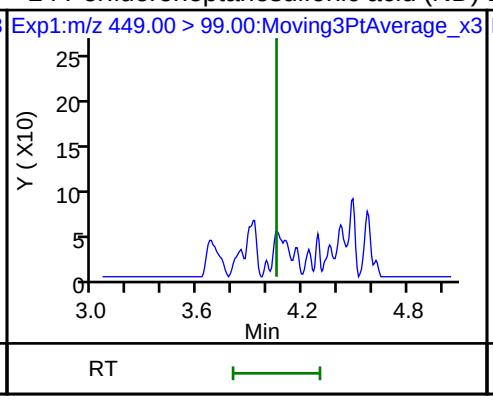
$ 26 13C8 PFOA (ND)



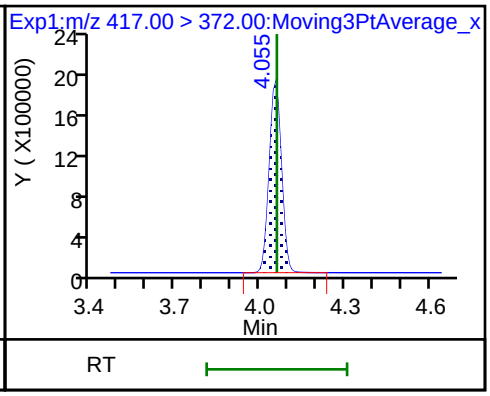
24 Perfluoroheptanesulfonic acid (ND)



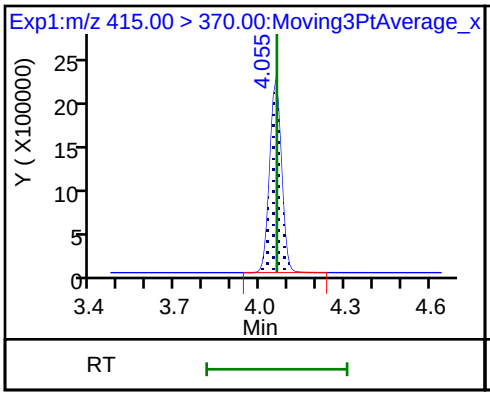
24 Perfluoroheptanesulfonic acid (ND)



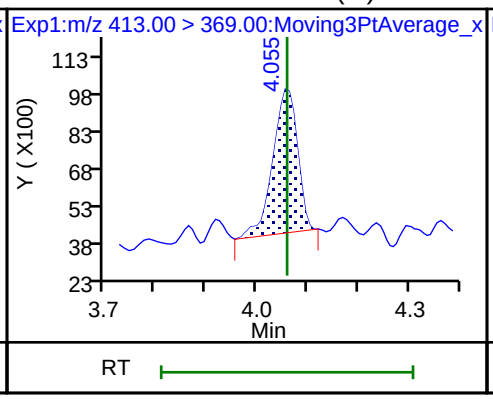
D 25 13C4 PFOA



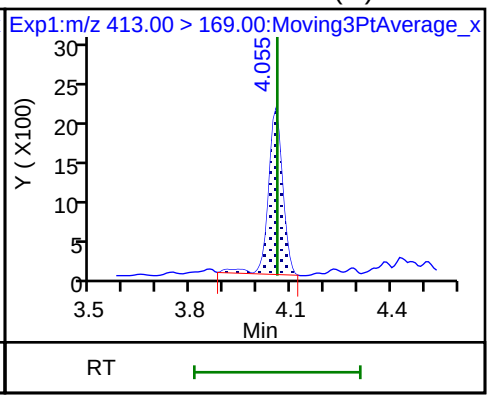
* 23 13C2 PFOA



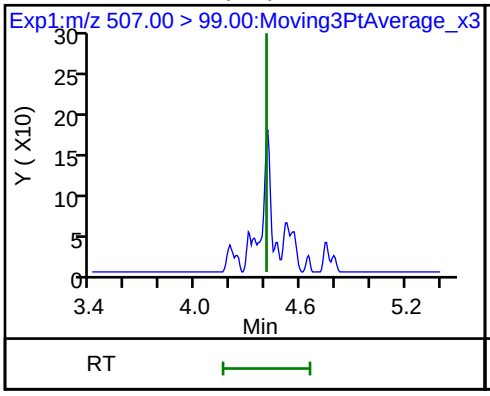
22 Perfluorooctanoic acid (M)



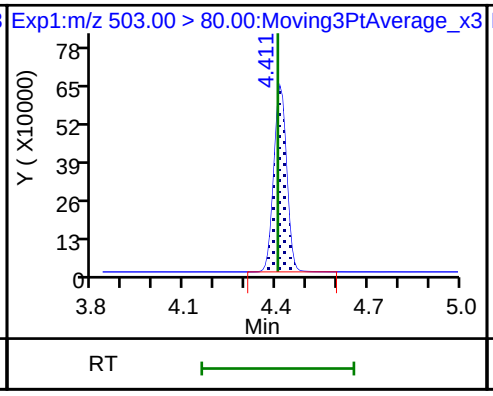
22 Perfluorooctanoic acid (M)



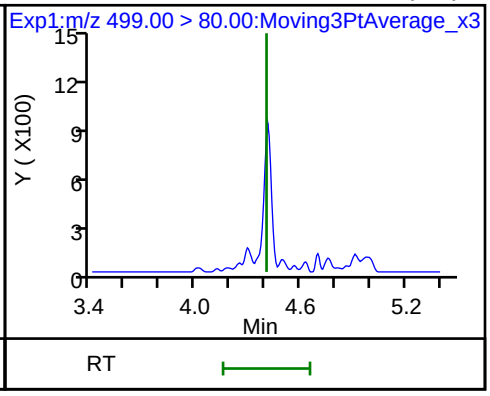
$ 28 13C8 PFOS (ND)



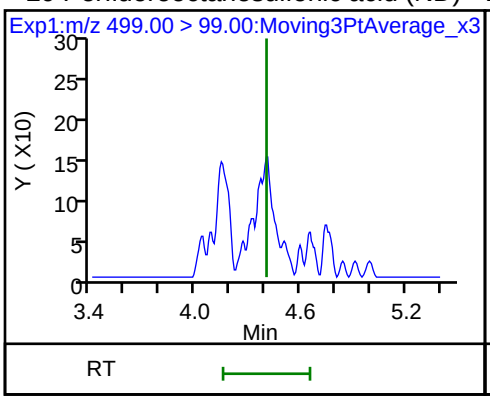
D 27 13C4 PFOS



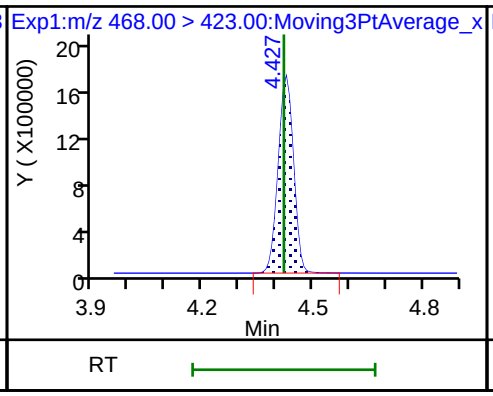
29 Perfluorooctanesulfonic acid (ND)



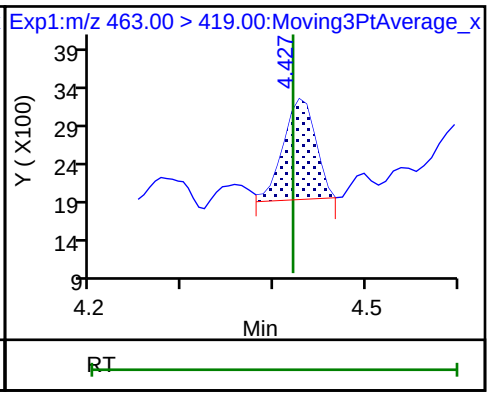
29 Perfluorooctanesulfonic acid (ND)



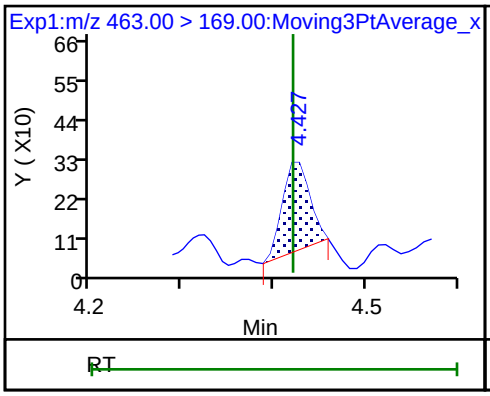
D 30 13C5 PFNA



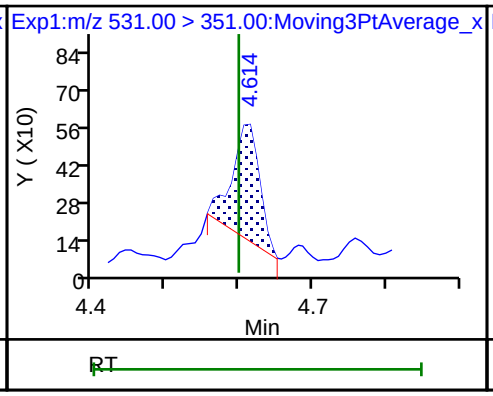
31 Perfluorononanoic acid



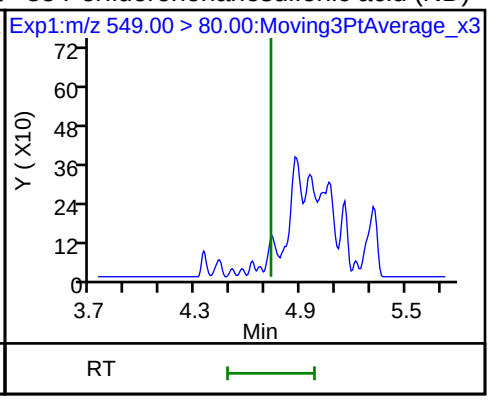
31 Perfluorononanoic acid



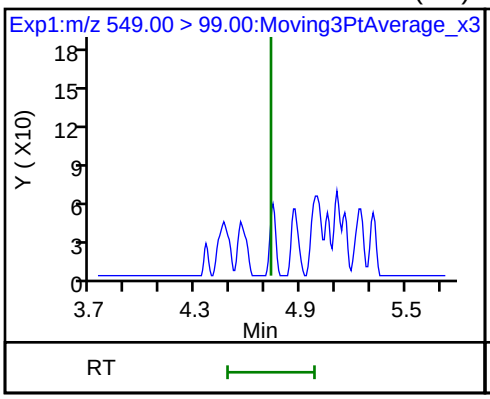
32 9-Chlorohexadecafluoro-3-oxanona



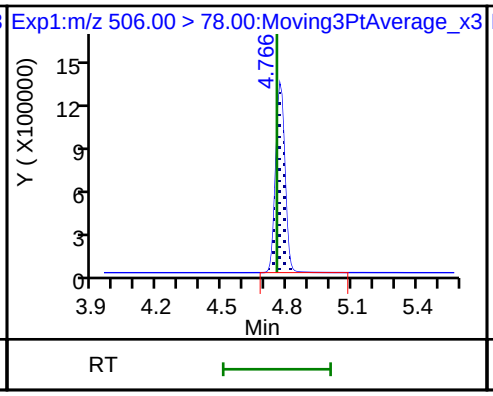
35 Perfluorononanesulfonic acid (ND)



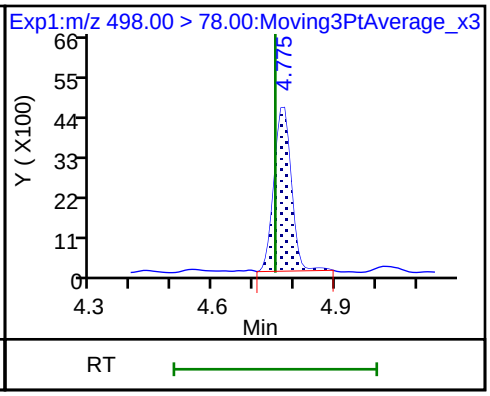
35 Perfluorononanesulfonic acid (ND)



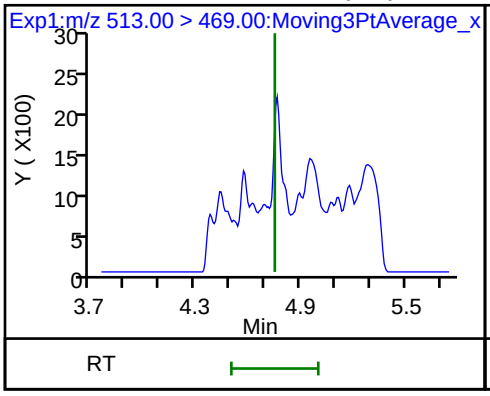
D 33 13C8 FOSA



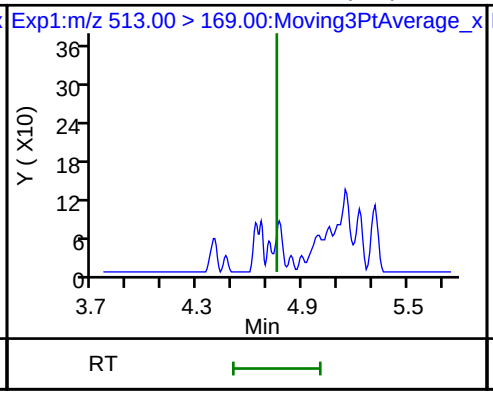
34 Perfluorooctanesulfonamide



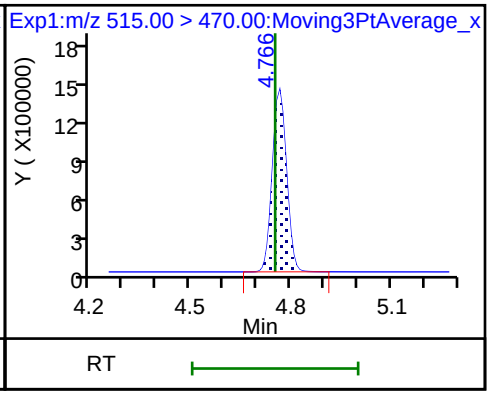
37 Perfluorodecanoic acid (ND)



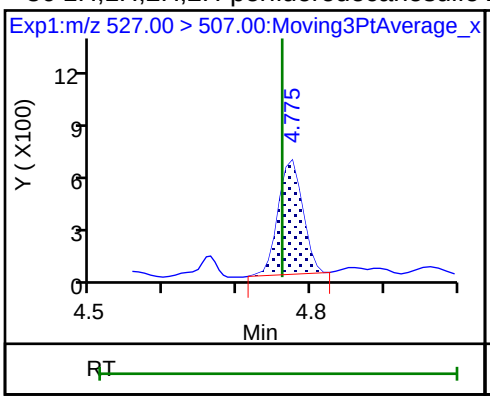
37 Perfluorodecanoic acid (ND)



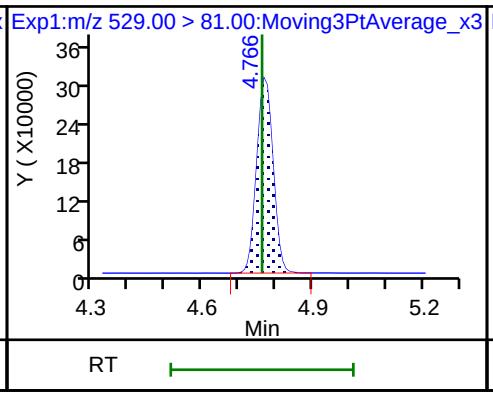
D 39 13C2 PFDA



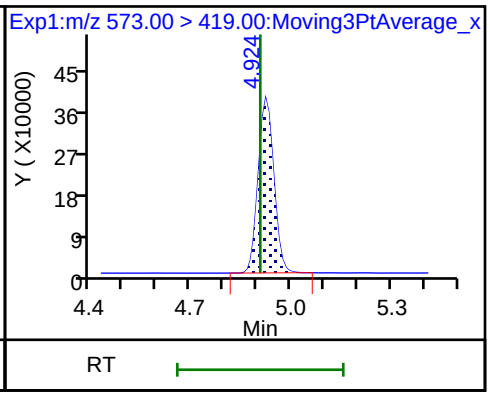
36 1H,1H,2H,2H-perfluorodecanesulfo



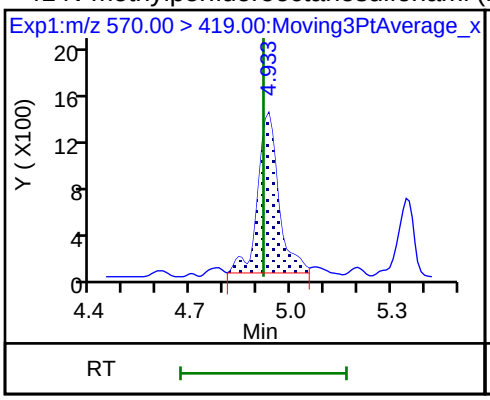
D 38 M2-8:2 FTS



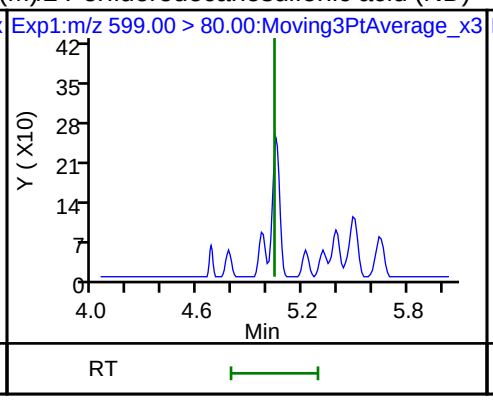
D 40 d3-NMeFOSAA



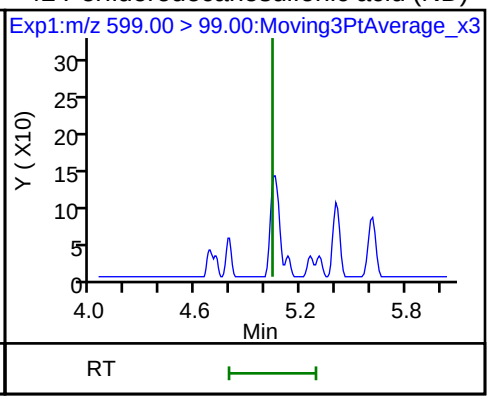
41 N-methylperfluorooctanesulfonami (M)



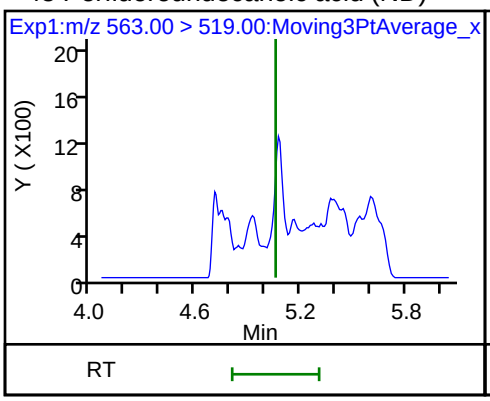
42 Perfluorodecanesulfonic acid (ND)



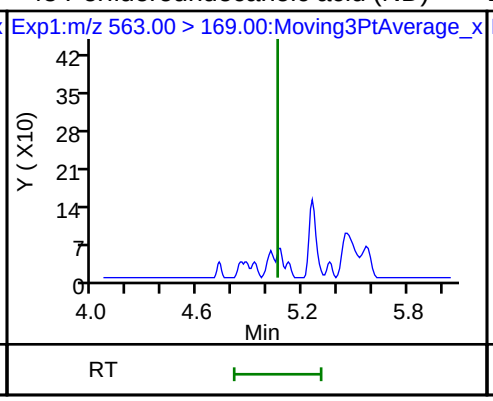
42 Perfluorodecanesulfonic acid (ND)



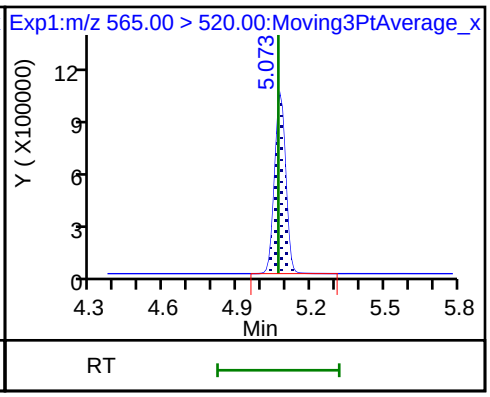
45 Perfluoroundecanoic acid (ND)



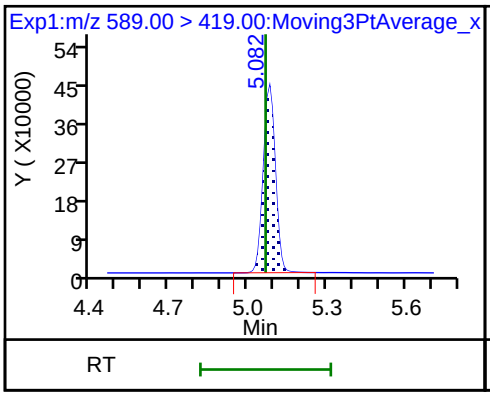
45 Perfluoroundecanoic acid (ND)



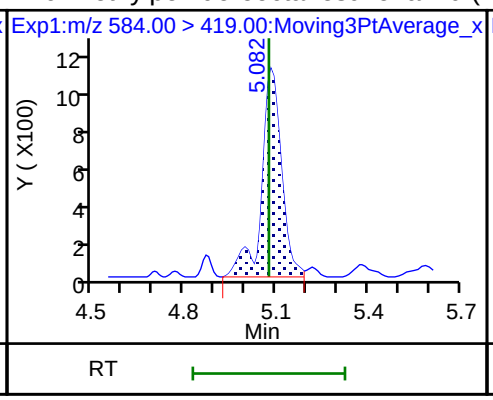
D 43 13C2 PFUnA



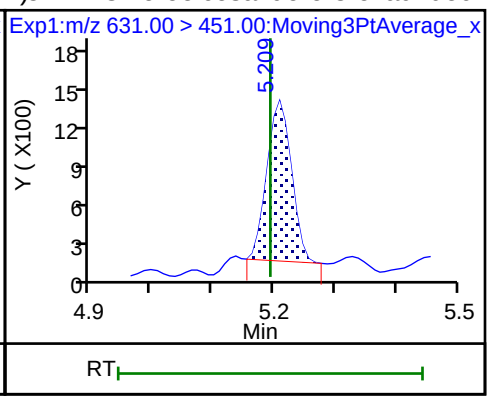
D 44 d5-NEtFOSAA



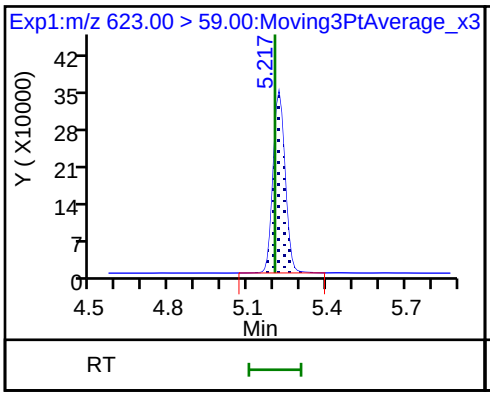
46 N-ethylperfluorooctanesulfonamid (M)



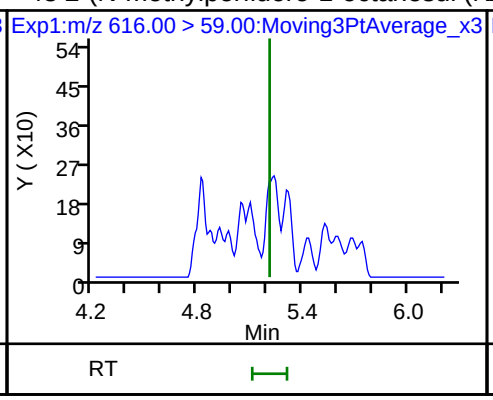
51 11-Chloroeicosafluoro-3-oxaundec



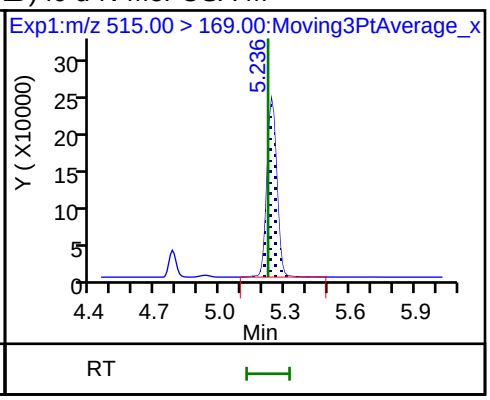
D 47 d7-N-MeFOSE-M



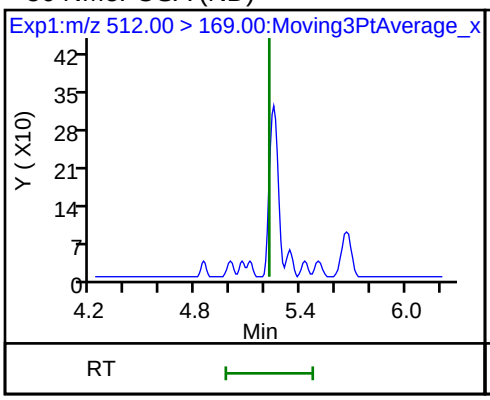
48 2-(N-methylperfluoro-1-octanesul (ND)



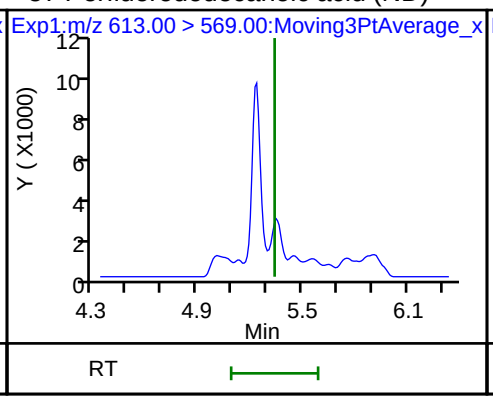
D 49 d-N-MeFOSA-M



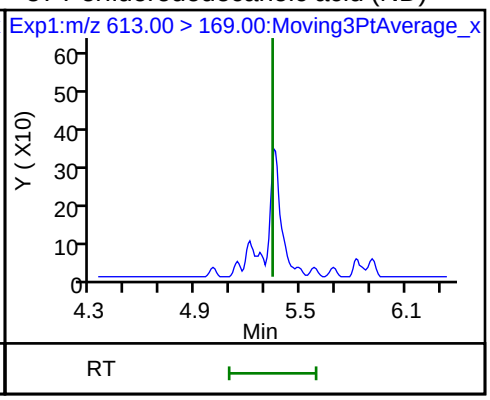
50 NMeFOSA (ND)



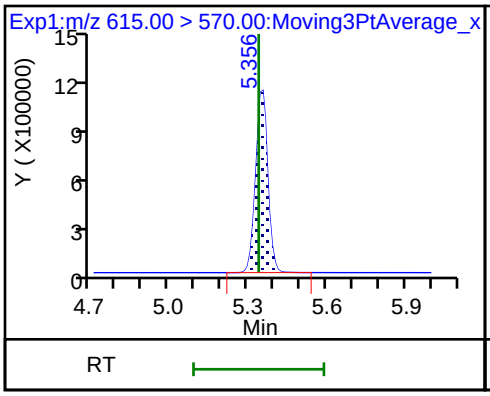
57 Perfluorododecanoic acid (ND)



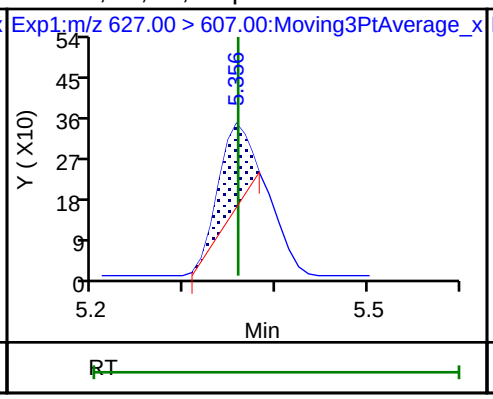
57 Perfluorododecanoic acid (ND)



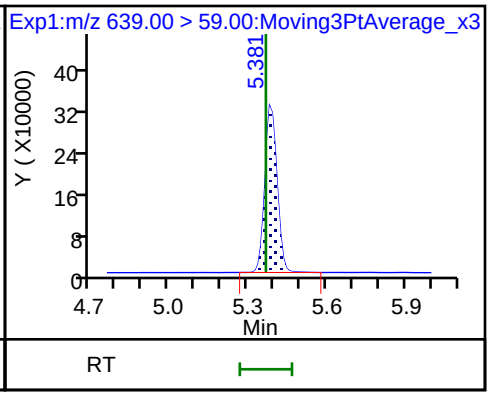
D 56 13C2 PFDoA



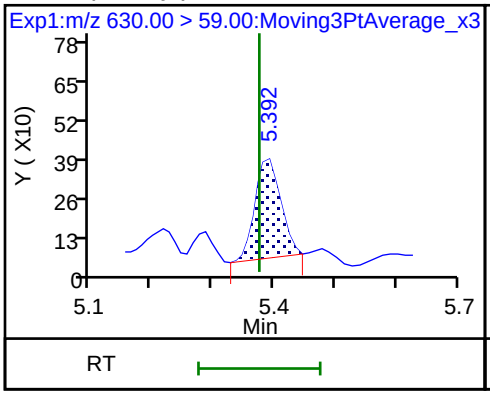
58 1H,1H,2H,2H-perfluorododecanesul



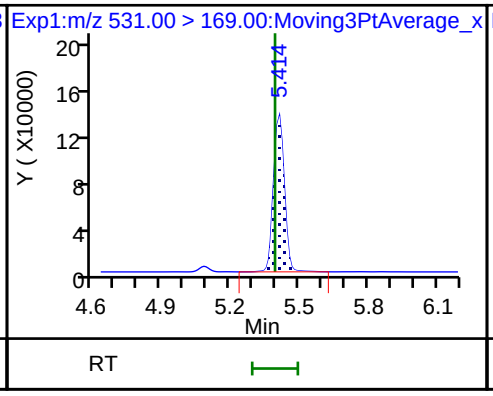
D 52 d9-N-EtFOSE-M



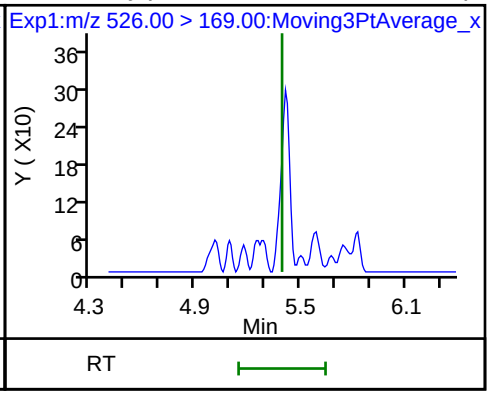
53 2-(N-ethylperfluoro-1-octanesulf



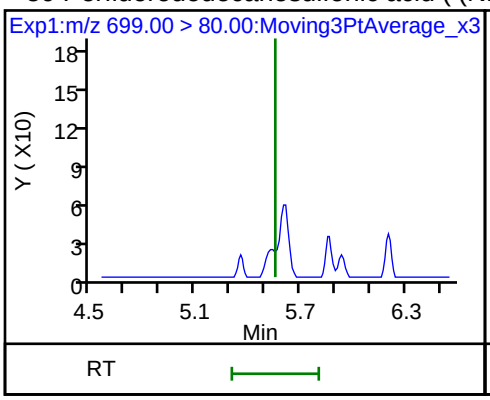
D 54 d-N-EtFOSA-M



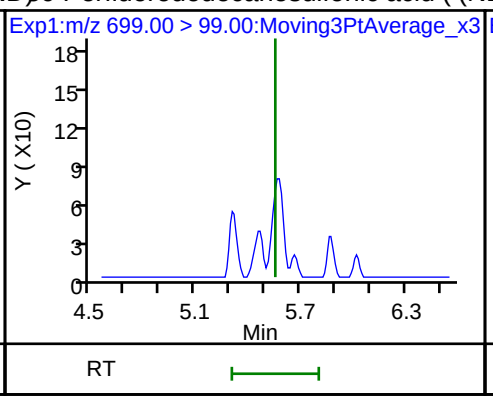
55 N-ethylperfluoro-1-octanesulfona (ND)



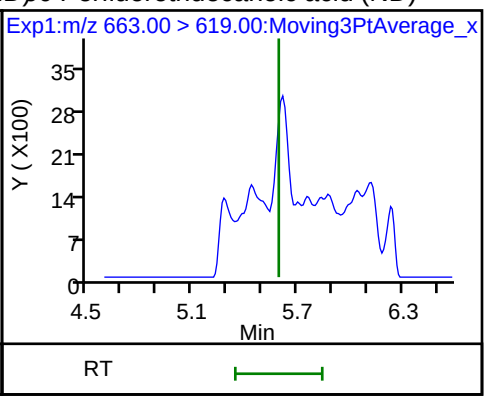
59 Perfluorododecanesulfonic acid ((ND)



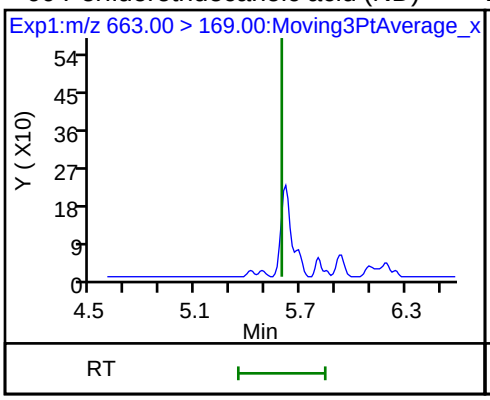
59 Perfluorododecanesulfonic acid ((ND)



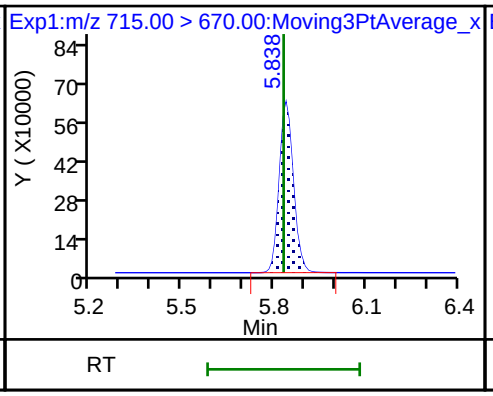
60 Perfluorotridecanoic acid (ND)



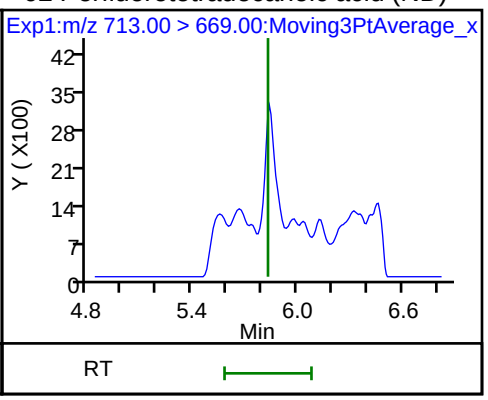
60 Perfluorotridecanoic acid (ND)



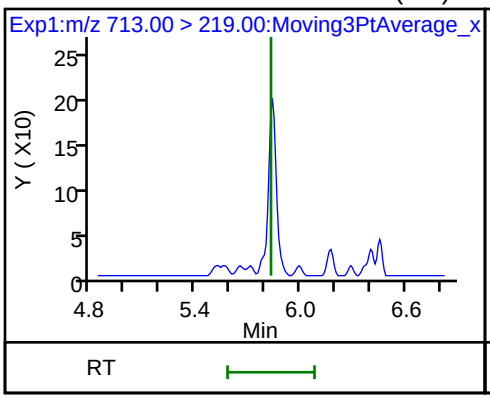
D 61 13C2 PFTeDA



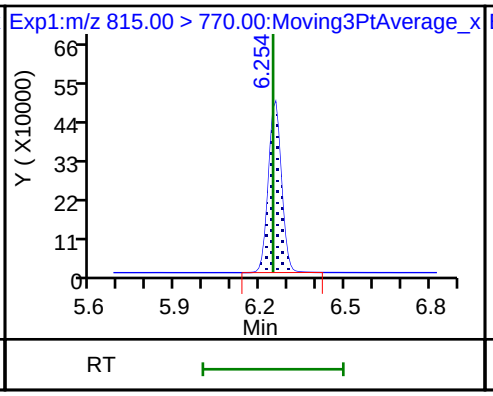
62 Perfluorotetradecanoic acid (ND)



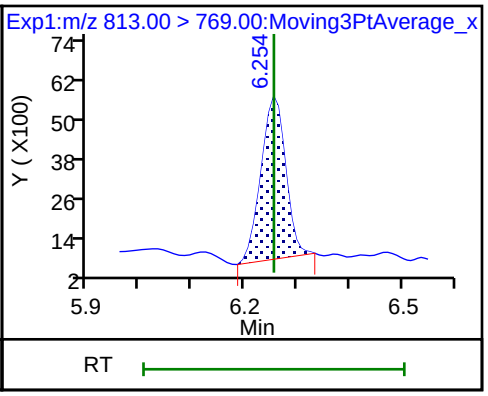
62 Perfluorotetradecanoic acid (ND)



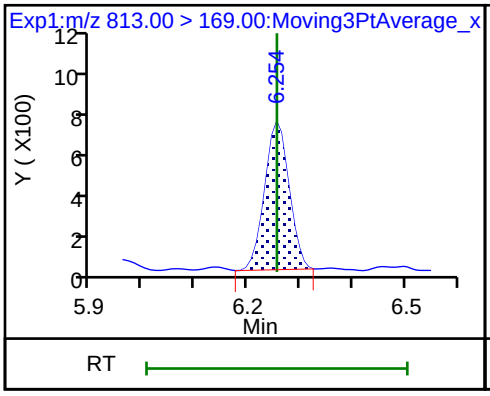
D 64 13C2 PFHxDA



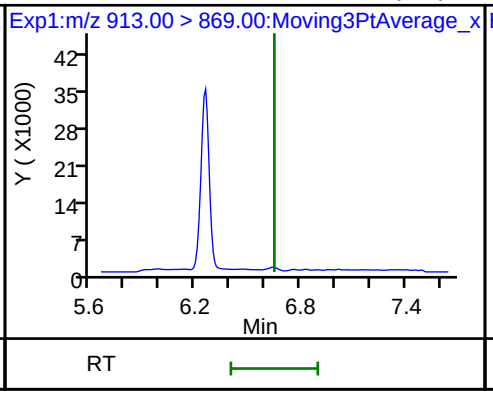
63 Perfluorohexadecanoic acid



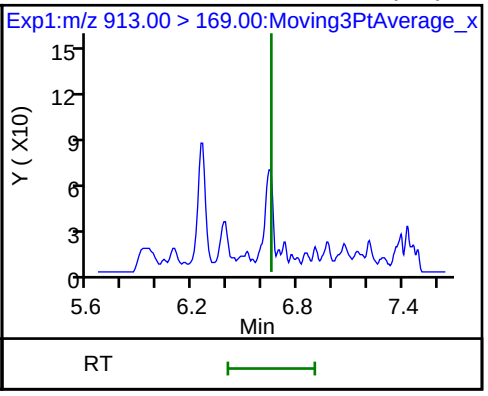
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid (ND)



65 Perfluorooctadecanoic acid (ND)



Eurofins TestAmerica, Sacramento

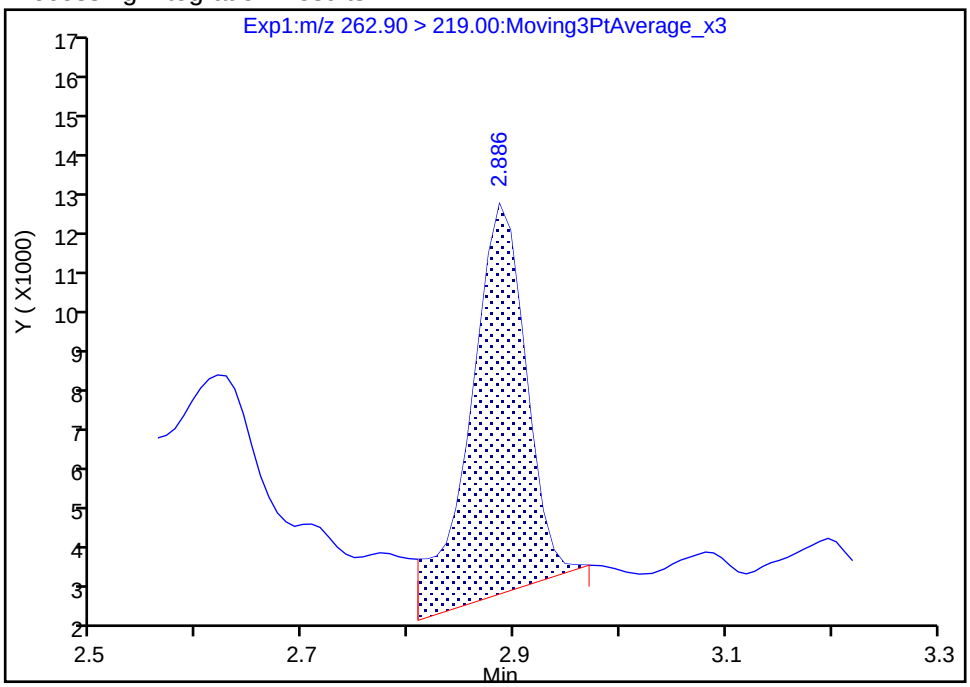
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_040.d
Injection Date: 05-Jun-2020 05:55:29 Instrument ID: A15
Lims ID: MB 320-383172/1-A
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 27 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

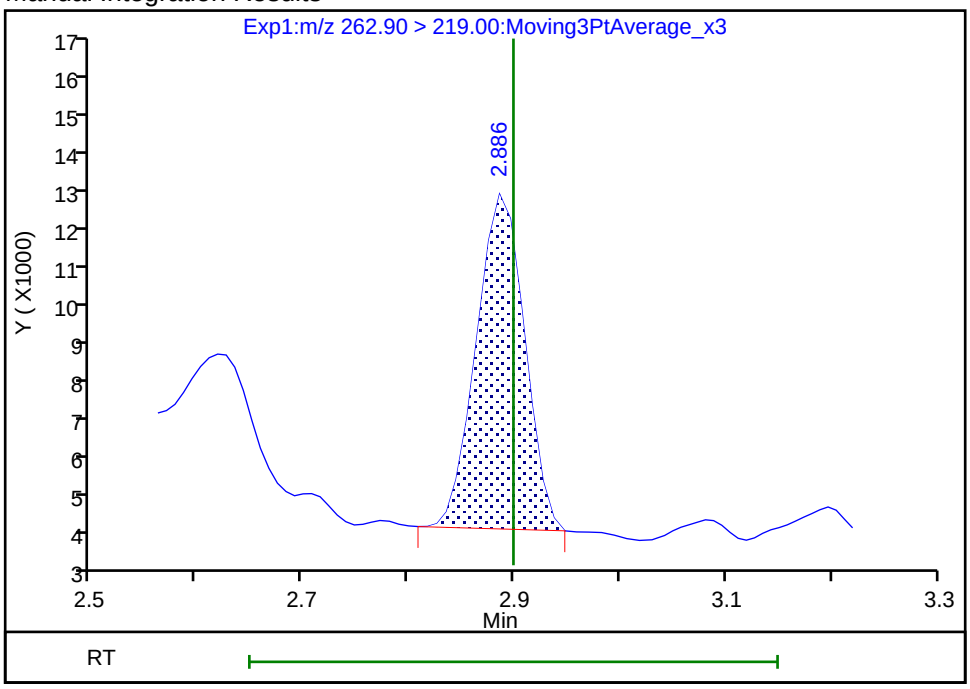
Processing Integration Results

RT: 2.89
Area: 33525
Amount: 0.010851
Amount Units: ng/ml



Manual Integration Results

RT: 2.89
Area: 26526
Amount: 0.008586
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:45:11
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

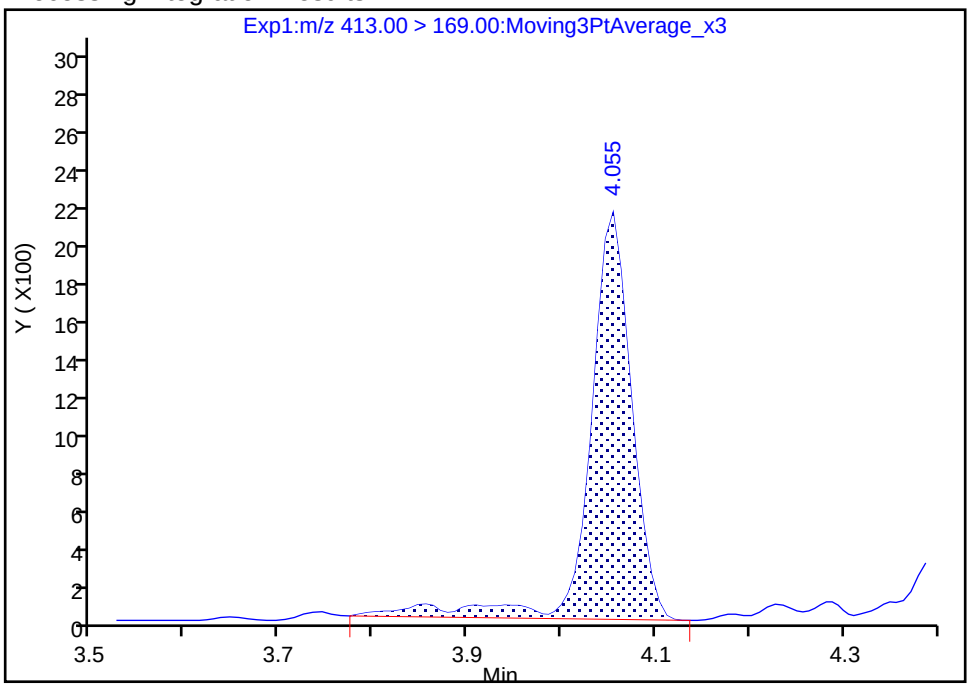
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_040.d				
Injection Date:	05-Jun-2020 05:55:29	Instrument ID:	A15		
Lims ID:	MB 320-383172/1-A				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	27	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

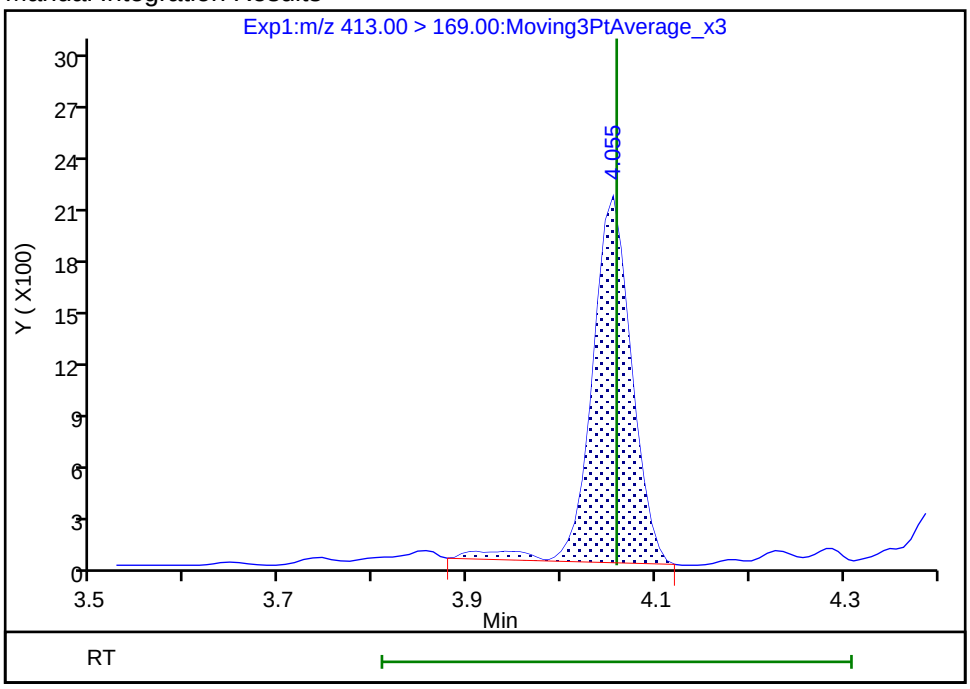
Processing Integration Results

RT: 4.05
Area: 6553
Amount: 0.041050
Amount Units: ng/ml



Manual Integration Results

RT: 4.05
Area: 6141
Amount: 0.008358
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:45:32

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

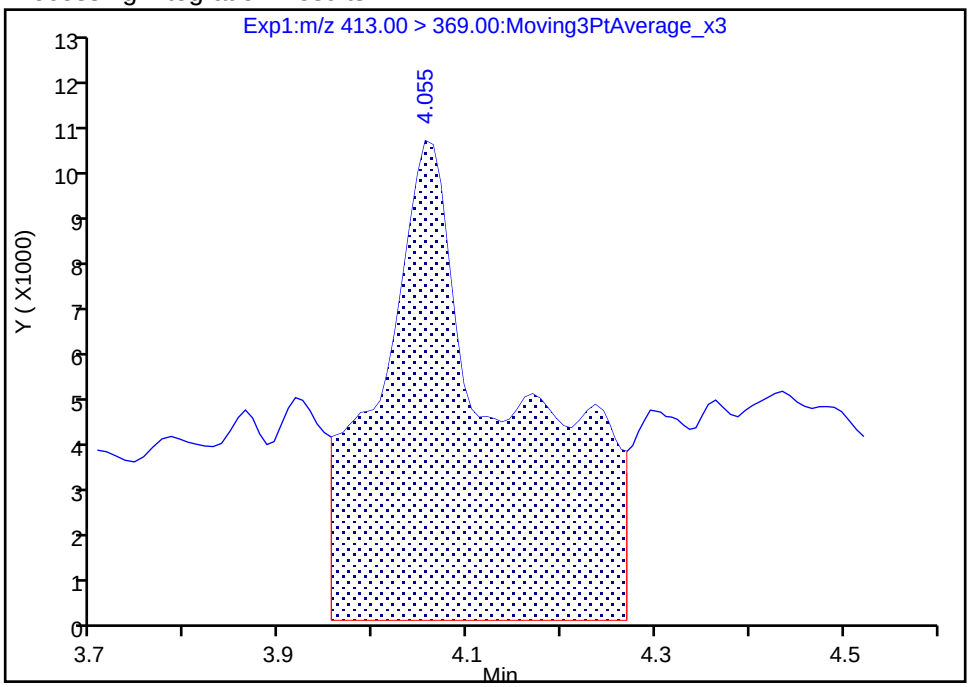
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_040.d				
Injection Date:	05-Jun-2020 05:55:29	Instrument ID:	A15		
Lims ID:	MB 320-383172/1-A				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	27	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

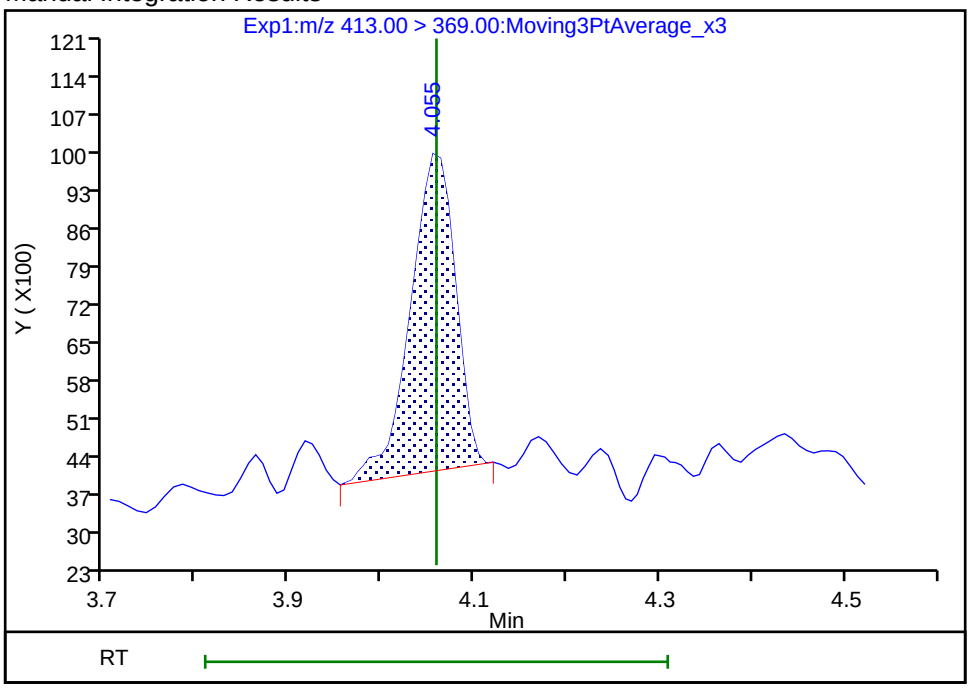
Processing Integration Results

RT: 4.05
Area: 97104
Amount: 0.041050
Amount Units: ng/ml



Manual Integration Results

RT: 4.05
Area: 19772
Amount: 0.008358
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:45:37

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

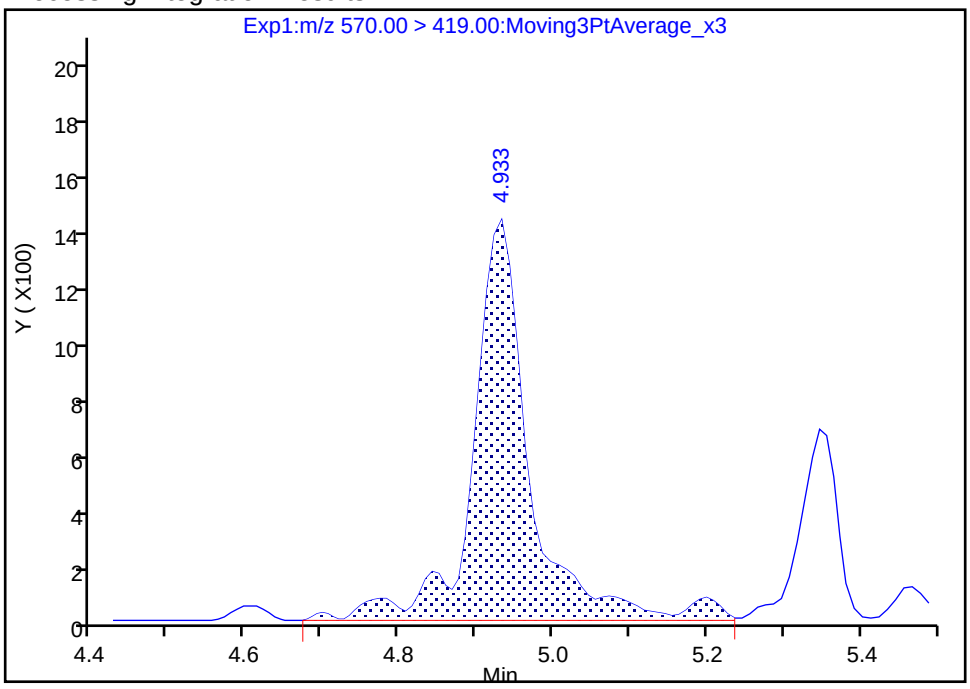
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_040.d				
Injection Date:	05-Jun-2020 05:55:29	Instrument ID:	A15		
Lims ID:	MB 320-383172/1-A				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	27	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

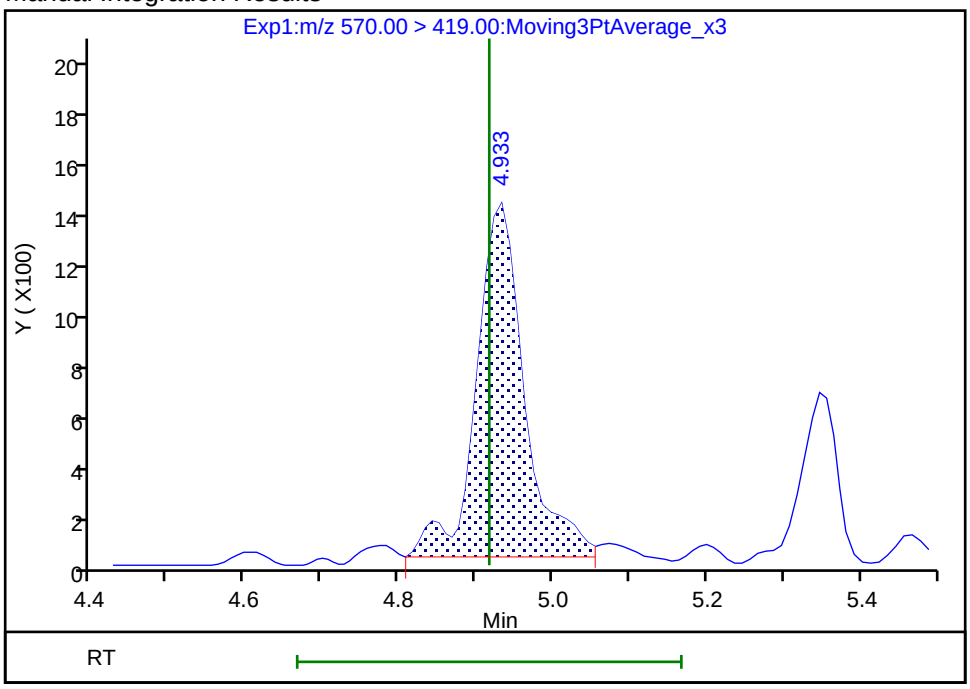
Processing Integration Results

RT: 4.93
Area: 7246
Amount: 0.019896
Amount Units: ng/ml



Manual Integration Results

RT: 4.93
Area: 5929
Amount: 0.016280
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:45:58
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

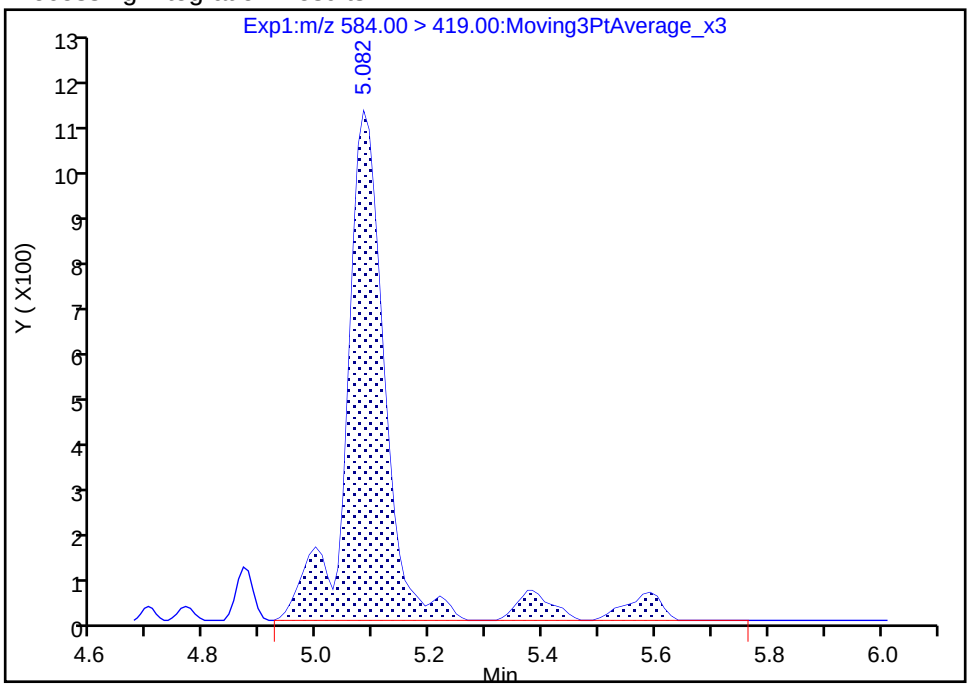
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_040.d				
Injection Date:	05-Jun-2020 05:55:29	Instrument ID:	A15		
Lims ID:	MB 320-383172/1-A				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	27	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

46 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

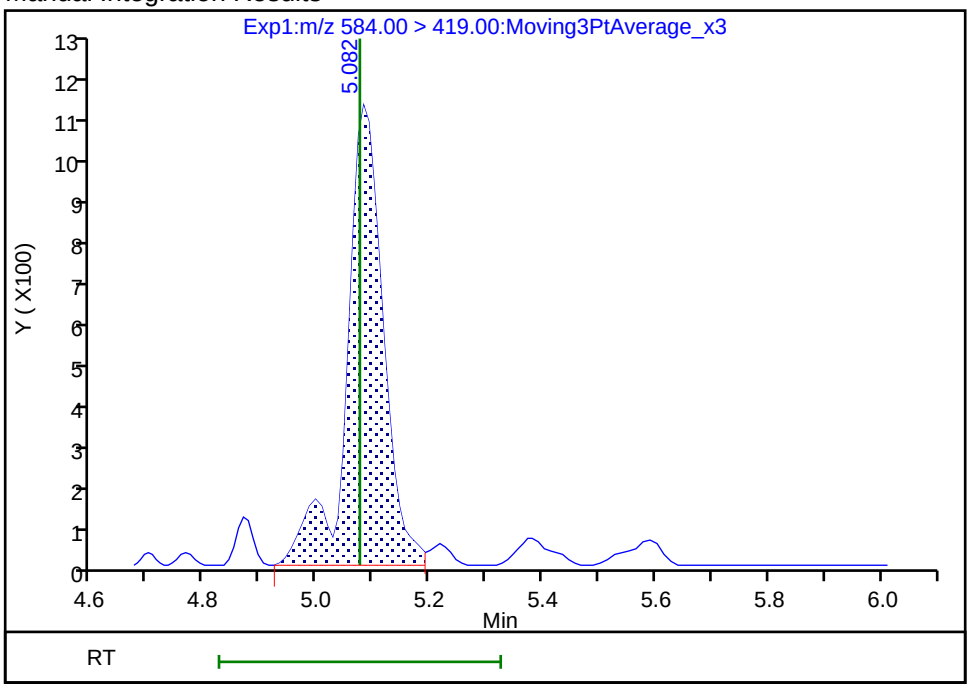
Processing Integration Results

RT: 5.08
Area: 5412
Amount: 0.013600
Amount Units: ng/ml



Manual Integration Results

RT: 5.08
Area: 4768
Amount: 0.011982
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 08-Jun-2020 09:46:09

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: Lab Sample ID: LCS 320-383172/2-A

Matrix: Water Lab File ID: 2020.06.08_A9_PFC.B_010.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 250(mL) Date Analyzed: 06/08/2020 15:57

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

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

Analysis Batch No.: 384478 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	41.6		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	36.7		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	36.2		2.0	0.58
375-85-9	Perfluoroheptanoic acid	39.4		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	35.6		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	37.7		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	38.9		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	40.3		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	36.1		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	39.0		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	34.9		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	35.6		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	29.2		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	35.6		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	33.8		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	33.5		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	37.2		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	37.4		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	35.5		20	1.9
27619-97-2	6:2 FTS	37.1		20	2.0
39108-34-4	8:2 FTS	34.4		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: Lab Sample ID: LCS 320-383172/2-A

Matrix: Water Lab File ID: 2020.06.08_A9_PFC.B_010.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 250(mL) Date Analyzed: 06/08/2020 15:57

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Acquity ID: 2.1(mm)

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

Analysis Batch No.: 384478 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	82		25-150
STL01893	13C5 PFPeA	91		25-150
STL00993	13C2 PFHxA	97		25-150
STL01892	13C4 PFHpA	95		25-150
STL00990	13C4 PFOA	99		25-150
STL00995	13C5 PFNA	104		25-150
STL00996	13C2 PFDA	107		25-150
STL00997	13C2 PFUnA	103		25-150
STL00998	13C2 PFDoA	112		25-150
STL02116	13C2 PFTeDA	109		25-150
STL02337	13C3 PFBS	92		25-150
STL00994	18O2 PFHxS	105		25-150
STL00991	13C4 PFOS	105		25-150
STL01056	13C8 FOSA	102		25-150
STL02118	d3-NMeFOSAA	99		25-150
STL02117	d5-NEtFOSAA	112		25-150
STL02279	M2-6:2 FTS	100		25-150
STL02280	M2-8:2 FTS	117		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_010.d
Lims ID: LCS 320-383172/2-A
Client ID:
Sample Type: LCS
Inject. Date: 08-Jun-2020 15:57:05 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-383172/2-a RI AR DUE 6/16
Misc. Info.: Plate: 1 Rack: 2
Operator ID: SACINSTRLCMS02 Instrument ID: A9

Method: \\chromfs\Sacramento\ChromData\A9\20200608-97178.b\PFAS_A9.m
Limit Group: LC PFC ICAL
Last Update: 09-Jun-2020 08:06:43 Calib Date: 02-Jun-2020 16:30:05
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A9\20200602-96782.b\2020.06.02_A9_PFC_ICAL_013.d

Column 1 : Det: EXP1
Process Host: CTX1037

First Level Reviewer: mongkols Date: 09-Jun-2020 08:06:43
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_006.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										
212.90 > 169.00	1.888	1.887	0.001	1.003	820952	1.04		104	228	
D 1 13C4 PFBA										
217.00 > 172.00	1.883	1.887	-0.004	0.565	4112891	2.05		82.0	8276	
3 Perfluoropentanoic acid										
262.90 > 219.00	2.190	2.190	0.0	1.004	627586	0.9165		91.7	87.0	
D 4 13C5 PFPeA										
267.90 > 223.00	2.182	2.190	-0.008	0.655	1639723	2.26		90.5	6773	
D 6 13C3 PFBS										
301.90 > 80.00	2.215	2.223	-0.008	0.665	1989233	2.13		91.8	5273	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.215	2.223	-0.008	1.000	828094	0.8908	Target=2.45	101	772	
298.90 > 99.00	2.215	2.223	-0.008	1.000	332879		2.49(1.23-3.68)		704	
9 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	2.504	2.503	0.001	1.000	437882	0.8573		91.8	4814	
D 8 M2-4:2 FTS										
329.00 > 81.00	2.504	2.503	0.001	0.752	415811	2.12		90.9	2284	
11 Perfluorohexanoic acid										
313.00 > 269.00	2.536	2.546	-0.010	1.000	1307570	0.9046	Target=15.35	90.5	271	
313.00 > 119.00	2.536	2.546	-0.010	1.000	85341		15.32(7.67-23.02)		282	
D 10 13C2 PFHxA										
315.00 > 270.00	2.536	2.546	-0.010	0.761	3484634	2.42		97.0	6270	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	2.558	2.557	0.001	1.155	829995	0.9616	Target=1.82	103	3202	
349.00 > 99.00	2.558	2.557	0.001	1.155	487820		1.70(0.91-2.73)		2380	
14 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	2.661	2.660	0.001	1.000	440560	0.9258		92.6	3008	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 13 13C3 HFPO-DA										
287.00 > 169.00	2.661	2.660	0.001	0.799	2054842	2.24		89.4	5024	
D 15 13C4 PFHpA										
367.00 > 322.00	2.929	2.930	-0.001	0.879	3064373	2.37		94.6	7422	
16 Perfluorohexanesulfonic acid										M
399.00 > 80.00	2.935	2.936	-0.001	1.000	1106977	0.7312	Target=3.05	80.3	2436	
399.00 > 99.00	2.935	2.936	-0.001	1.000	366655		3.02(1.53-4.58)		1659	M
18 Perfluoroheptanoic acid										
363.00 > 319.00	2.929	2.936	-0.007	1.000	1577254	0.9850	Target=4.19	98.5	409	
363.00 > 169.00	2.929	2.936	-0.007	1.000	349899		4.51(2.09-6.28)		964	
D 17 18O2 PFHxS										
403.00 > 84.00	2.935	2.936	-0.001	0.881	3036873	2.47		105	5123	
19 DONA										
377.00 > 251.00	2.981	2.982	-0.001	0.805	2747530	0.8789	Target=2.16	93.3	8911	
377.00 > 85.00	2.981	2.982	-0.001	0.805	1315856		2.09(1.08-3.24)		3961	
D 20 M2-6:2 FTS										
429.00 > 81.00	3.310	3.319	-0.009	0.994	389224	2.37		99.7	2248	
22 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	3.310	3.319	-0.009	1.000	338657	0.9280		97.9	623	
D 26 13C4 PFOA										
417.00 > 372.00	3.331	3.333	-0.002	1.000	3928317	2.47		98.9	7472	
23 Perfluoroheptanesulfonic acid										
449.00 > 80.00	3.331	3.333	-0.002	0.899	1544799	0.8905	Target=3.95	93.5	4599	
449.00 > 99.00	3.331	3.333	-0.002	0.899	384894		4.01(1.98-5.93)		2455	
24 Perfluorooctanoic acid										
413.00 > 369.00	3.331	3.333	-0.002	1.000	1757230	0.8893	Target=2.94	88.9	188	
413.00 > 169.00	3.331	3.333	-0.002	1.000	584756		3.01(1.47-4.42)		1708	
* 25 13C2 PFOA										
415.00 > 370.00	3.331	3.333	-0.002		4161309	2.50			9741	
28 Perfluorooctanesulfonic acid										
499.00 > 80.00	3.705	3.708	-0.003	1.000	1511269	0.8447	Target=4.22	91.0	2333	
499.00 > 99.00	3.705	3.708	-0.003	1.000	353370		4.28(2.11-6.33)		1508	
D 31 13C4 PFOS										
503.00 > 80.00	3.705	3.708	-0.003	1.112	3920612	2.50		105	6058	
30 Perfluorononanoic acid										
463.00 > 419.00	3.720	3.723	-0.003	1.000	1663545	0.9423	Target=5.79	94.2	367	
463.00 > 169.00	3.720	3.723	-0.003	1.000	291173		5.71(2.89-8.68)		1409	
D 29 13C5 PFNA										
468.00 > 423.00	3.720	3.723	-0.003	1.117	4053531	2.60		104	8709	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	3.909	3.913	-0.004	1.055	1582091	0.8393		90.1	4153	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.056	4.053	0.003	1.095	994911	0.8943	Target=4.61	93.2	3270	
549.00 > 99.00	4.056	4.053	0.003	1.095	206414		4.82(2.30-6.91)		1214	
38 Perfluorodecanoic acid										
513.00 > 469.00	4.083	4.079	0.004	1.000	1906762	0.9727	Target=13.97	97.3	1126	
513.00 > 169.00	4.083	4.079	0.004	1.000	122755		15.53(6.98-20.95)		150	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 33 13C2 PFDA										
515.00 > 470.00	4.083	4.079	0.004	1.226	4896742	2.68		107	8804	
D 37 M2-8:2 FTS										
529.00 > 81.00	4.083	4.079	0.004	1.226	547391	2.80		117	3759	
39 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.083	4.088	-0.005	1.000	433043	0.8603		89.8	2595	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.083	4.088	-0.005	1.000	1922675	0.9299		93.0	3655	
D 36 13C8 FOSA										
506.00 > 78.00	4.083	4.088	-0.005	1.226	1587636	2.55		102	2700	
D 41 d3-NMeFOSAA										
573.00 > 419.00	4.244	4.249	-0.005	1.274	1792813	2.46		98.5	4116	
40 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.244	4.249	-0.005	1.000	621956	0.9352		93.5	161	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	4.374	4.380	-0.006	1.181	1107273	0.8376	Target=4.90	86.9	2216	
599.00 > 99.00	4.374	4.380	-0.006	1.181	245237		4.52(2.45-7.36)		1462	
D 46 13C2 PFUnA										
565.00 > 520.00	4.401	4.406	-0.006	1.321	4130724	2.59		103	4646	
43 Perfluoroundecanoic acid										
563.00 > 519.00	4.401	4.406	-0.006	1.000	1287069	1.01	Target=10.02	101	425	
563.00 > 169.00	4.401	4.406	-0.006	1.000	128339		10.03(5.01-15.03)		1004	
D 45 d5-NEtFOSAA										
589.00 > 419.00	4.401	4.406	-0.006	1.321	1552402	2.81		112	1919	
44 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	4.409	4.414	-0.005	1.002	493224	0.8864		88.6	1171	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	4.537	4.534	0.003	1.225	2279069	0.8888		94.4	7388	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	4.546	4.543	0.003	1.365	871679	4.79		38.3	2133	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	4.555	4.561	-0.006	1.002	89154	0.9109		91.1	400	
50 NMeFOSA										
512.00 > 169.00	4.573	4.570	0.003	1.002	213943	0.8923		89.2	685	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	4.564	4.570	-0.006	1.370	679241	1.85		73.8	148	
D 56 13C2 PFDoA										
615.00 > 570.00	4.684	4.690	-0.006	1.406	4247467	2.81		112	7706	
52 Perfluorododecanoic acid										
613.00 > 569.00	4.684	4.690	-0.006	1.000	1608853	0.9033	Target=8.59	90.3	479	
613.00 > 169.00	4.684	4.690	-0.006	1.000	188309		8.54(4.30-12.89)		1162	
55 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	4.703	4.709	-0.006	1.152	530364	1.18		123	3079	
D 53 d9-N-EtFOSE-M										
639.00 > 59.00	4.721	4.719	0.002	1.417	745784	4.07		32.5	1970	
54 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	4.731	4.737	-0.007	1.002	73412	0.8369		83.7	400	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 58 d-N-EtFOSA-M										
531.00 > 169.00	4.748	4.746	0.002		412483	1.49		59.5	822	
57 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	4.748	4.754	-0.006	1.000	165254	0.7824		78.2	360	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	4.911	4.916	-0.005	1.325	125052	0.8477	Target=0.65	87.6	982	
699.00 > 99.00	4.911	4.916	-0.005	1.325	184776		0.68(0.32-0.97)		1614	
60 Perfluorotridecanoic acid										
663.00 > 619.00	4.944	4.949	-0.005	1.056	1181712	0.9742	Target=5.90	97.4	826	
663.00 > 169.00	4.944	4.949	-0.005	1.056	202684		5.83(2.95-8.85)		1057	
61 Perfluorotetradecanoic acid										
713.00 > 169.00	5.178	5.183	-0.005	1.000	237562	0.8736	Target=1.42	87.4	2179	
713.00 > 219.00	5.178	5.183	-0.005	1.000	164395		1.45(0.71-2.13)		968	
D 62 13C2 PFTeDA										
715.00 > 670.00	5.178	5.183	-0.005	1.554	4000975	2.72		109	6045	
64 Perfluorohexadecanoic acid										
813.00 > 769.00	5.606	5.613	-0.007	1.000	1473889	0.9701	Target=5.72	97.0	249	
813.00 > 169.00	5.606	5.613	-0.007	1.000	268022		5.50(2.86-8.59)		1968	
D 63 13C2 PFHxDA										
815.00 > 770.00	5.606	5.613	-0.007	1.683	4178272	2.93		117	6916	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	5.998	6.012	-0.014	1.070	1120231	1.18	Target=5.46	118	255	
913.00 > 169.00	5.998	6.012	-0.014	1.070	208203		5.38(2.73-8.19)		1219	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 09-Jun-2020 08:06:44 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_010.d

Injection Date: 08-Jun-2020 15:57:05 Instrument ID: A9

Lims ID: LCS 320-383172/2-A

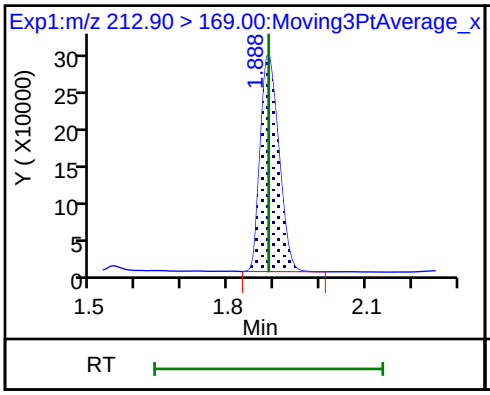
Client ID:

Operator ID: SACINSTRLCMS02 ALS Bottle#: 4 Worklist Smp#: 5

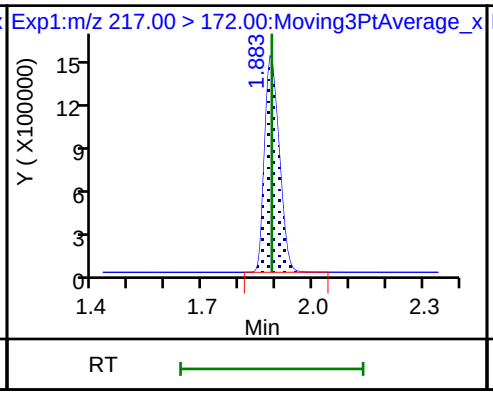
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A9 Limit Group: LC PFC ICAL

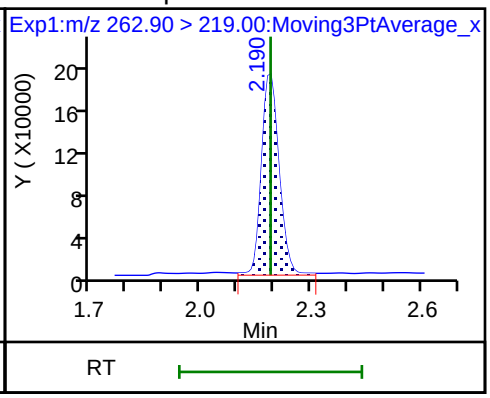
2 Perfluorobutanoic acid



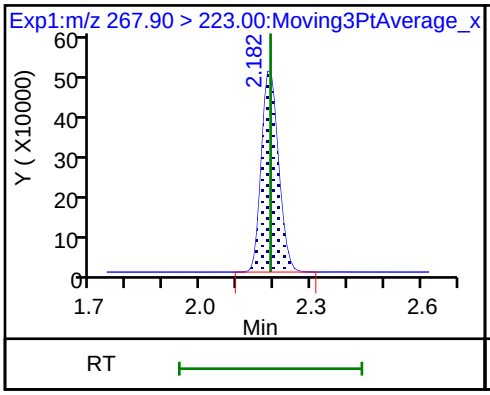
D 1 13C4 PFBA



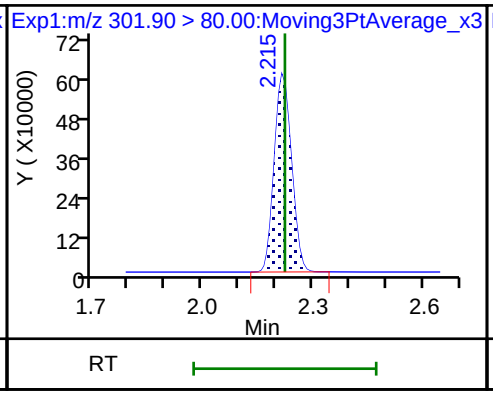
3 Perfluoropentanoic acid



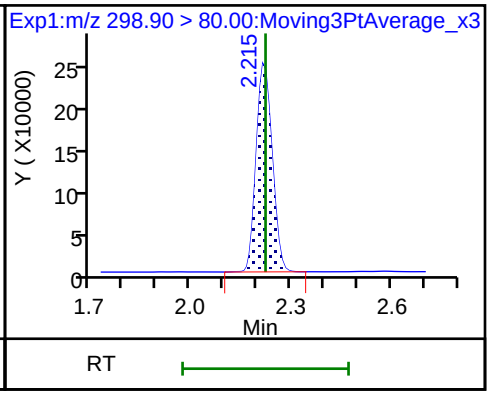
D 4 13C5 PFPeA



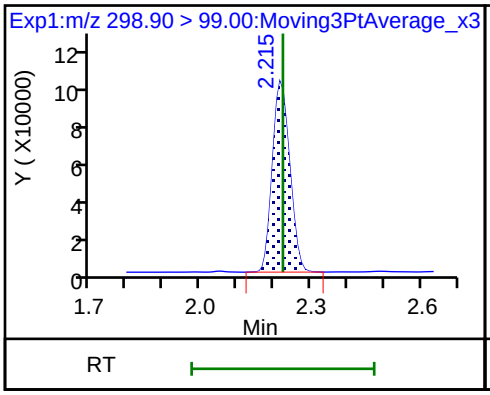
D 6 13C3 PFBS



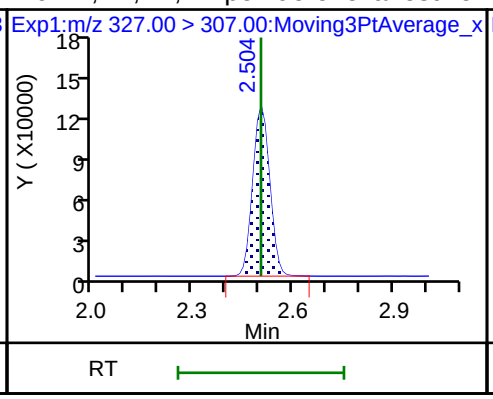
5 Perfluorobutanesulfonic acid



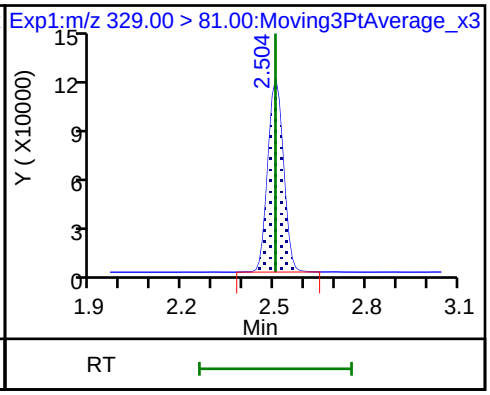
5 Perfluorobutanesulfonic acid



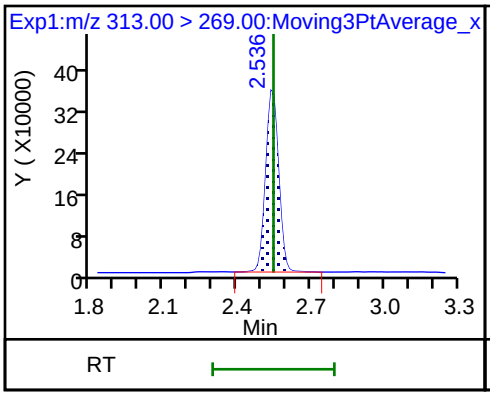
9 1H,1H,2H,2H-perfluorohexanesulfo



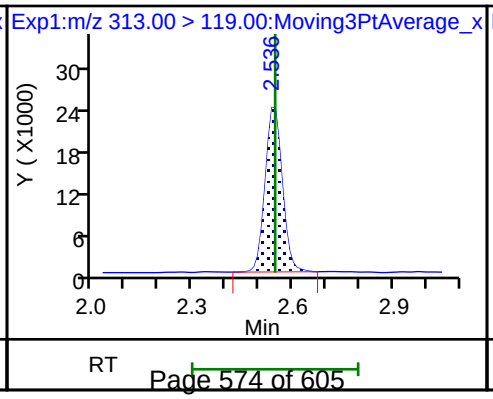
D 8 M2-4:2 FTS



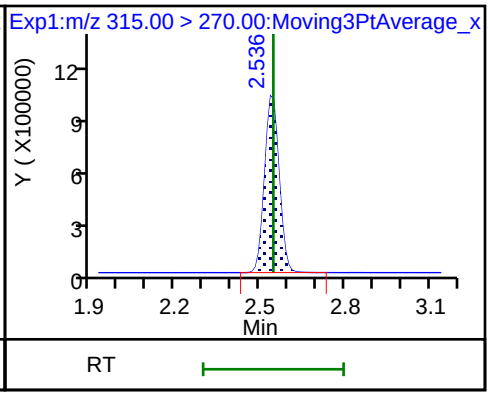
11 Perfluorohexanoic acid



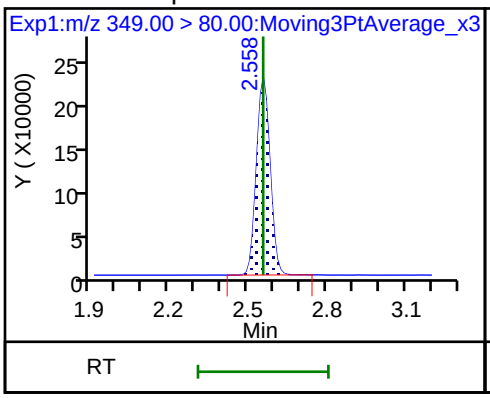
11 Perfluorohexanoic acid



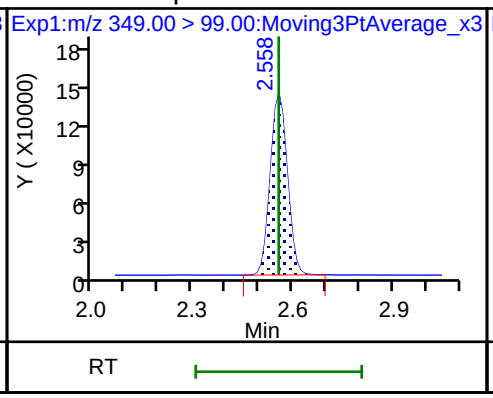
D 10 13C2 PFHxA



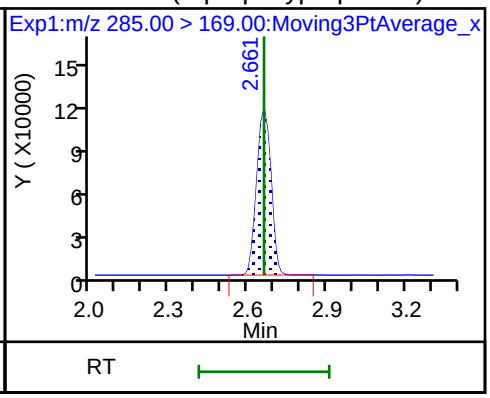
12 Perfluoropentanesulfonic acid



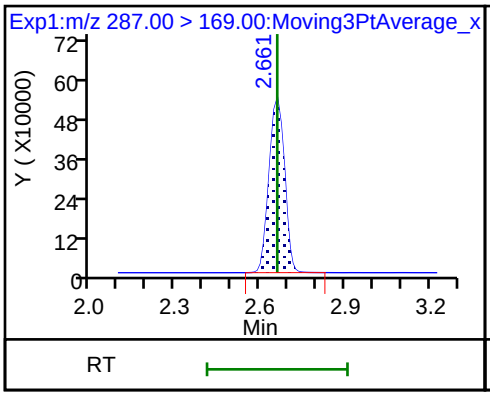
12 Perfluoropentanesulfonic acid



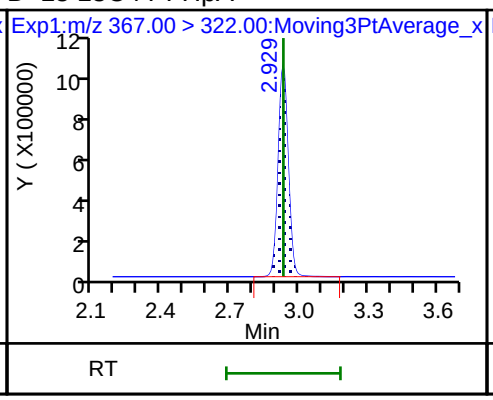
14 Perfluoro(2-propoxypropanoic) ac



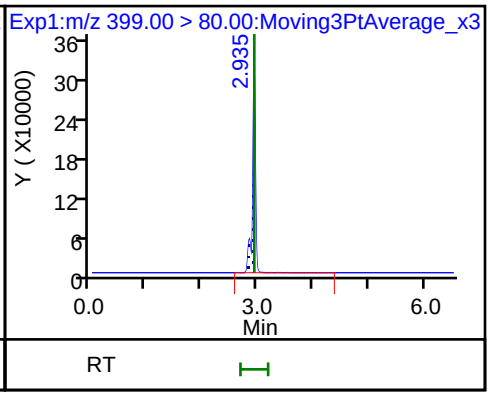
D 13 13C3 HFPO-DA



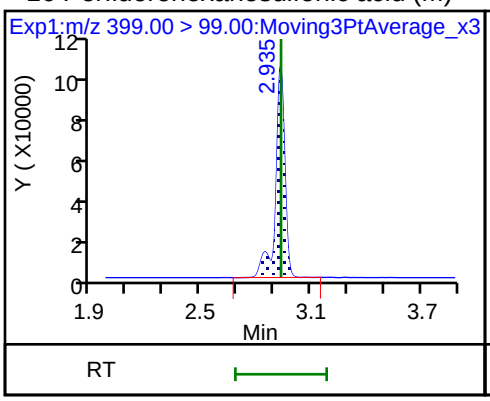
D 15 13C4 PFHpA



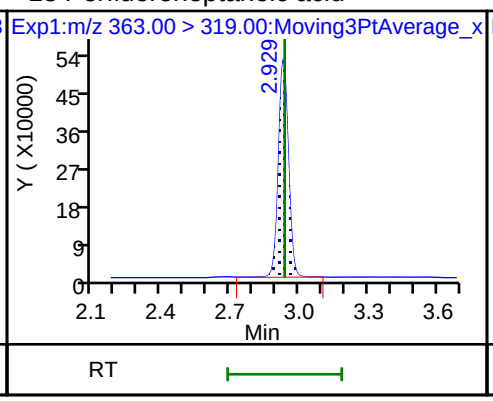
16 Perfluorohexanesulfonic acid



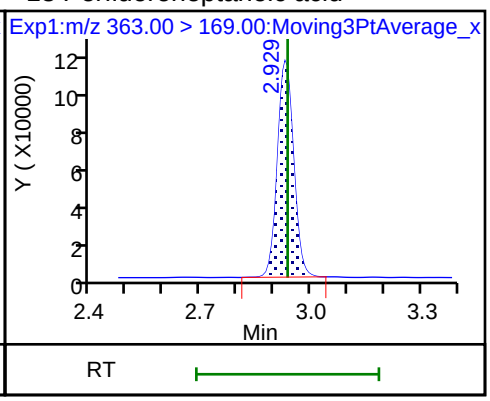
16 Perfluorohexanesulfonic acid (M)



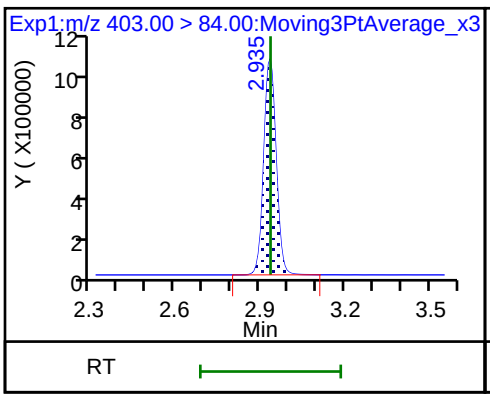
18 Perfluoroheptanoic acid



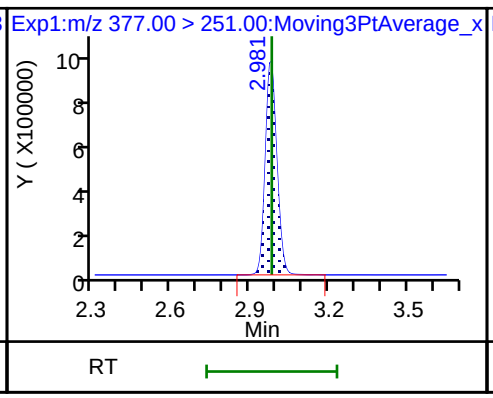
18 Perfluoroheptanoic acid



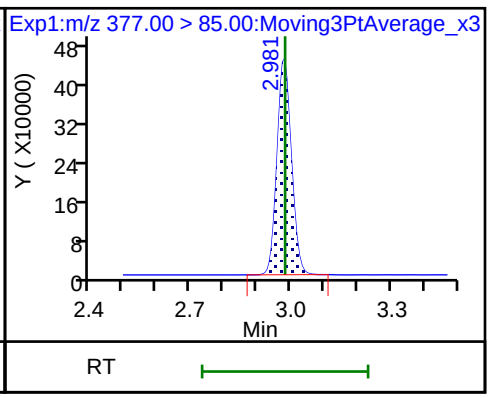
D 17 18O2 PFHxS



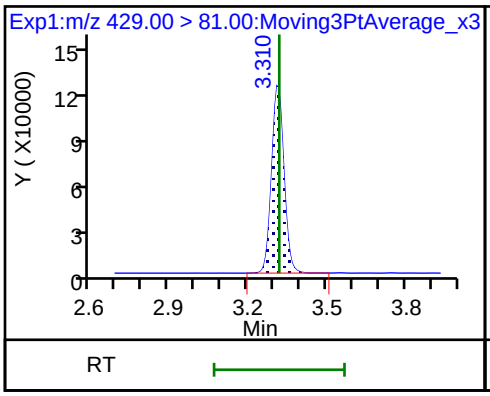
19 DONA



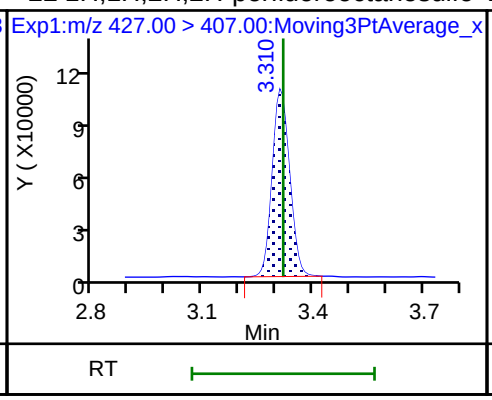
19 DONA



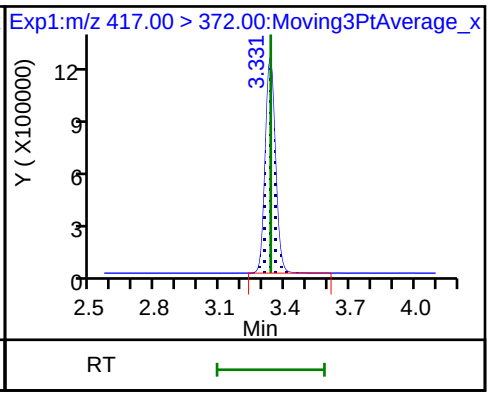
D 20 M2-6:2 FTS



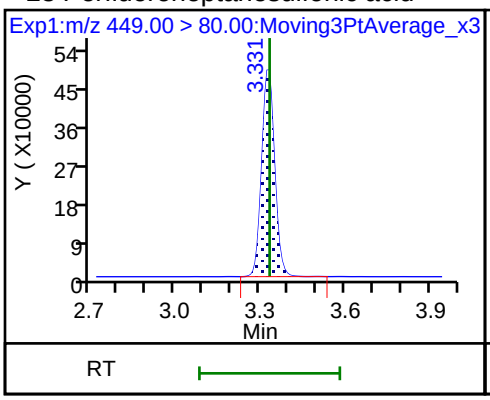
22 1H,1H,2H,2H-perfluorooctanesulfo



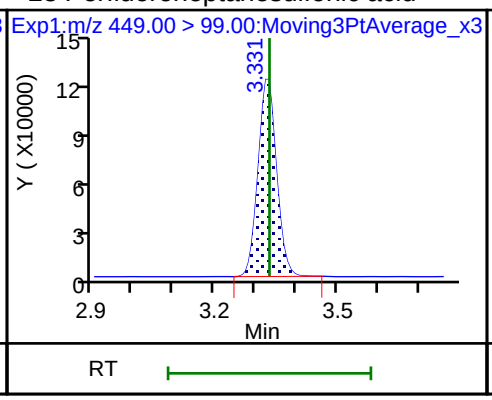
D 26 13C4 PFOA



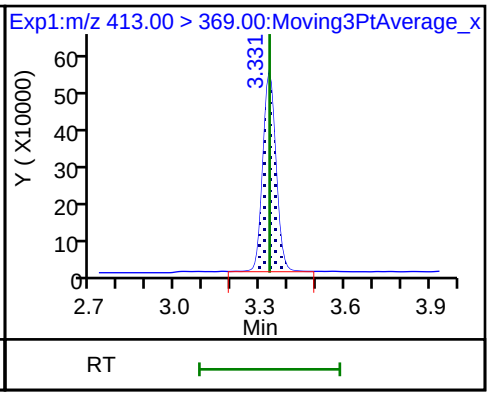
23 Perfluoroheptanesulfonic acid



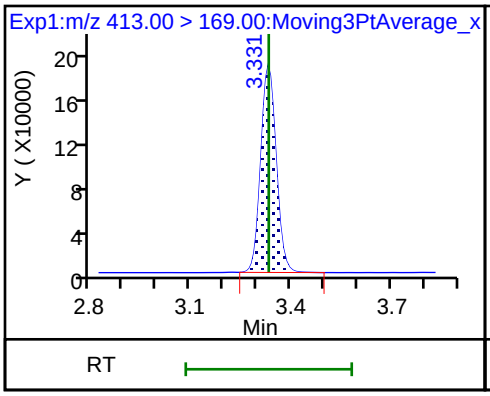
23 Perfluoroheptanesulfonic acid



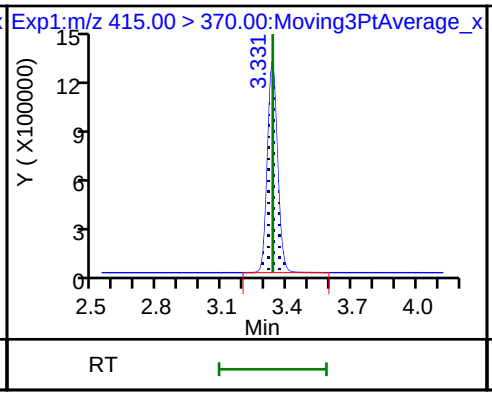
24 Perfluorooctanoic acid



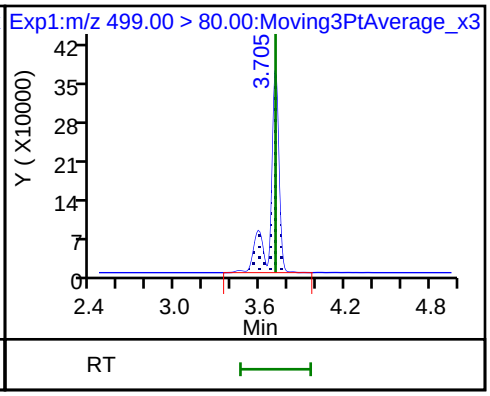
24 Perfluorooctanoic acid



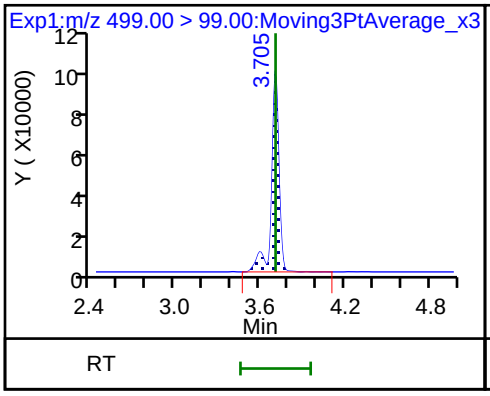
* 25 13C2 PFOA



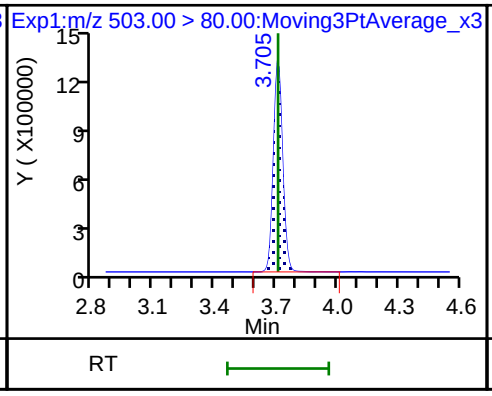
28 Perfluorooctanesulfonic acid



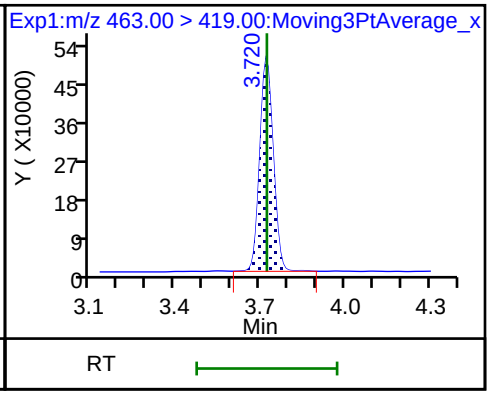
28 Perfluorooctanesulfonic acid



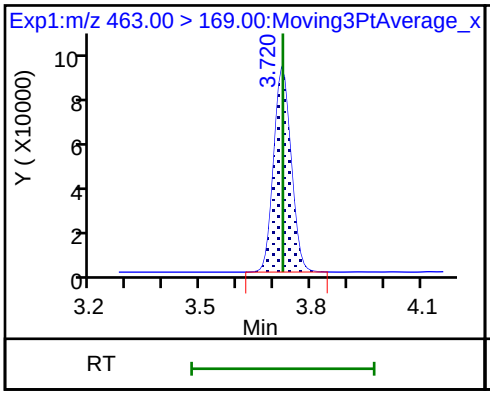
D 31 13C4 PFOS



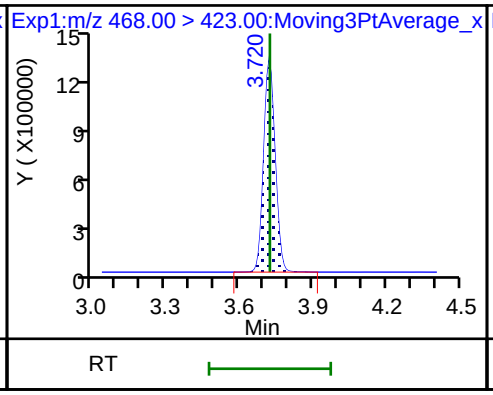
30 Perfluorononanoic acid



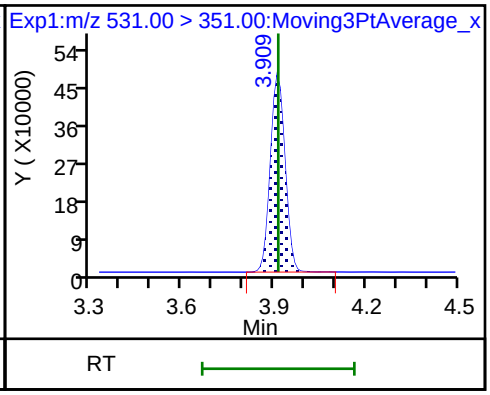
30 Perfluorononanoic acid



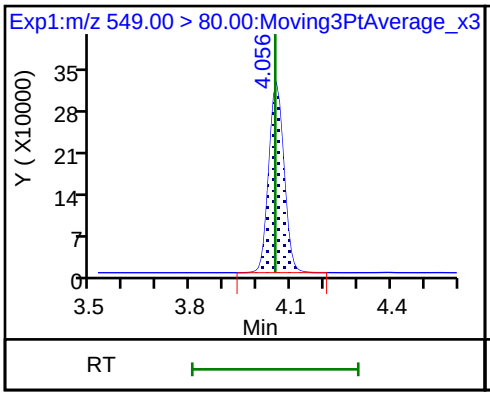
D 29 13C5 PFNA



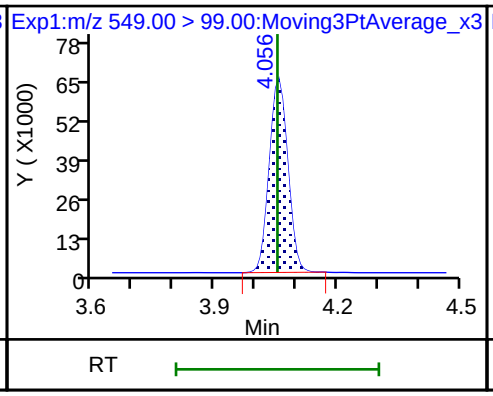
32 9-Chlorohexadecafluoro-3-oxanona



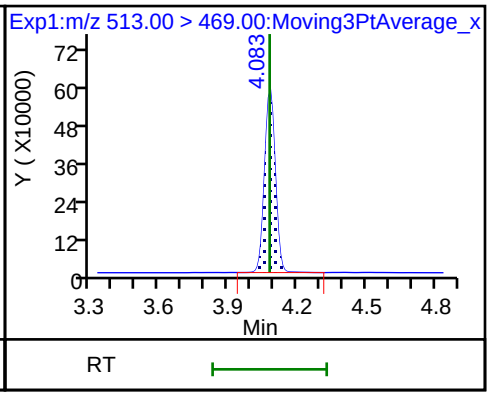
35 Perfluorononanesulfonic acid



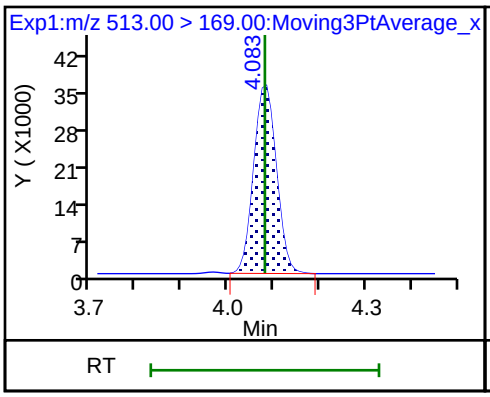
35 Perfluorononanesulfonic acid



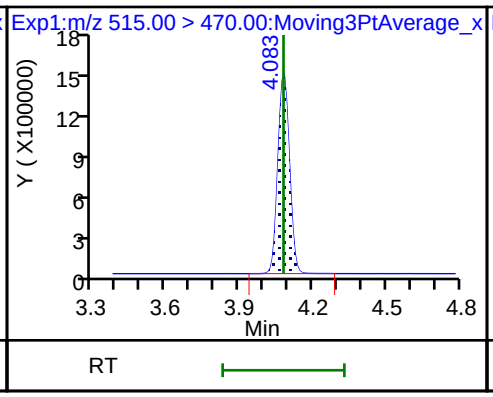
38 Perfluorodecanoic acid



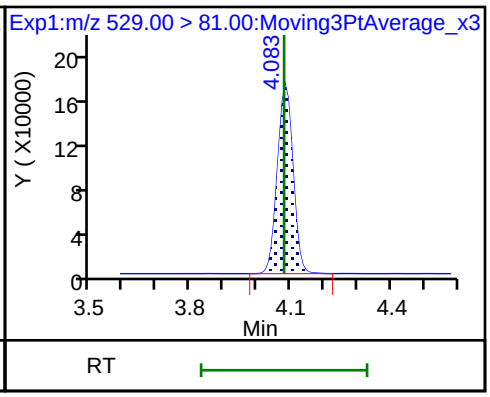
38 Perfluorodecanoic acid



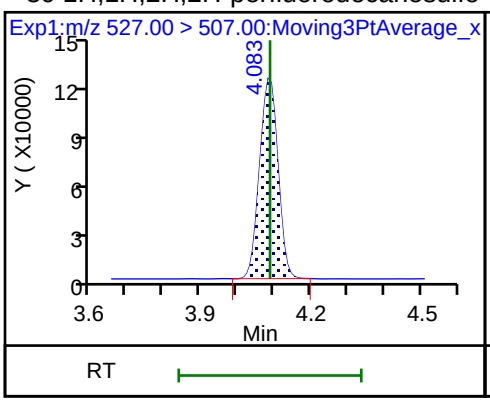
D 33 13C2 PFDA



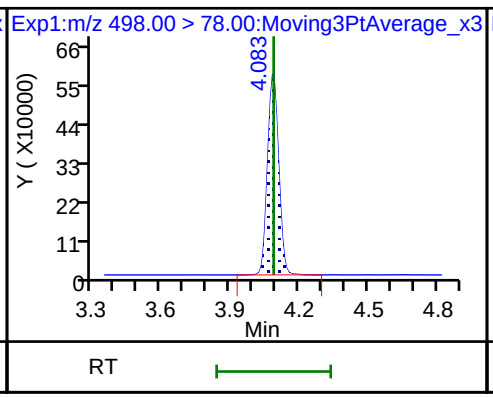
D 37 M2-8:2 FTS



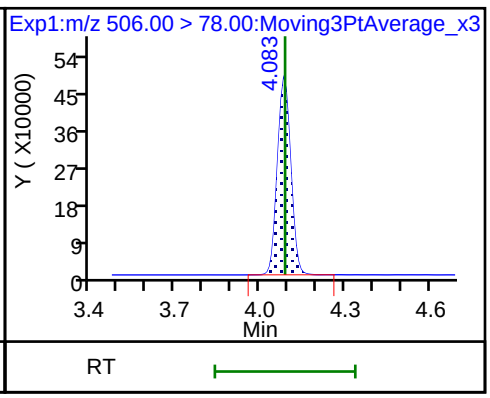
39 1H,1H,2H,2H-perfluorodecanesulfo



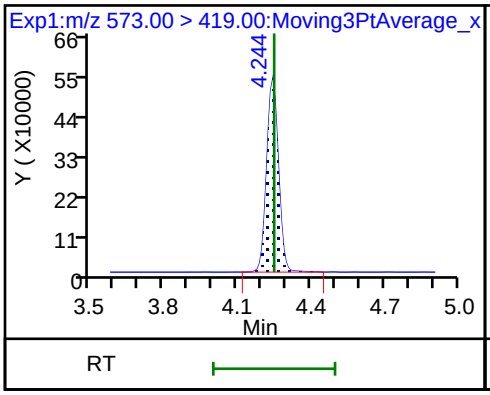
34 Perfluorooctanesulfonamide



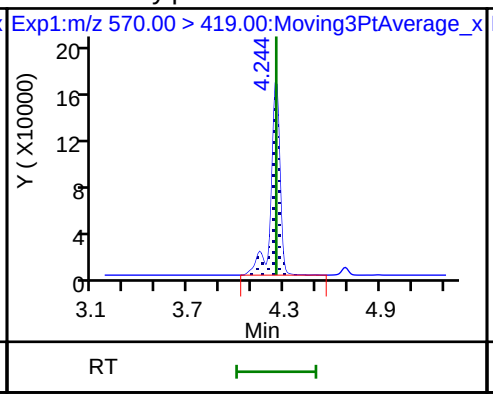
D 36 13C8 FOSA



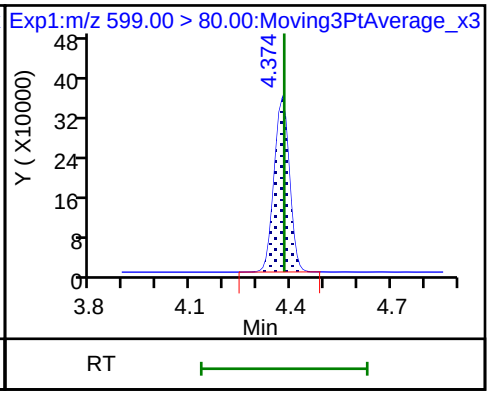
D 41 d3-NMeFOSAA



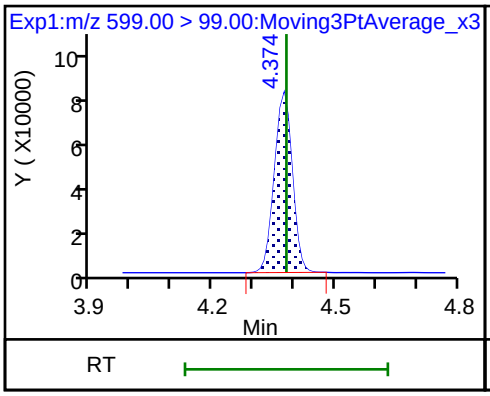
40 N-methylperfluorooctanesulfonami



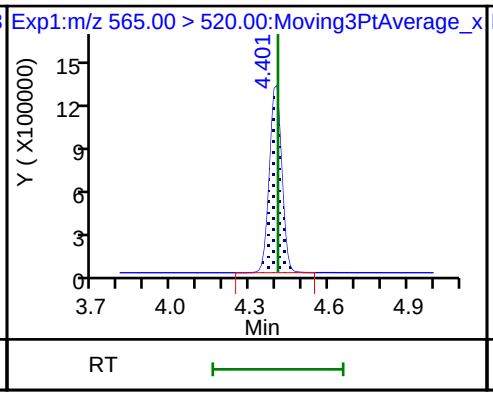
42 Perfluorodecanesulfonic acid



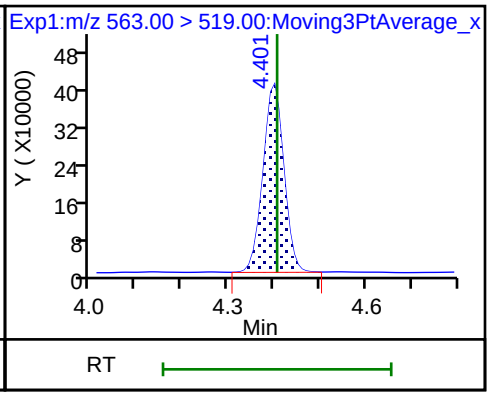
42 Perfluorodecanesulfonic acid



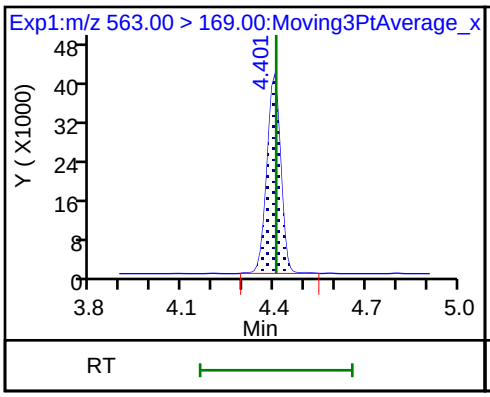
D 46 13C2 PFUnA



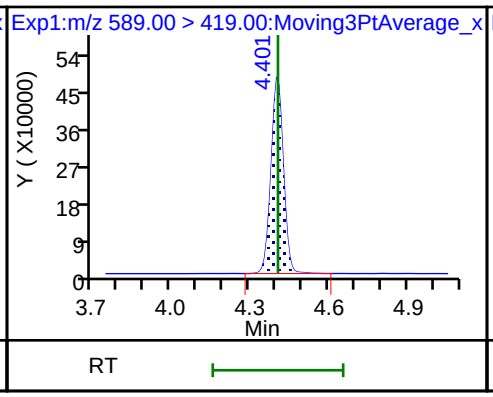
43 Perfluoroundecanoic acid



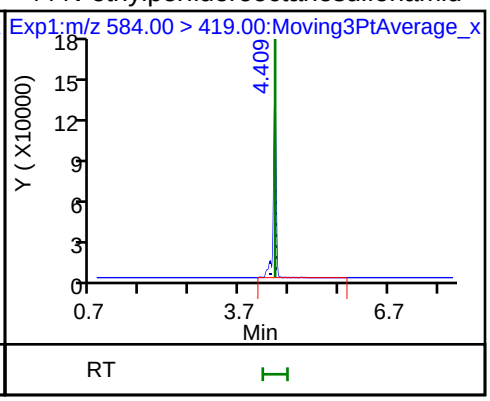
43 Perfluoroundecanoic acid



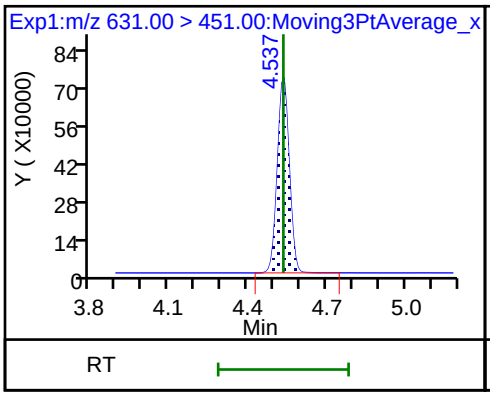
D 45 d5-NEtFOSAA



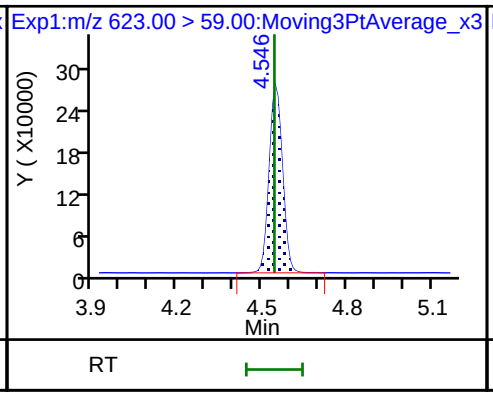
44 N-ethylperfluorooctanesulfonamid



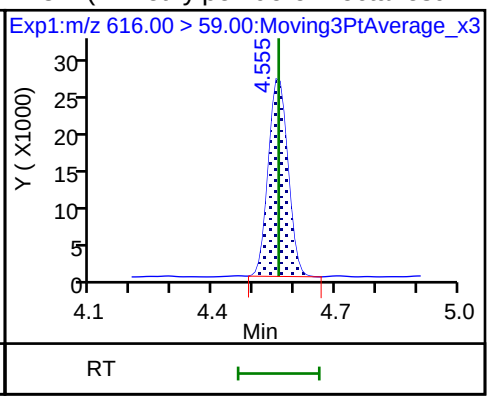
51 11-Chloroeicosafluoro-3-oxaundec



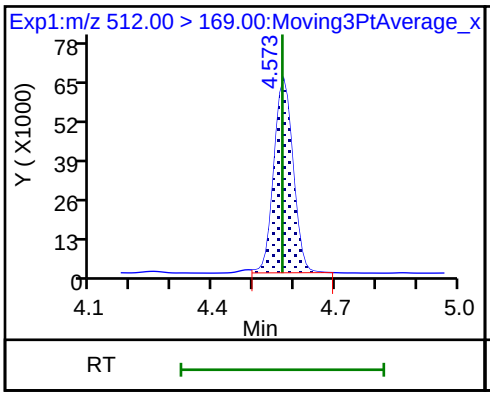
D 47 d7-N-MeFOSE-M



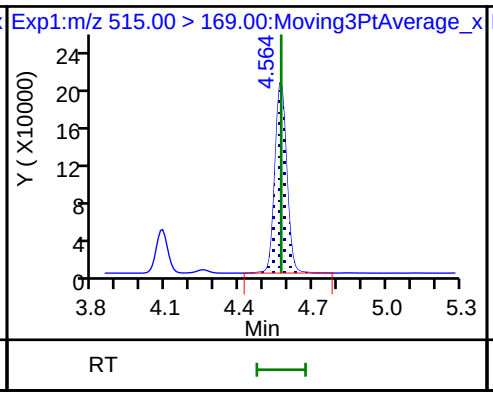
48 2-(N-methylperfluoro-1-octanesul



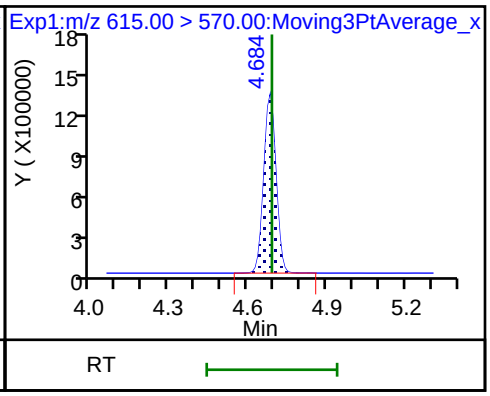
50 NMeFOSA



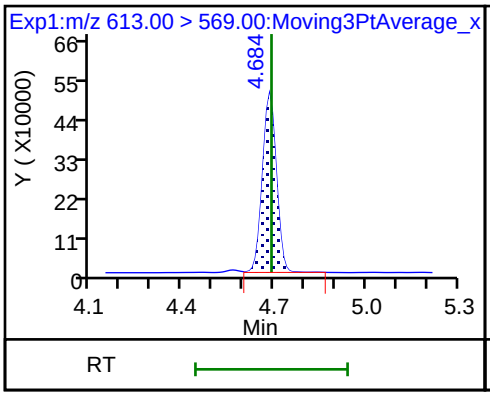
D 49 d-N-MeFOSA-M



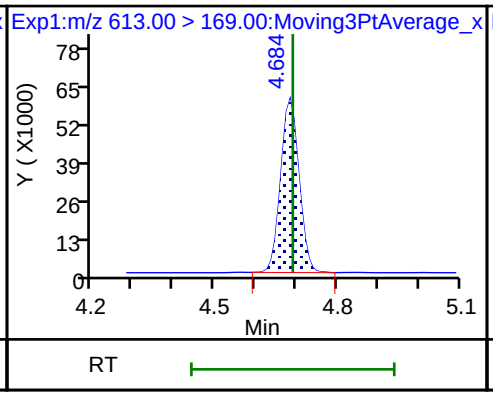
D 56 13C2 PFDoA



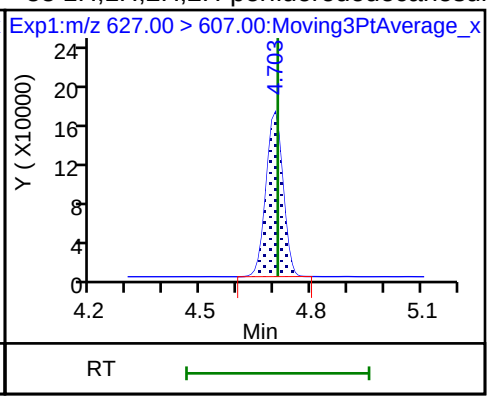
52 Perfluorododecanoic acid



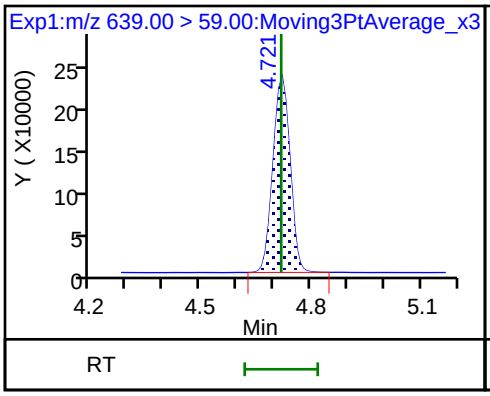
52 Perfluorododecanoic acid



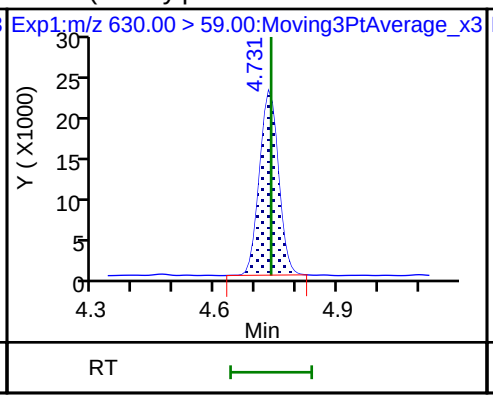
55 1H,1H,2H,2H-perfluorododecanesul



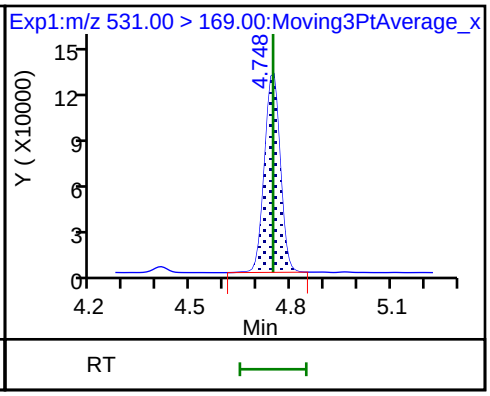
D 53 d9-N-EtFOSE-M



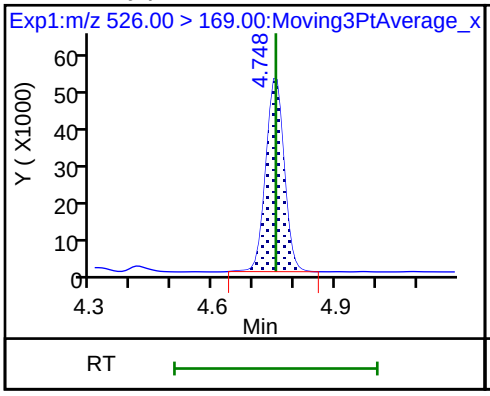
54 2-(N-ethylperfluoro-1-octanesulf



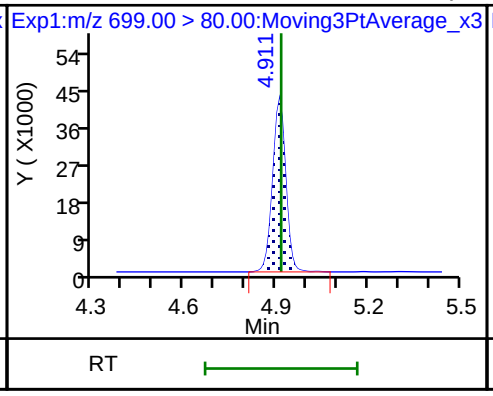
D 58 d-N-EtFOSA-M



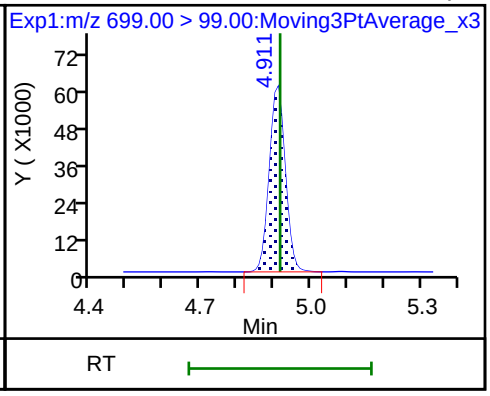
57 N-ethylperfluoro-1-octanesulfona



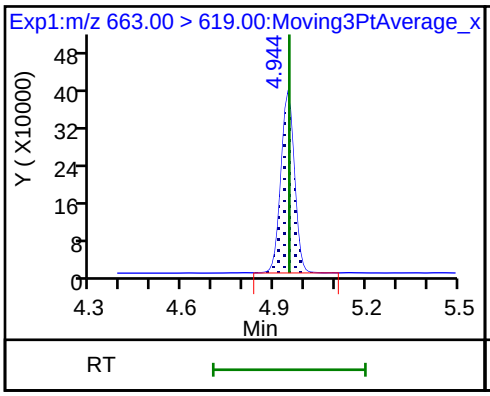
59 Perfluorododecanesulfonic acid (



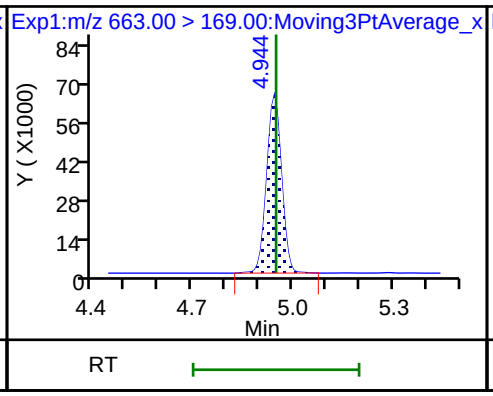
59 Perfluorododecanesulfonic acid (



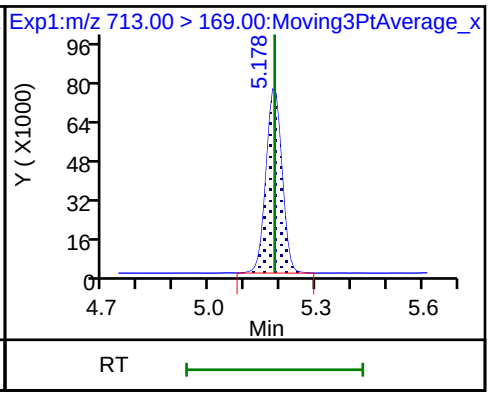
60 Perfluorotridecanoic acid



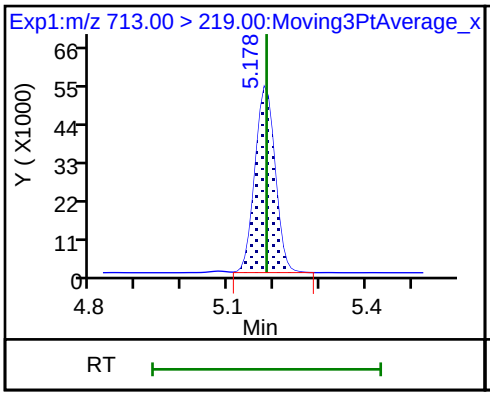
60 Perfluorotridecanoic acid



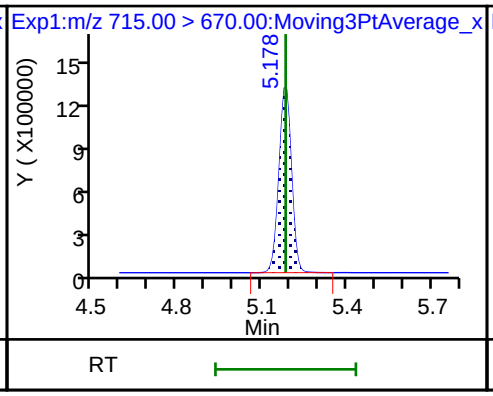
61 Perfluorotetradecanoic acid



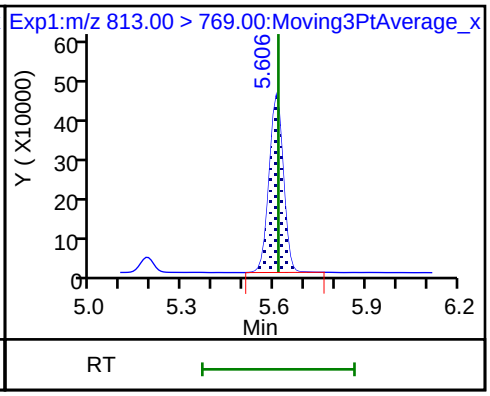
61 Perfluorotetradecanoic acid



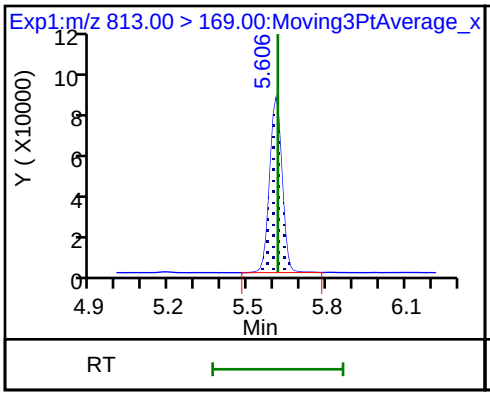
D 62 13C2 PFTeDA



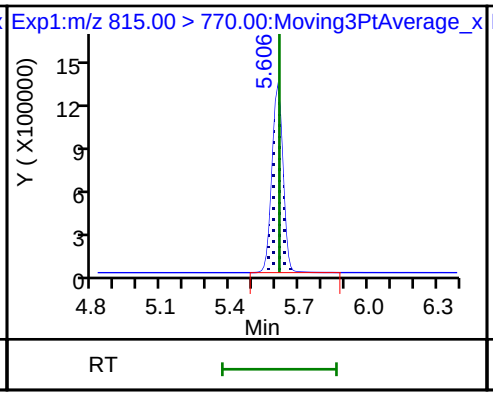
64 Perfluorohexadecanoic acid



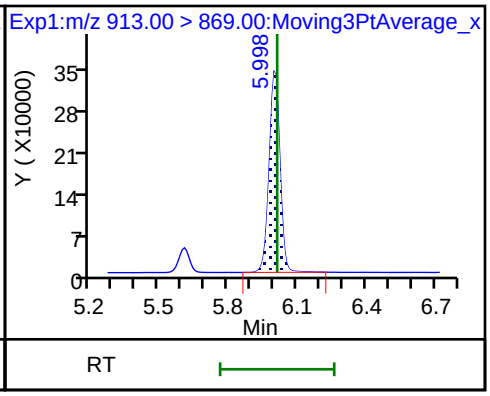
64 Perfluorohexadecanoic acid



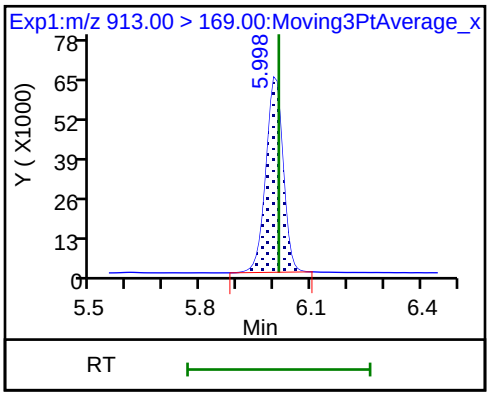
D 63 13C2 PFHxDA



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

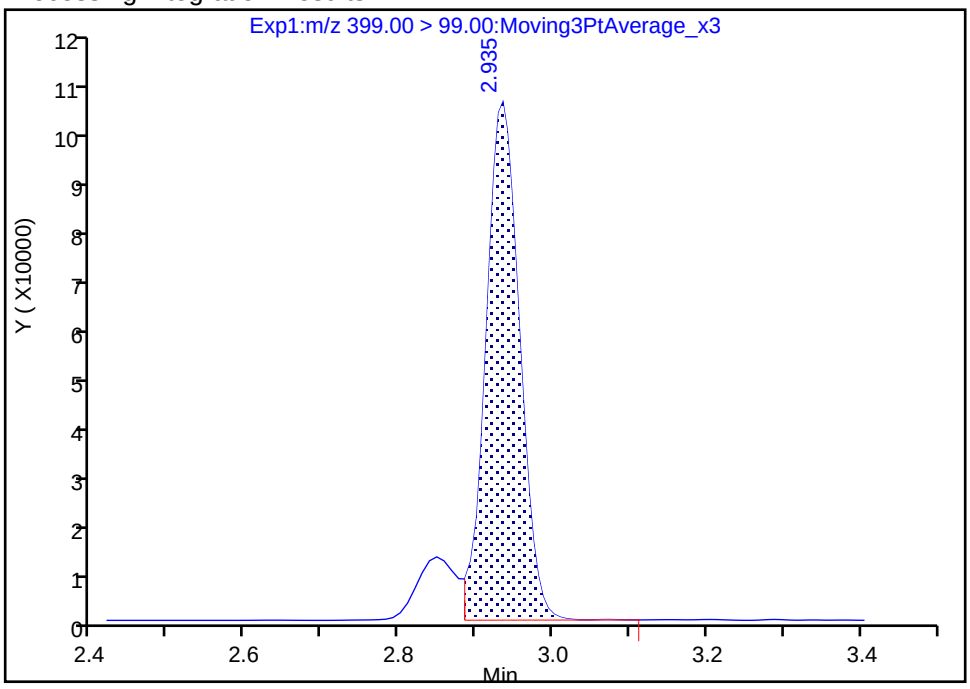
Data File:	\\chromfs\Sacramento\ChromData\A9\20200608-97178.b\2020.06.08_A9_PFC.B_010.d				
Injection Date:	08-Jun-2020 15:57:05	Instrument ID:	A9		
Lims ID:	LCS 320-383172/2-A				
Client ID:					
Operator ID:	SACINSTRLCMS02	ALS Bottle#:	4	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A9	Limit Group:	LC PFC ICAL		
Column:		Detector	EXP1		

16 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

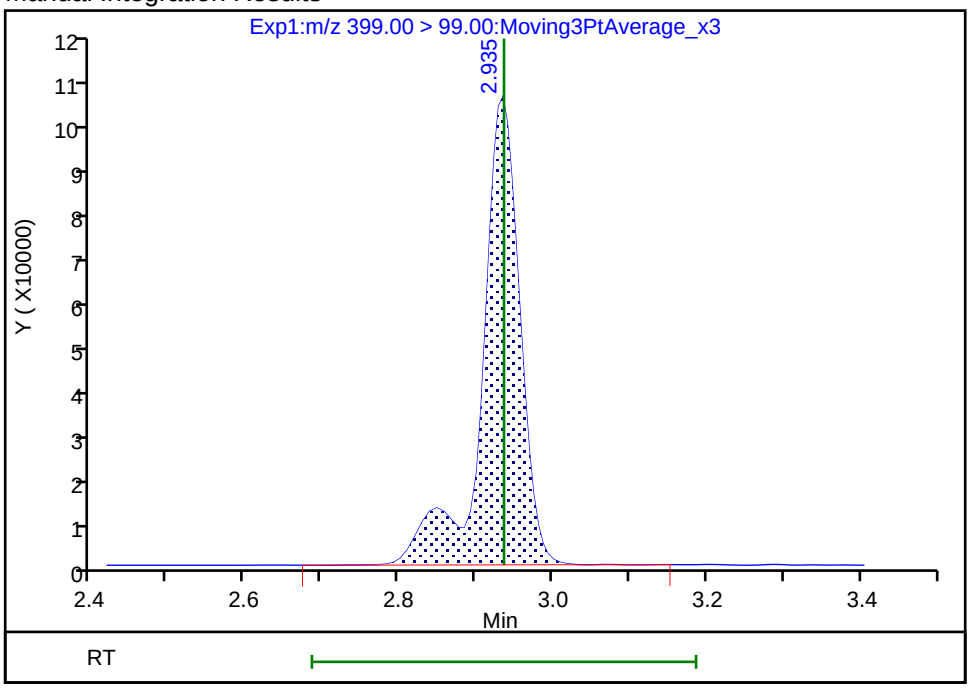
Processing Integration Results

RT: 2.93
Area: 321104
Amount: 0.731167
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 366655
Amount: 0.731167
Amount Units: ng/ml



Reviewer: mongkols, 09-Jun-2020 08:06:36

Audit Action: Manually Integrated Audit Reason: Isomers

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: Lab Sample ID: LCSD 320-383172/3-A

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_042.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 250(mL) Date Analyzed: 06/05/2020 06:13

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	44.4		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	39.7		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	39.3		2.0	0.58
375-85-9	Perfluoroheptanoic acid	43.6		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	39.0		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	39.0		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	38.7		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	39.8		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	36.0		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	38.8		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	44.5		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	37.1		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	32.6		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	39.0		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	38.5		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	35.4		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	41.9		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	41.3		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	38.0		20	1.9
27619-97-2	6:2 FTS	40.8		20	2.0
39108-34-4	8:2 FTS	40.5		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Client Sample ID: Lab Sample ID: LCSD 320-383172/3-A

Matrix: Water Lab File ID: 2020.06.04_A15_PFC_B_042.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:42

Sample wt/vol: 250(mL) Date Analyzed: 06/05/2020 06:13

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383803 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	85		25-150
STL01893	13C5 PFPeA	91		25-150
STL00993	13C2 PFHxA	93		25-150
STL01892	13C4 PFHpA	90		25-150
STL00990	13C4 PFOA	97		25-150
STL00995	13C5 PFNA	97		25-150
STL00996	13C2 PFDA	98		25-150
STL00997	13C2 PFUnA	95		25-150
STL00998	13C2 PFDoA	89		25-150
STL02116	13C2 PFTeDA	77		25-150
STL02337	13C3 PFBS	92		25-150
STL00994	18O2 PFHxS	90		25-150
STL00991	13C4 PFOS	89		25-150
STL01056	13C8 FOSA	83		25-150
STL02118	d3-NMeFOSAA	81		25-150
STL02117	d5-NEtFOSAA	80		25-150
STL02279	M2-6:2 FTS	92		25-150
STL02280	M2-8:2 FTS	92		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_042.d
Lims ID: LCSD 320-383172/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 05-Jun-2020 06:13:41 ALS Bottle#: 29 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-383172/3-a
Misc. Info.: Plate: 3 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 09:47:45 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: ruangyotsakuld Date: 08-Jun-2020 09:47:45
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

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	2.547	2.549	-0.002	0.627	8707954	2.12		85.0	15823	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.555	2.557	-0.002	1.003	3577585	1.11		111	669	
D 4 13C5 PFPeA										
267.90 > 223.00	2.897	2.899	-0.002	0.713	8312063	2.27		90.8	12500	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.897	2.899	-0.002	1.000	3327307	0.99		99.3	235	
D 9 13C3 PFBS										
301.90 > 80.00	2.938	2.940	-0.002	0.723	5435942	2.14		92.1	11465	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.938	2.940	-0.002	1.000	2114993	0.9279	Target=2.12	105	909	
298.90 > 99.00	2.938	2.940	-0.002	1.000	971131		2.18(1.06-3.19)		621	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.228	3.231	-0.003	0.794	686912	2.03		87.1	1501	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.228	3.231	-0.003	1.000	653164	0.9845		105	6874	
D 11 13C2 PFHxA										
315.00 > 270.00	3.276	3.278	-0.002	0.806	8317801	2.34		93.5	15283	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.276	3.278	-0.002	1.000	3061710	0.9816	Target=15.31	98.2	960	
313.00 > 119.00	3.276	3.278	-0.002	1.000	202779		15.10(7.66-22.97)		391	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.286	3.288	-0.002	1.118	1601827	0.9340	Target=2.67	99.6	5440	
349.00 > 99.00	3.286	3.288	-0.002	1.118	594106		2.70(1.34-4.01)		3497	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.392	3.394	-0.002	0.835	1900908	2.33		93.3	10963	

Report Date: 08-Jun-2020 09:47:45 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_042.d
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_039.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.392	3.394	-0.002	1.000	729517	1.05		105	7596	
D 18 13C4 PFHpA										
367.00 > 322.00	3.667	3.672	-0.005	0.902	6343026	2.25		89.9	16892	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.667	3.672	-0.005	1.000	2797161	1.09	Target=3.85	109	902	
363.00 > 169.00	3.667	3.672	-0.005	1.000	714866		3.91(1.93-5.78)		3863	
D 17 18O2 PFHxS										
403.00 > 84.00	3.677	3.682	-0.005	0.905	2594140	2.12		89.8	10191	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.677	3.682	-0.005	1.000	1004055	0.8151	Target=2.99	89.6	3897	
399.00 > 99.00	3.677	3.682	-0.005	1.000	350962		2.86(1.49-4.48)		1606	
19 DONA										
377.00 > 251.00	3.716	3.721	-0.005	0.842	6316996	1.02	Target=2.08	109	9665	
377.00 > 85.00	3.716	3.721	-0.005	0.842	2970242		2.13(1.04-3.12)		8224	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.039	4.042	-0.003	0.994	814656	2.18		92.0	5247	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.039	4.042	-0.003	1.000	687068	1.02		107	3777	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.056	4.051	0.005	0.919	894337	0.9738	Target=3.81	102	4712	
449.00 > 99.00	4.056	4.051	0.005	0.919	234429		3.81(1.91-5.72)		1827	
D 25 13C4 PFOA										
417.00 > 372.00	4.064	4.059	0.005	1.000	6174521	2.42		96.7	12323	
* 23 13C2 PFOA										
415.00 > 370.00	4.064	4.059	0.005		6475625	2.50			15690	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.064	4.059	0.005	1.000	2545433	0.9755	Target=2.79	97.5	216	
413.00 > 169.00	4.064	4.059	0.005	1.000	841910		3.02(1.39-4.18)		2266	
D 27 13C4 PFOS										
503.00 > 80.00	4.412	4.405	0.007	1.086	2012285	2.12		88.8	8301	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.412	4.405	0.007	1.000	802530	0.9634	Target=5.06	104	4513	
499.00 > 99.00	4.412	4.405	0.007	1.000	159567		5.03(2.53-7.59)		1602	
D 30 13C5 PFNA										
468.00 > 423.00	4.420	4.420	0.0	1.088	4738013	2.42		97.0	9493	
31 Perfluorononanoic acid										
463.00 > 419.00	4.428	4.420	0.008	1.002	1874085	0.9750	Target=7.17	97.5	361	
463.00 > 169.00	4.428	4.420	0.008	1.002	268284		6.99(3.58-10.75)		1285	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.598	4.598	0.0	1.042	2166345	0.9427		101	7779	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.736	4.730	0.006	1.073	657028	0.9770	Target=2.84	102	1430	
549.00 > 99.00	4.736	4.730	0.006	1.073	225923		2.91(1.42-4.26)		2724	
D 33 13C8 FOSA										
506.00 > 78.00	4.759	4.752	0.007	1.171	3923788	2.08		83.3	6917	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.759	4.752	0.007	1.000	1445707	1.05		105	2680	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.759	4.752	0.007	1.000	1715480	0.9684	Target=10.38	96.8	669	
513.00 > 169.00	4.759	4.752	0.007	1.000	169694		10.11(5.19-15.57)		325	
D 39 13C2 PFDA										
515.00 > 470.00	4.759	4.752	0.007	1.171	4585512	2.46		98.5	12746	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.759	4.761	-0.002	1.000	674941	1.01		106	4642	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.759	4.761	-0.002	1.171	979347	2.20		92.0	4651	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.915	4.907	0.008	1.209	1404150	2.02		80.8	2311	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.915	4.917	-0.002	1.000	422678	1.03		103	565	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.038	5.039	-0.001	1.142	522585	0.8856	Target=2.98	91.9	3598	
599.00 > 99.00	5.038	5.039	-0.001	1.142	174479		3.00(1.49-4.46)		2182	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.065	5.057	0.008	1.000	1082864	1.00	Target=7.52	99.5	694	
563.00 > 169.00	5.065	5.057	0.008	1.000	150537		7.19(3.76-11.28)		1282	
D 43 13C2 PFUnA										
565.00 > 520.00	5.065	5.066	-0.001	1.246	3770183	2.37		94.9	7298	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.065	5.066	-0.001	1.246	1419508	2.01		80.2	1944	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.074	5.075	-0.001	1.002	381360	0.9504		95.0	1435	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.192	5.193	-0.001	1.177	1959875	0.9024		95.8	8139	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.201	5.202	-0.001	1.280	1592332	3.35		26.8	1541	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.209	5.211	-0.002	1.002	129185	0.9690		96.9	323	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.228	5.220	0.008	1.286	853755	1.43		57.3	141	
50 NMeFOSA										
512.00 > 169.00	5.228	5.220	0.008	1.000	298403	0.9280		92.8	438	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.339	5.340	-0.001	1.000	1112813	0.9002	Target=6.84	90.0	230	
613.00 > 169.00	5.339	5.340	-0.001	1.000	159015		7.00(3.42-10.26)		2019	
D 56 13C2 PFDoA										
615.00 > 570.00	5.339	5.340	-0.001	1.314	3148375	2.24		89.5	9168	
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.357	5.358	-0.001	1.126	521059	0.99		103	4434	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.374	5.367	0.007	1.322	1574128	2.71		21.6	1910	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.382	5.375	0.007	1.001	110985	0.8609		86.1	366	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.393	5.394	-0.001	1.327	620808	1.03		41.1	329	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.404	5.394	0.010	1.002	220438	0.8859		88.6	353	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.554	5.555	-0.001	1.259	182493	0.8903	Target=0.87	92.0	2171	
699.00 > 99.00	5.554	5.555	-0.001	1.259	213296		0.86(0.43-1.30)		3254	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.591	5.592	-0.001	1.047	964928	0.9710	Target=7.30	97.1	229	
663.00 > 169.00	5.591	5.592	-0.001	1.047	142659		6.76(3.65-10.95)		1393	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.821	5.830	-0.009	1.432	1775840	1.93		77.2	9092	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.830	5.830	0.0	1.002	790602	1.11	Target=8.08	111	255	
713.00 > 219.00	5.821	5.830	-0.009	1.000	89231		8.86(4.04-12.11)		1751	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.245	6.245	0.0	1.537	1685296	2.21		88.4	5339	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.245	6.255	-0.010	1.000	639920	1.09	Target=7.53	109	107	
813.00 > 169.00	6.236	6.255	-0.019	0.998	79122		8.09(3.77-11.30)		1135	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.637	6.650	-0.013	1.063	309734	0.9339	Target=10.26	93.4	61.8	
913.00 > 169.00	6.630	6.650	-0.020	1.062	31126		9.95(5.13-15.39)		543	

Report Date: 08-Jun-2020 09:47:45 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97047.b\2020.06.04_A15_PFC_B_042.d

Injection Date: 05-Jun-2020 06:13:41 Instrument ID: A15

Lims ID: LCSD 320-383172/3-A

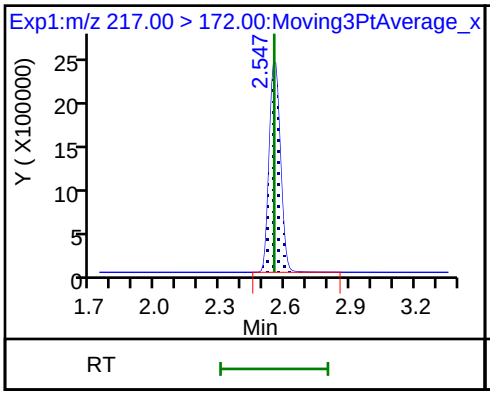
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 29 Worklist Smp#: 4

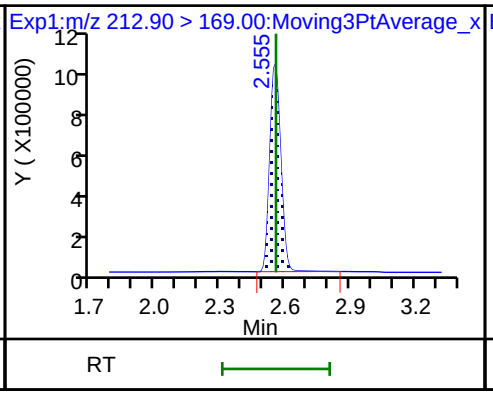
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

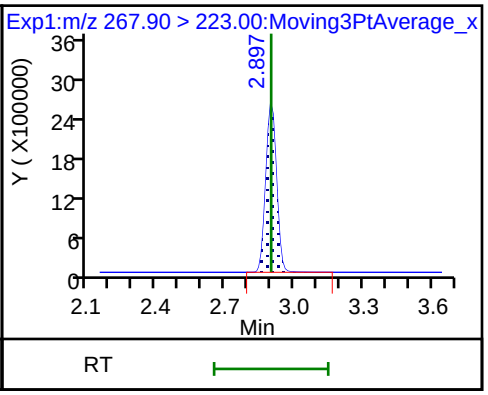
D 1 13C4 PFBA



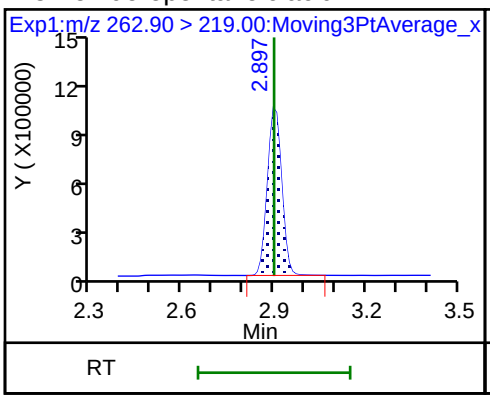
2 Perfluorobutanoic acid



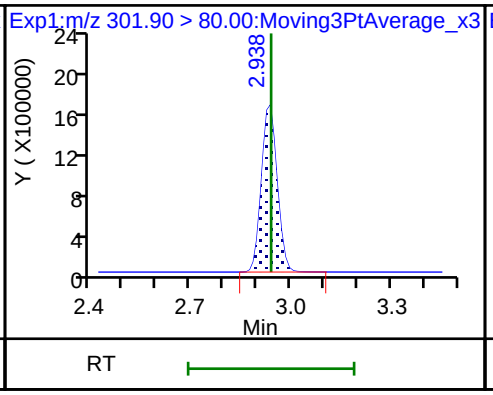
D 4 13C5 PFPeA



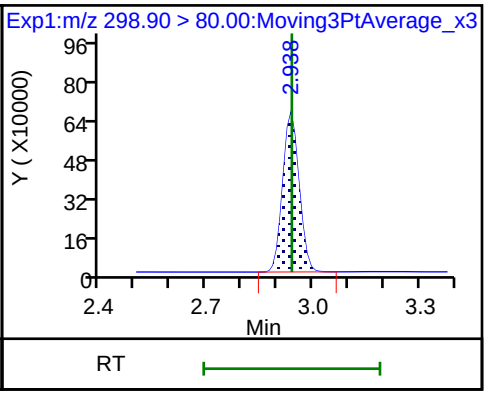
5 Perfluoropentanoic acid



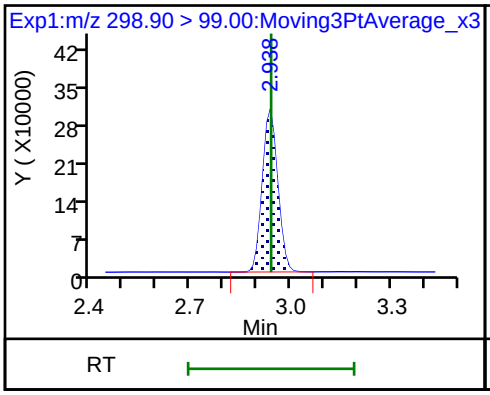
D 9 13C3 PFBS



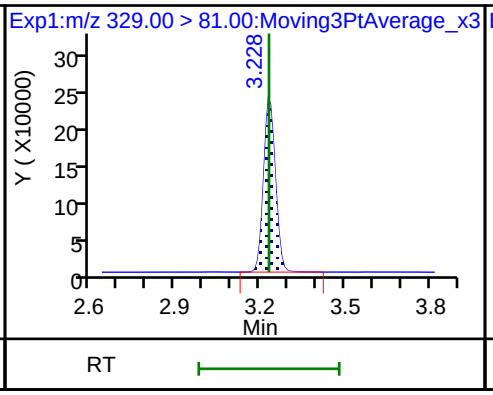
6 Perfluorobutanesulfonic acid



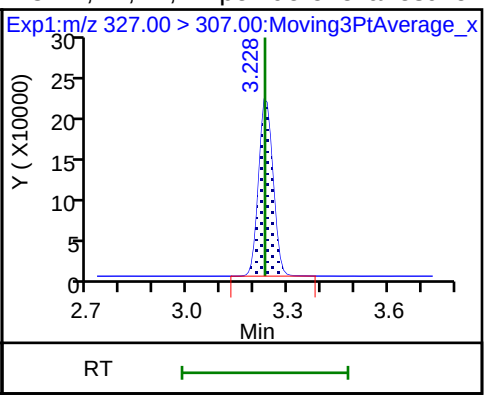
6 Perfluorobutanesulfonic acid



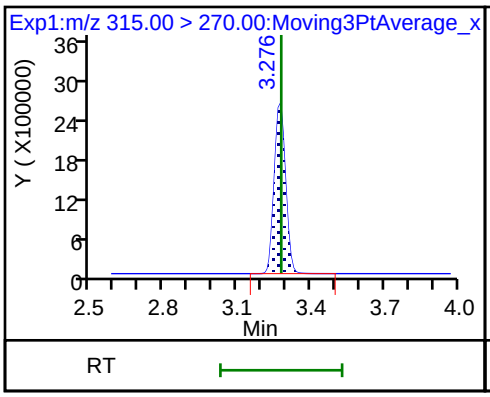
D 7 M2-4:2 FTS



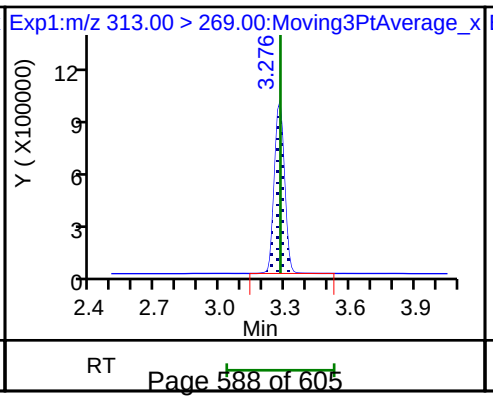
8 1H,1H,2H,2H-perfluorohexanesulfo



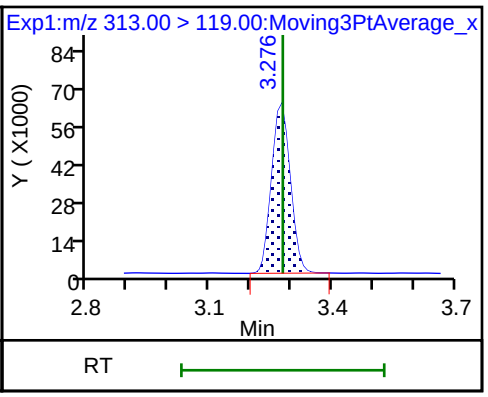
D 11 13C2 PFHxA



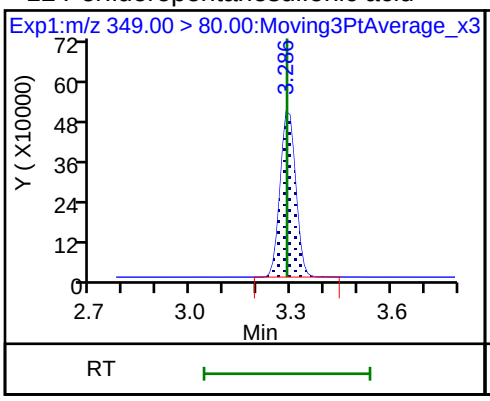
10 Perfluorohexanoic acid



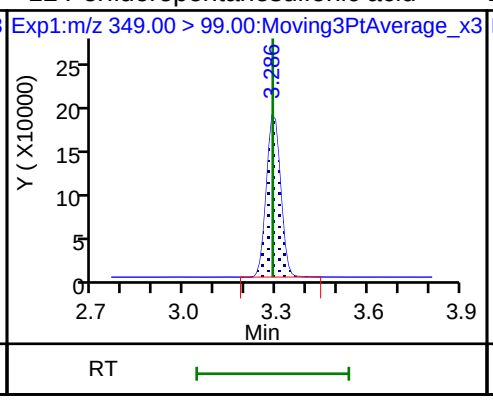
10 Perfluorohexanoic acid



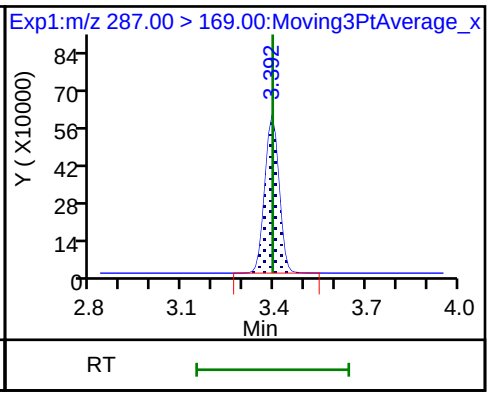
12 Perfluoropentanesulfonic acid



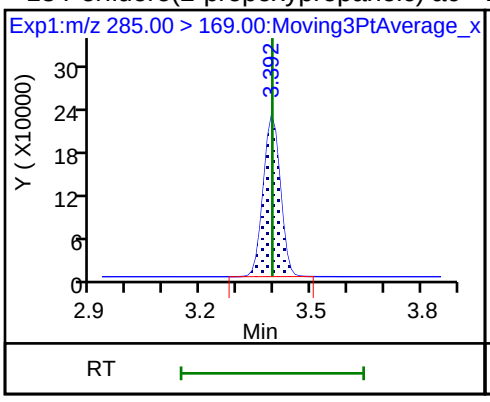
12 Perfluoropentanesulfonic acid



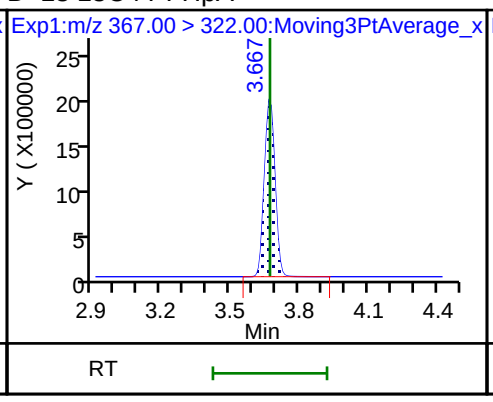
D 14 13C3 HFPO-DA



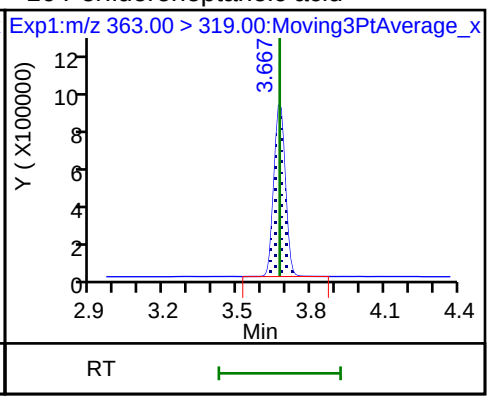
13 Perfluoro(2-propoxypropanoic) ac



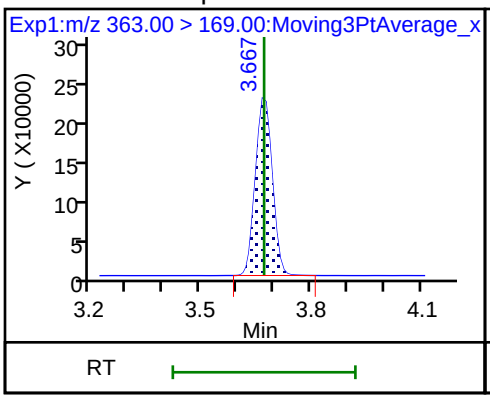
D 18 13C4 PFHpA



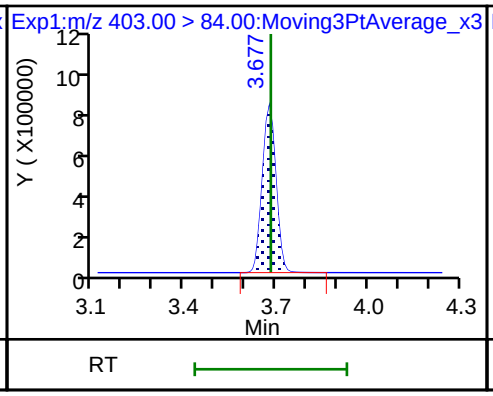
16 Perfluoroheptanoic acid



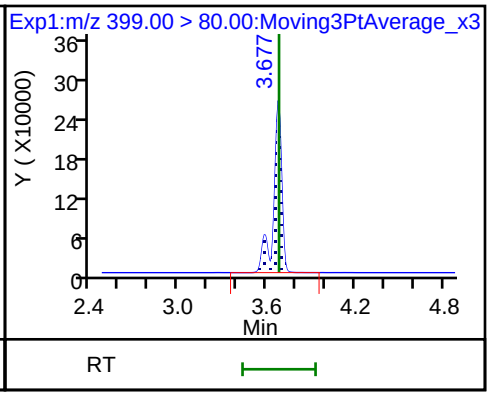
16 Perfluoroheptanoic acid



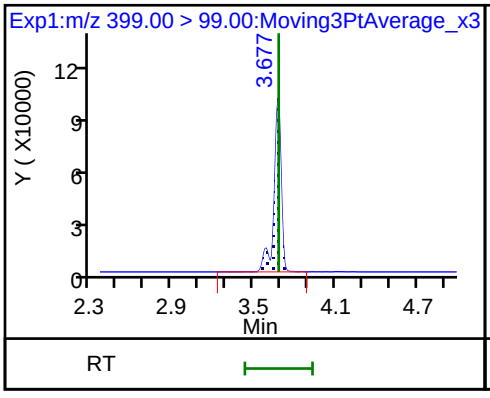
D 17 18O2 PFHxS



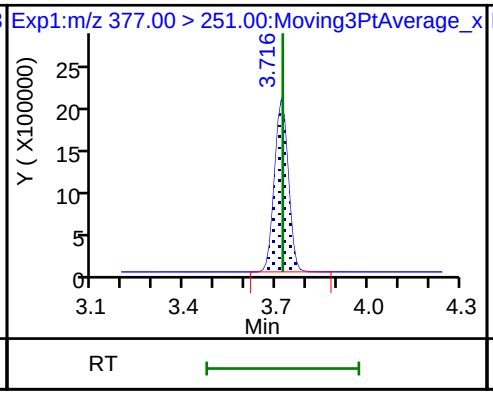
15 Perfluorohexanesulfonic acid



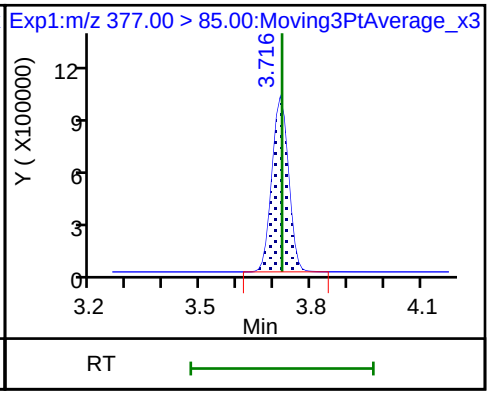
15 Perfluorohexanesulfonic acid



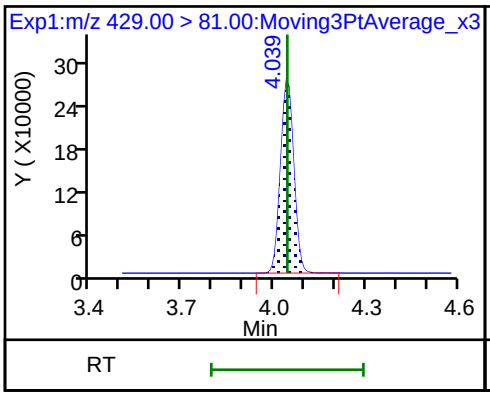
19 DONA



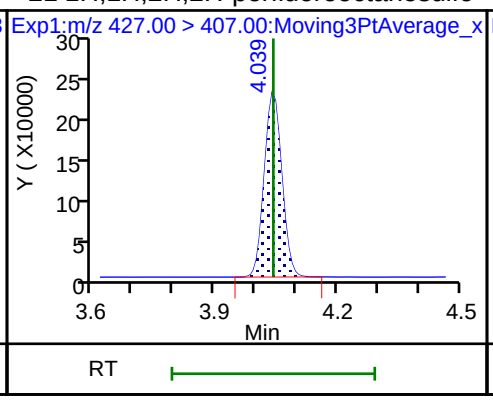
19 DONA



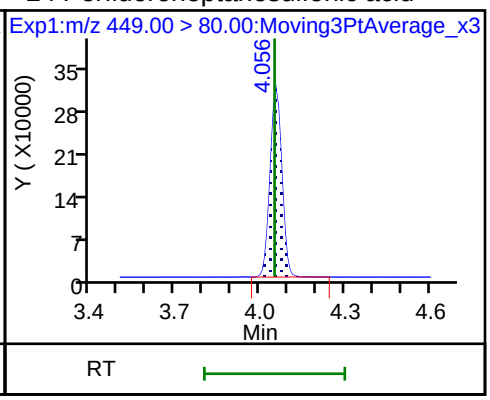
D 20 M2-6:2 FTS



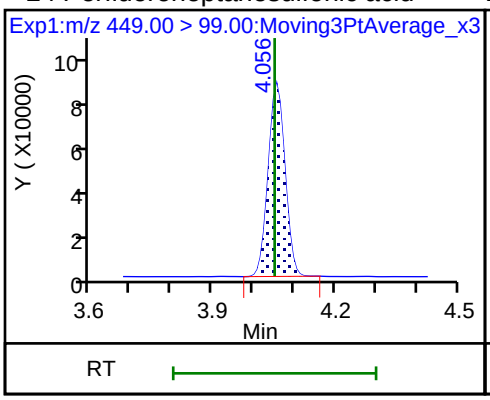
21 1H,1H,2H,2H-perfluorooctanesulfo



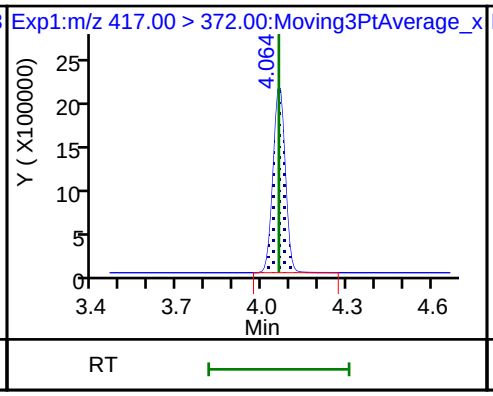
24 Perfluoroheptanesulfonic acid



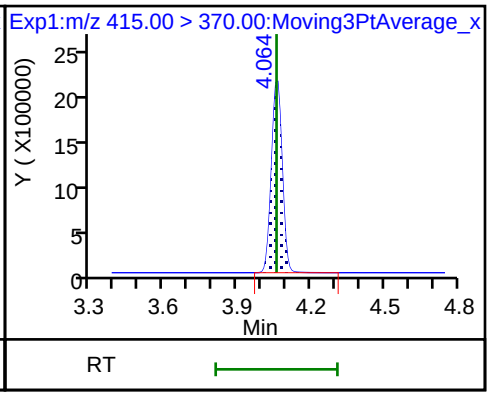
24 Perfluoroheptanesulfonic acid



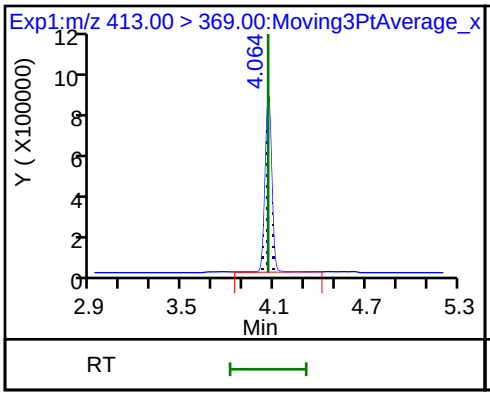
D 25 13C4 PFOA



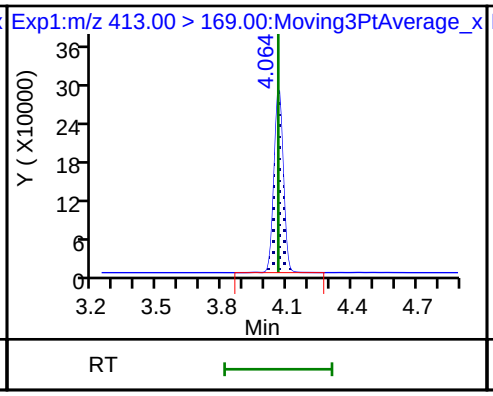
* 23 13C2 PFOA



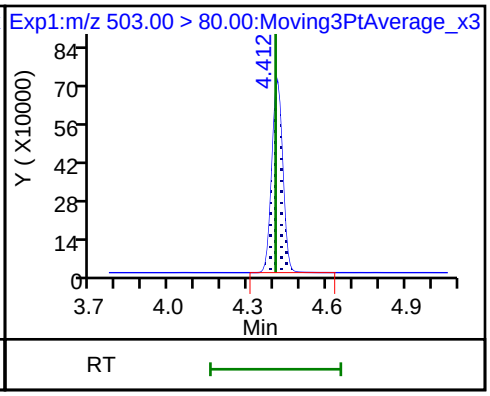
22 Perfluorooctanoic acid



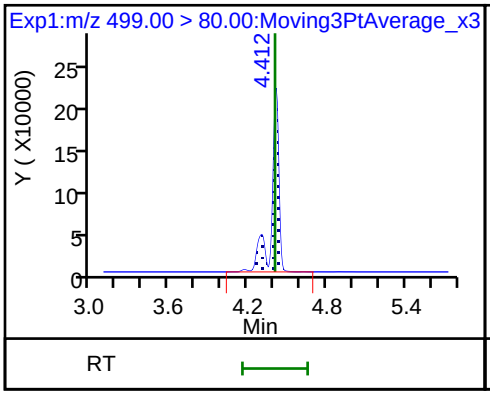
22 Perfluorooctanoic acid



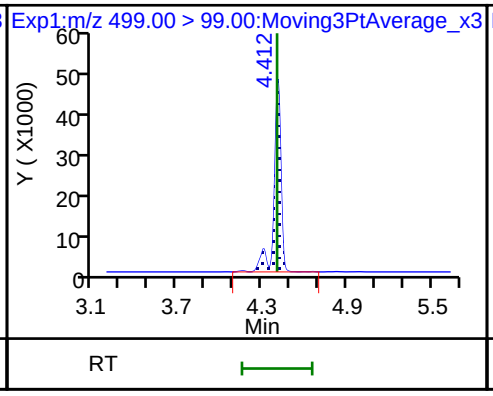
D 27 13C4 PFOS



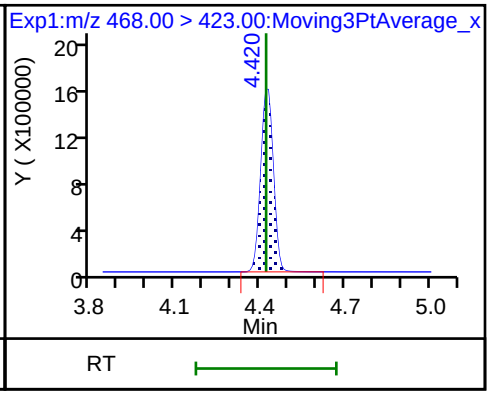
29 Perfluorooctanesulfonic acid



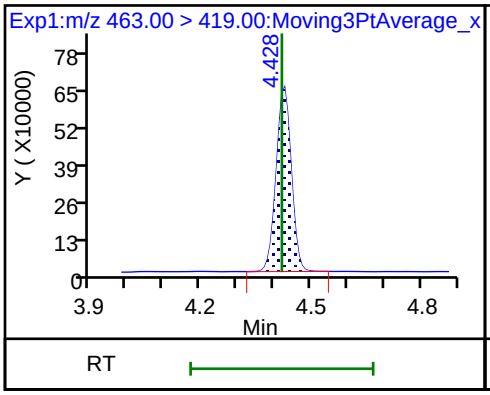
29 Perfluorooctanesulfonic acid



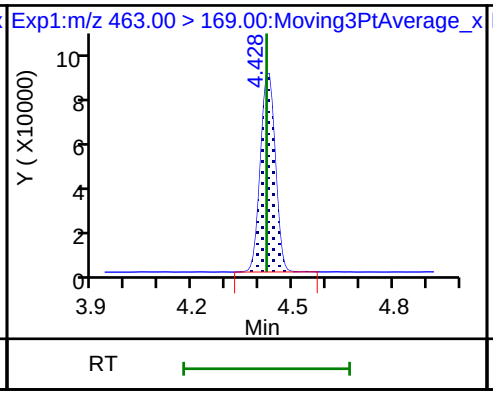
D 30 13C5 PFNA



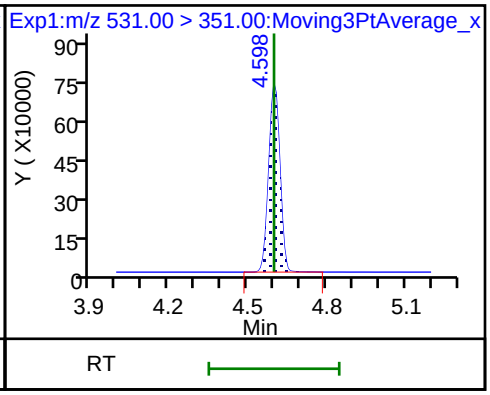
31 Perfluorononanoic acid



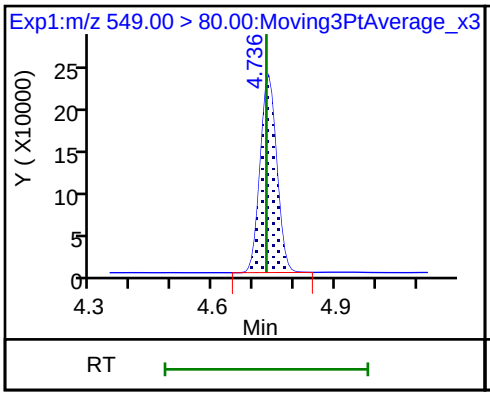
31 Perfluorononanoic acid



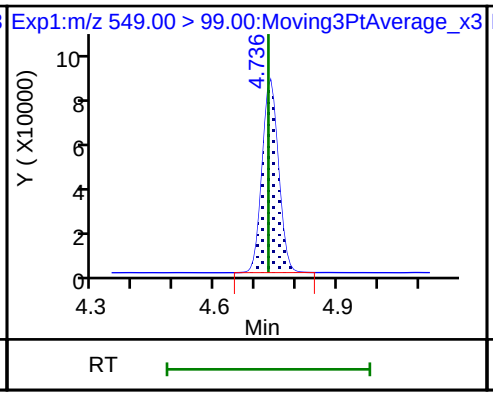
32 9-Chlorohexadecafluoro-3-oxanona



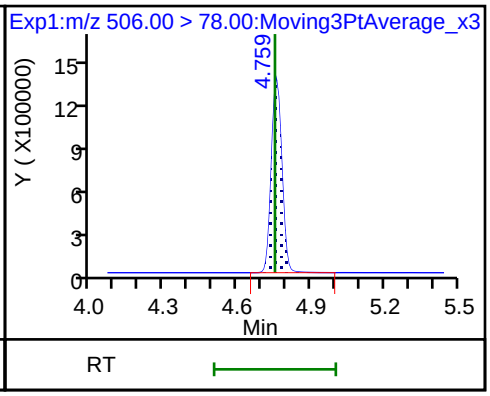
35 Perfluorononanesulfonic acid



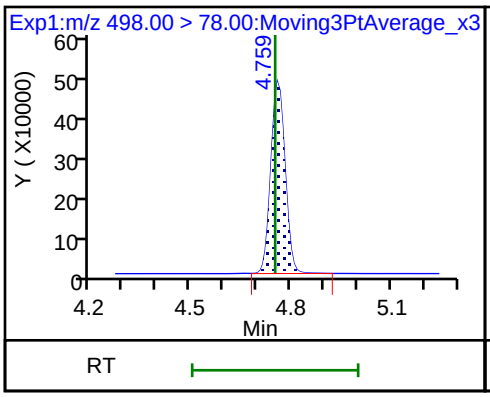
35 Perfluorononanesulfonic acid



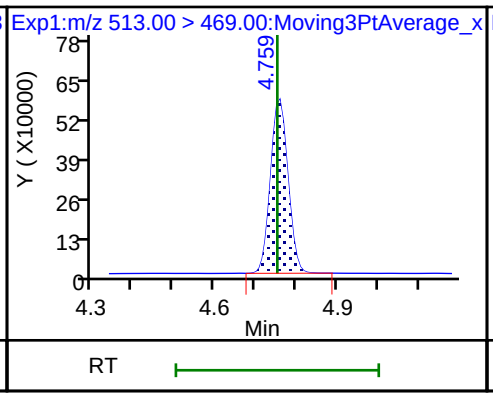
D 33 13C8 FOSA



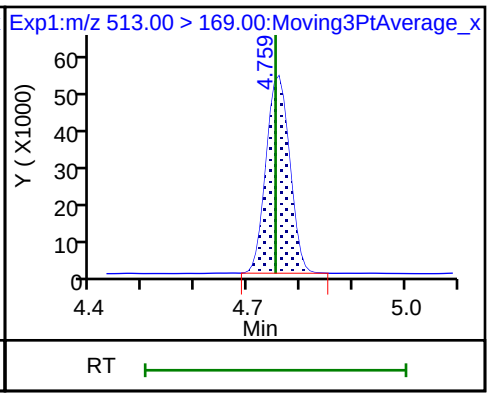
34 Perfluorooctanesulfonamide



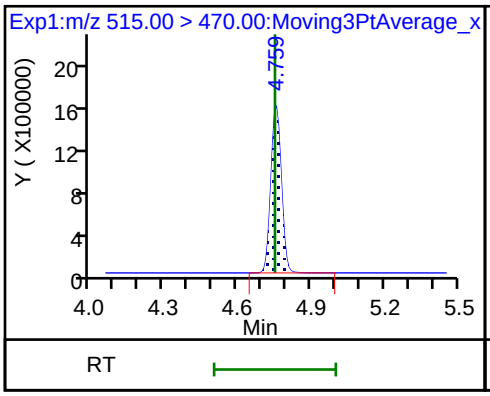
37 Perfluorodecanoic acid



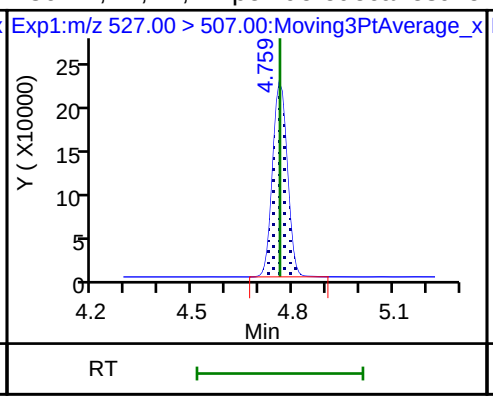
37 Perfluorodecanoic acid



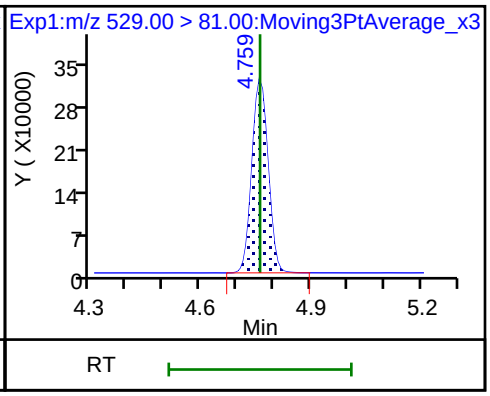
D 39 13C2 PFDA



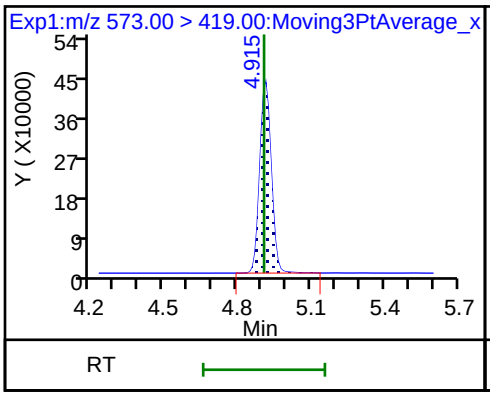
36 1H,1H,2H,2H-perfluorodecanesulfo



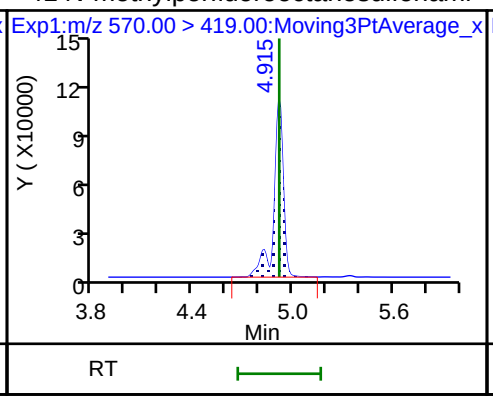
D 38 M2-8:2 FTS



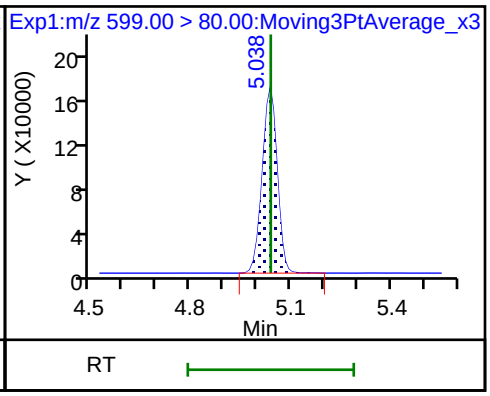
D 40 d3-NMeFOSAA



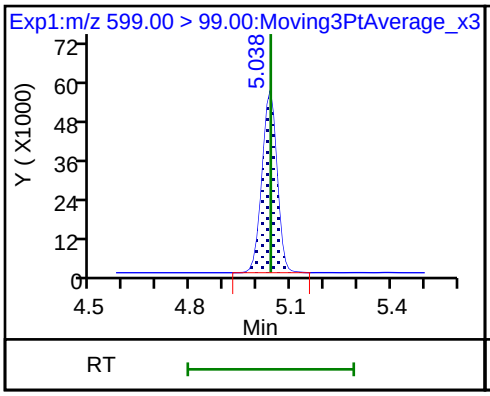
41 N-methylperfluorooctanesulfonami



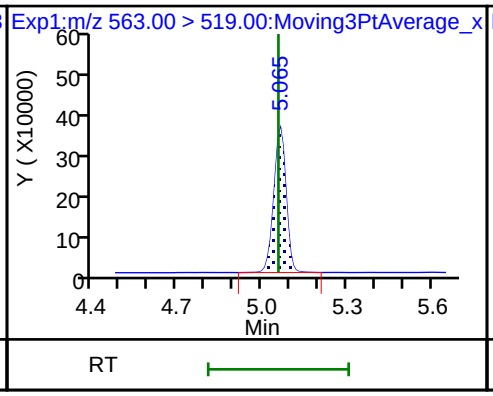
42 Perfluorodecanesulfonic acid



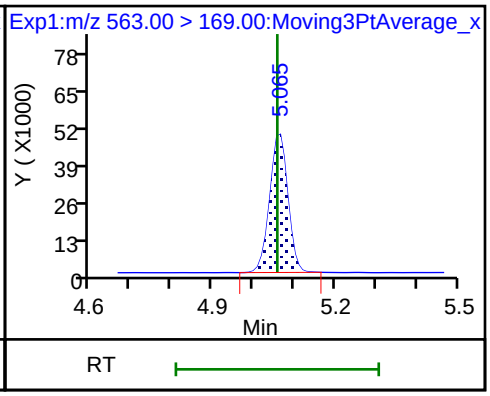
42 Perfluorodecanesulfonic acid



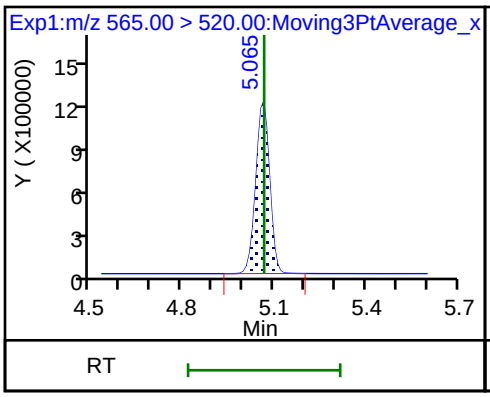
45 Perfluoroundecanoic acid



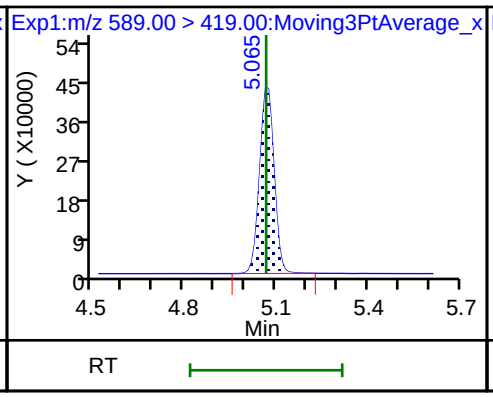
45 Perfluoroundecanoic acid



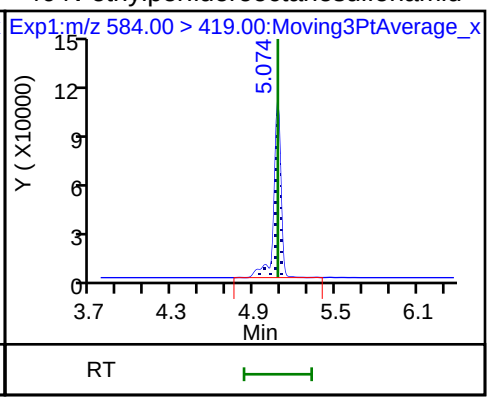
D 43 13C2 PFUnA



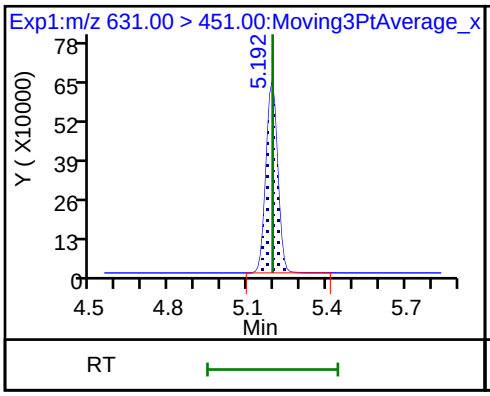
D 44 d5-NEtFOSAA



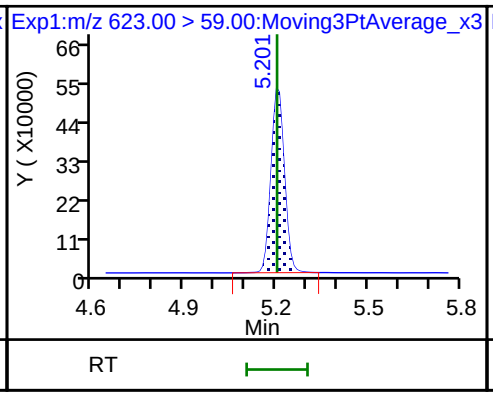
46 N-ethylperfluorooctanesulfonamid



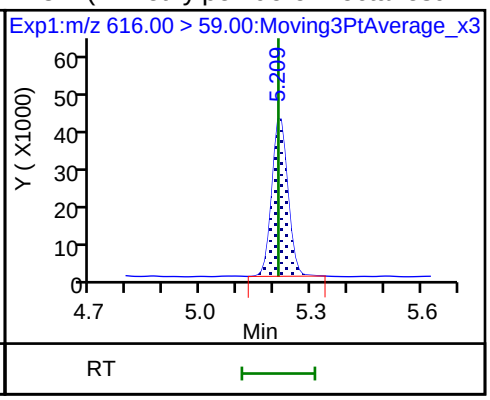
51 11-Chloroeicosafluoro-3-oxaundec



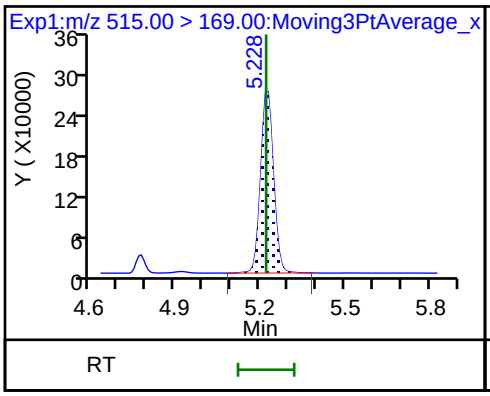
D 47 d7-N-MeFOSE-M



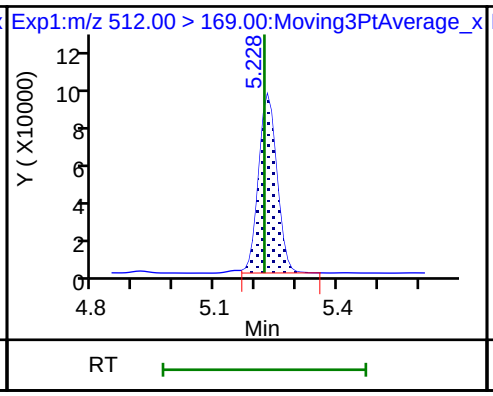
48 2-(N-methylperfluoro-1-octanesul



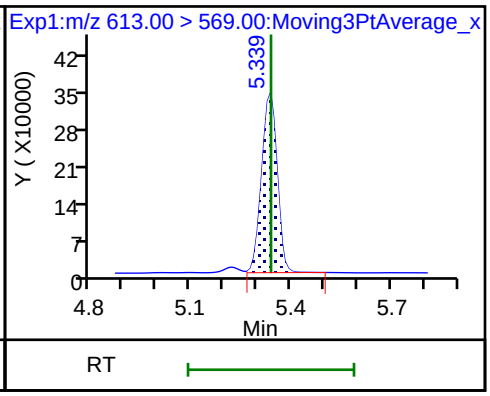
D 49 d-N-MeFOSA-M



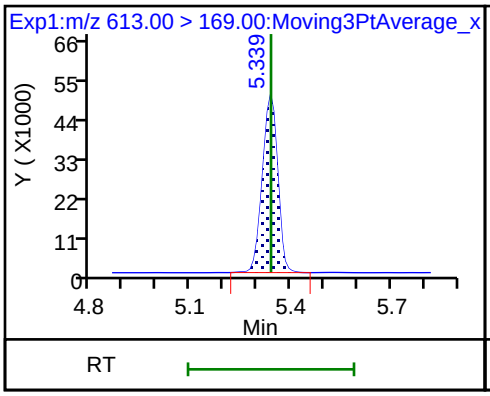
50 NMeFOSA



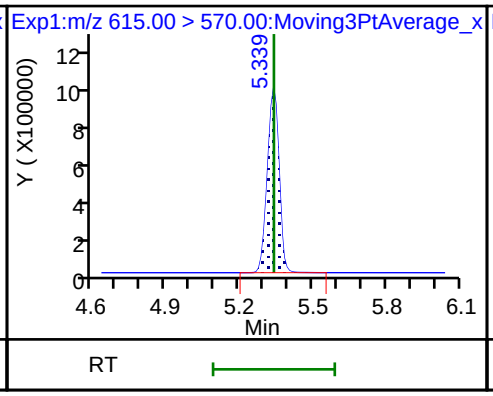
57 Perfluorododecanoic acid



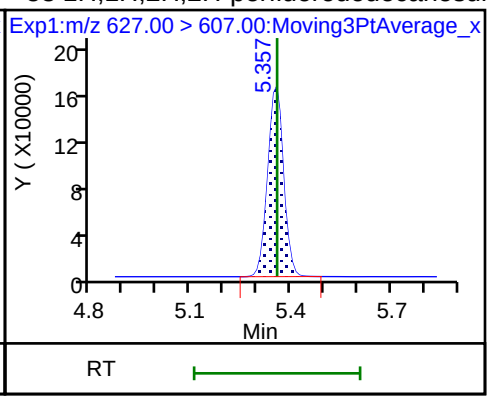
57 Perfluorododecanoic acid



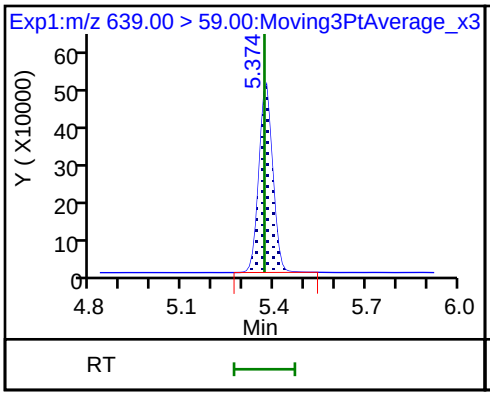
D 56 13C2 PFDoA



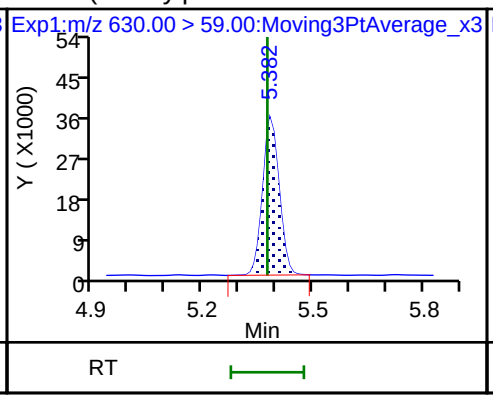
58 1H,1H,2H,2H-perfluorododecanesul



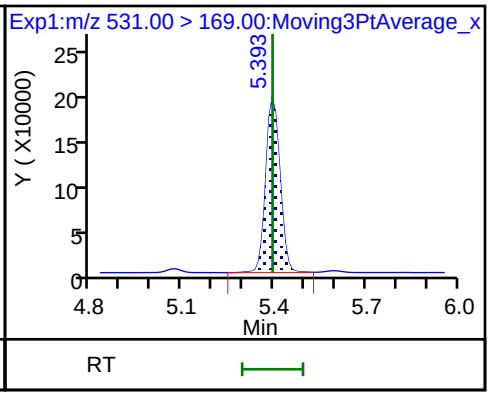
D 52 d9-N-EtFOSE-M



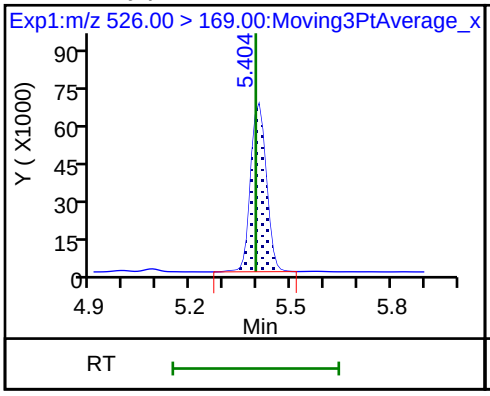
53 2-(N-ethylperfluoro-1-octanesulf



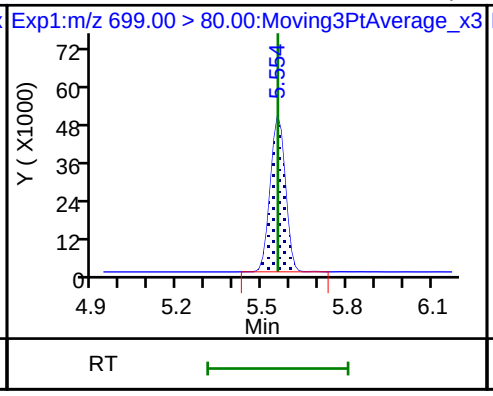
D 54 d-N-EtFOSA-M



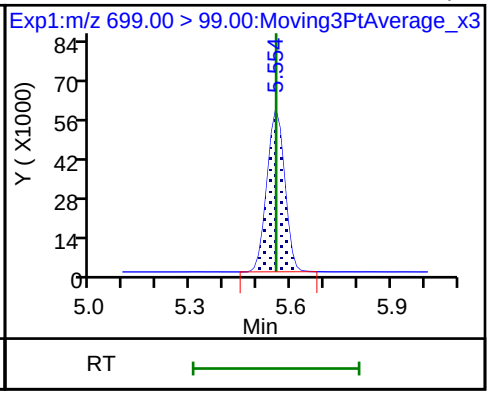
55 N-ethylperfluoro-1-octanesulfona



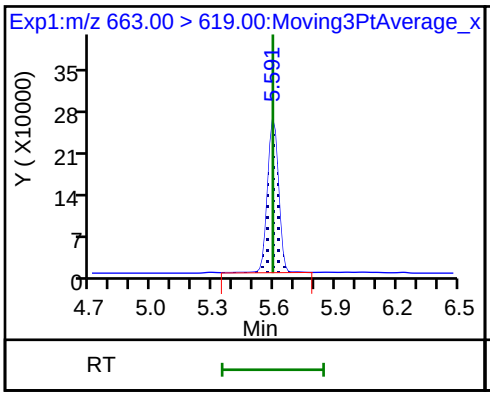
59 Perfluorododecanesulfonic acid (



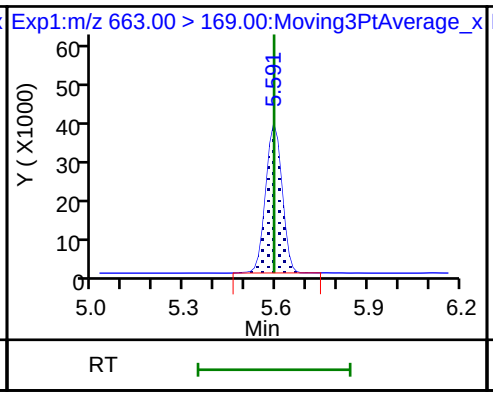
59 Perfluorododecanesulfonic acid (



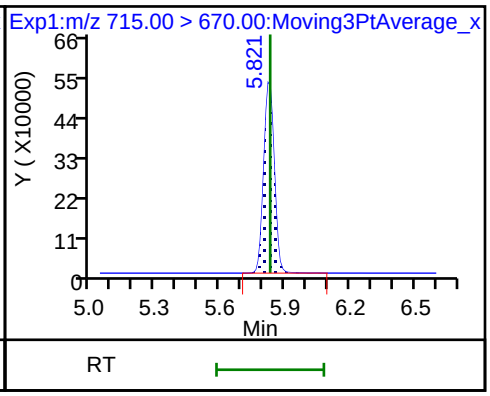
60 Perfluorotridecanoic acid



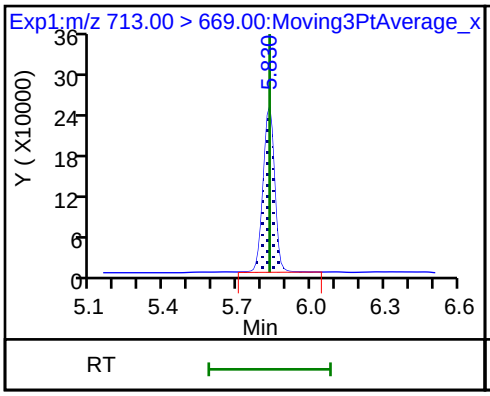
60 Perfluorotridecanoic acid



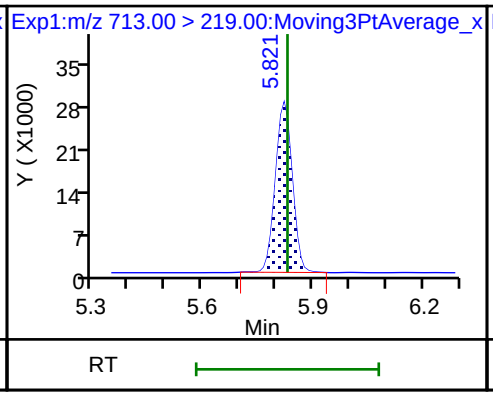
D 61 13C2 PFTeDA



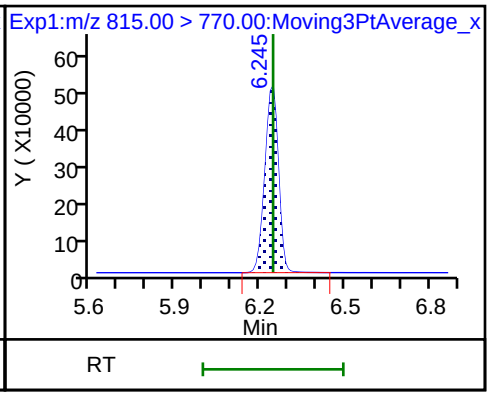
62 Perfluorotetradecanoic acid



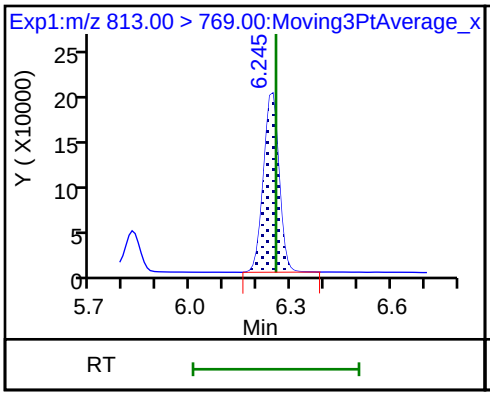
62 Perfluorotetradecanoic acid



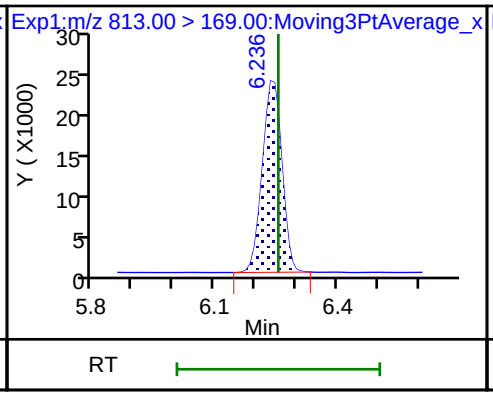
D 64 13C2 PFHxDA



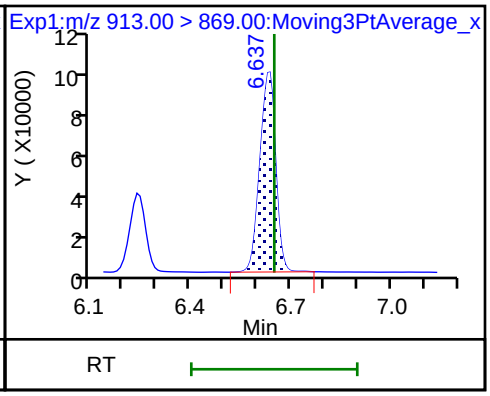
63 Perfluorohexadecanoic acid



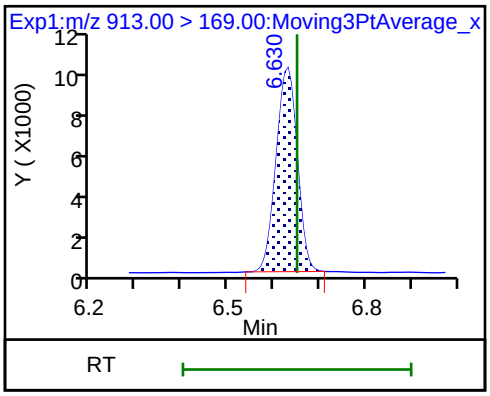
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Instrument ID: A15 Start Date: 06/04/2020 11:56

Analysis Batch Number: 383313 End Date: 06/04/2020 13:18

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-383313/2		06/04/2020 11:56	1	2020.06.04_A15_PFC_ICAL_A_004.d	Gemini C18 3x50 3(mm)
IC 320-383313/3		06/04/2020 12:06	1	2020.06.04_A15_PFC_ICAL_A_005.d	Gemini C18 3x50 3(mm)
IC 320-383313/4		06/04/2020 12:15	1	2020.06.04_A15_PFC_ICAL_A_006.d	Gemini C18 3x50 3(mm)
IC 320-383313/5 ICIS		06/04/2020 12:24	1	2020.06.04_A15_PFC_ICAL_A_007.d	Gemini C18 3x50 3(mm)
IC 320-383313/6		06/04/2020 12:33	1	2020.06.04_A15_PFC_ICAL_A_008.d	Gemini C18 3x50 3(mm)
IC 320-383313/7		06/04/2020 12:42	1	2020.06.04_A15_PFC_ICAL_A_009.d	Gemini C18 3x50 3(mm)
IC 320-383313/8		06/04/2020 12:51	1	2020.06.04_A15_PFC_ICAL_A_010.d	Gemini C18 3x50 3(mm)
ICB 320-383313/9		06/04/2020 13:00	1	2020.06.04_A15_PFC_ICAL_A_011.d	Gemini C18 3x50 3(mm)
ICV 320-383313/10		06/04/2020 13:09	1	2020.06.04_A15_PFC_ICAL_A_012.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 13:18	1		Gemini C18 3x50 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Instrument ID: A15 Start Date: 06/05/2020 00:27

Analysis Batch Number: 383791 End Date: 06/05/2020 05:37

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-383791/1		06/05/2020 00:27	1	2020.06.04_A15_PFC B 004.d	Gemini C18 3x50 3(mm)
CCVL 320-383791/2		06/05/2020 00:36	1	2020.06.04_A15_PFC B 005.d	Gemini C18 3x50 3(mm)
CCV 320-383791/3 CCVIS		06/05/2020 00:45	1	2020.06.04_A15_PFC B 006.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 00:54	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 01:03	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 01:12	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 01:21	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 01:30	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 01:40	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 01:49	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 01:58	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 02:07	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 02:16	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 02:25	1		Gemini C18 3x50 3(mm)
CCV 320-383791/15		06/05/2020 02:34	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 02:43	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 02:53	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 03:02	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 03:11	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 03:20	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 03:29	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 03:38	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 03:47	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 03:56	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 04:06	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 04:15	1		Gemini C18 3x50 3(mm)
CCV 320-383791/27		06/05/2020 04:24	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 04:33	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 04:42	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 04:51	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 05:00	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 05:09	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 05:19	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 05:28	1		Gemini C18 3x50 3(mm)
CCV 320-383791/35		06/05/2020 05:37	1		Gemini C18 3x50 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Instrument ID: A15 Start Date: 06/05/2020 05:46

Analysis Batch Number: 383803 End Date: 06/05/2020 09:06

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-383803/1		06/05/2020 05:46	1	2020.06.04_A15_PFC_B_039.d	Gemini C18 3x50 3(mm)
MB 320-383172/1-A		06/05/2020 05:55	1	2020.06.04_A15_PFC_B_040.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 06:04	1		Gemini C18 3x50 3(mm)
LCSD 320-383172/3-A		06/05/2020 06:13	1	2020.06.04_A15_PFC_B_042.d	Gemini C18 3x50 3(mm)
320-61353-1		06/05/2020 06:22	1	2020.06.04_A15_PFC_B_043.d	Gemini C18 3x50 3(mm)
320-61353-2		06/05/2020 06:31	1	2020.06.04_A15_PFC_B_044.d	Gemini C18 3x50 3(mm)
320-61353-3		06/05/2020 06:41	1	2020.06.04_A15_PFC_B_045.d	Gemini C18 3x50 3(mm)
320-61353-4		06/05/2020 06:50	1	2020.06.04_A15_PFC_B_046.d	Gemini C18 3x50 3(mm)
320-61353-5		06/05/2020 06:59	1	2020.06.04_A15_PFC_B_047.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 07:08	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 07:17	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 07:26	1		Gemini C18 3x50 3(mm)
CCV 320-383803/13		06/05/2020 07:35	1	2020.06.04_A15_PFC_B_051.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 07:44	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 07:53	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 08:03	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 08:12	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 08:21	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 08:30	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 08:39	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 08:48	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 08:57	1		Gemini C18 3x50 3(mm)
CCV 320-383803/23		06/05/2020 09:06	1		Gemini C18 3x50 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Instrument ID: A9 Start Date: 06/02/2020 15:24

Analysis Batch Number: 382530 End Date: 06/02/2020 16:58

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-382530/2		06/02/2020 15:24	1	2020.06.02_A9_PFC_ICAL_006.d	Acquity 2.1(mm)
IC 320-382530/3		06/02/2020 15:33	1	2020.06.02_A9_PFC_ICAL_007.d	Acquity 2.1(mm)
IC 320-382530/4		06/02/2020 15:43	1	2020.06.02_A9_PFC_ICAL_008.d	Acquity 2.1(mm)
IC 320-382530/5 ICIS		06/02/2020 15:52	1	2020.06.02_A9_PFC_ICAL_009.d	Acquity 2.1(mm)
IC 320-382530/6		06/02/2020 16:02	1	2020.06.02_A9_PFC_ICAL_010.d	Acquity 2.1(mm)
IC 320-382530/7		06/02/2020 16:11	1	2020.06.02_A9_PFC_ICAL_011.d	Acquity 2.1(mm)
IC 320-382530/9		06/02/2020 16:30	1	2020.06.02_A9_PFC_ICAL_013.d	Acquity 2.1(mm)
ICB 320-382530/10		06/02/2020 16:39	1	2020.06.02_A9_PFC_ICAL_014.d	Acquity 2.1(mm)
ICV 320-382530/11		06/02/2020 16:48	1	2020.06.02_A9_PFC_ICAL_015.d	Acquity 2.1(mm)
ZZZZZ		06/02/2020 16:58	1		Acquity 2.1(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Instrument ID: A9 Start Date: 06/08/2020 08:09

Analysis Batch Number: 384406 End Date: 06/08/2020 11:35

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-384406/1		06/08/2020 08:09	1	2020.06.08_A9_PFC.LLA_004.d	Acquity 2.1(mm)
CCVL 320-384406/2		06/08/2020 08:19	1	2020.06.08_A9_PFC.LLA_005.d	Acquity 2.1(mm)
CCV 320-384406/3 CCVIS		06/08/2020 08:28	1	2020.06.08_A9_PFC.LLA_006.d	Acquity 2.1(mm)
ZZZZZ		06/08/2020 10:01	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 10:11	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 10:20	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 10:29	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 10:39	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 10:48	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 10:57	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 11:07	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 11:16	1		Acquity 2.1(mm)
CCV 320-384406/13		06/08/2020 11:35	1		Acquity 2.1(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61353-1

SDG No.: 70132491

Instrument ID: A9 Start Date: 06/08/2020 15:19

Analysis Batch Number: 384478 End Date: 06/08/2020 17:39

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-384478/1		06/08/2020 15:19	1	2020.06.08_A9_PFC.B_006.d	Acquity 2.1(mm)
ZZZZZ		06/08/2020 15:29	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 15:38	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 15:47	1		Acquity 2.1(mm)
LCS 320-383172/2-A		06/08/2020 15:57	1	2020.06.08_A9_PFC.B_010.d	Acquity 2.1(mm)
ZZZZZ		06/08/2020 16:06	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 16:15	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 16:25	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 16:34	10		Acquity 2.1(mm)
ZZZZZ		06/08/2020 16:43	1		Acquity 2.1(mm)
ZZZZZ		06/08/2020 16:53	10		Acquity 2.1(mm)
CCV 320-384478/12		06/08/2020 17:02	1	2020.06.08_A9_PFC.B_017.d	Acquity 2.1(mm)
ZZZZZ		06/08/2020 17:11	10		Acquity 2.1(mm)
ZZZZZ		06/08/2020 17:21	10		Acquity 2.1(mm)
ZZZZZ		06/08/2020 17:30	10		Acquity 2.1(mm)
CCV 320-384478/16		06/08/2020 17:39	1		Acquity 2.1(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-61353-1

SDG No.: 70132491

Batch Number: 383172 Batch Start Date: 06/03/20 18:42 Batch Analyst: Pham, Vince

Batch Method: 3535 Batch End Date: 06/04/20 01:50

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC_IDA 00134	LCPFC-IS 00383
MB 320-383172/1		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
LCS 320-383172/2		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
LCSD 320-383172/3		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
320-61353-A-1	NNU PLCRS	3535, 537 (modified)	T	312.96 g	26.10 g	286.9 mL	10.00 mL	500 uL	500 uL
320-61353-A-2	NNU SLCRS	3535, 537 (modified)	T	282.97 g	29.34 g	253.6 mL	10.00 mL	500 uL	500 uL
320-61353-A-3	ONU SLCRS	3535, 537 (modified)	T	276.24 g	28.84 g	247.4 mL	10.00 mL	500 uL	500 uL
320-61353-A-4	SA SLCRS	3535, 537 (modified)	T	280.46 g	29.18 g	251.3 mL	10.00 mL	500 uL	500 uL
320-61353-A-5	EQUIPMENT BLANK	3535, 537 (modified)	T	308.00 g	28.22 g	279.8 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00300	AnalysisComment				
MB 320-383172/1		3535, 537 (modified)							
LCS 320-383172/2		3535, 537 (modified)		500 uL					
LCSD 320-383172/3		3535, 537 (modified)		500 uL					
320-61353-A-1	NNU PLCRS	3535, 537 (modified)	T		Clogged. Bottle + remaining sample = 46.74g				
320-61353-A-2	NNU SLCRS	3535, 537 (modified)	T						
320-61353-A-3	ONU SLCRS	3535, 537 (modified)	T						
320-61353-A-4	SA SLCRS	3535, 537 (modified)	T		Cloudy at FV.				
320-61353-A-5	EQUIPMENT BLANK	3535, 537 (modified)	T						

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

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-61353-1

SDG No.: 70132491

Batch Number: 383172 Batch Start Date: 06/03/20 18:42 Batch Analyst: Pham, Vince

Batch Method: 3535 Batch End Date: 06/04/20 01:50

Batch Notes	
Balance ID	QA-081
Batch Comment	Client and sample IDs match - VP. 06/03/20. Centrifuge tube lot # 11120107.
First End time	06/04/2020 01:50
H2O ID	06/03/20
Hexane ID	2017508
Manifold ID	BQ, MN
Methanol ID	2017500
Sodium Hydroxide ID	2015373
Pipette/Syringe/Dispenser ID	j38939i
Analyst ID - Reagent Drop	VP
Analyst ID - IS Reagent Drop	VP
Analyst ID - IS Reagent Drop Witness	JCN
Solvent Lot #	2012305
Solvent Name	0.3% NH4OH/MeOH
SPE Cartridge Lot ID	004338233A
SPE Cartridge Type	Oasis 6cc/500mg WAX
First Start time	06/03/2020 18:42

Basis	Basis Description
T	Total/NA

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

Shipping and Receiving Documents

Chain of Custody

PASI New York Laboratory

Pace Analytical®
www.pacelabs.com

Workorder: 70132491 **Workorder Name:** LEACHATE BASELINE 5/28 **Results Requested By:** 6/11/2020

Report / Invoice To	Subcontract To
Jennifer Aracri Pace Analytical Melville 575 Broad Hollow Road Melville, NY 11747 Phone (631)694-3040 Email: jennifer.aracri@pacelabs.com	TA Eurofins-Sacramento 880 Riverside Pkwy West Sacramento, CA 95605 P.O. 70132491JSA

State of Sample Origin: NY

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved						Requested Analysis: PFAS by 537												LAB USE ONLY
1	NNU PLCRS	5/28/2020 13:20	70132491001	Water							X												
2	NNU SLCRS	5/28/2020 13:40	70132491002	Water							X												
3	ONU SLCRS	5/28/2020 13:50	70132491003	Water							X												
4	SA SLCRS	5/28/2020 11:20	70132491004	Water							X												
5	EQUIPMENT BLANK	5/28/2020 11:30	70132491005	Water							X												

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	6/1/20 [illegible]	eta sac	06/02/20 925
2				
3				

Comments

Needs a Category B package with EQuIS EDDs

Cooler Temperature on Receipt 2-8 °C 2.4°C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

320-61353 Chain of Custody

Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 320-61353-1
SDG Number: 70132491

Login Number: 61353
List Number: 1
Creator: Guzman, Juan

List Source: Eurofins TestAmerica, Sacramento

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

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

July 02, 2020

Joe Guarino
Town of Babylon
281 Phelps Lane
North Babylon, NY 11703

RE: Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Dear Joe Guarino:

Enclosed are the analytical results for sample(s) received by the laboratory on May 28, 2020. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses were subcontracted outside of the Pace Network. The test report from the external subcontractor is attached to this report in its entirety.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Melville
- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jennifer Aracri
jennifer.aracri@pacelabs.com
(631)694-3040
Project Manager

Enclosures

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

CERTIFICATIONS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Pace Analytical Services Pennsylvania

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Guam Certification
Florida: Cert E871149 SEKS WET
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services Long Island

575 Broad Hollow Rd, Melville, NY 11747
New York Certification #: 10478 Primary Accrediting Body
New Jersey Certification #: NY158
Pennsylvania Certification #: 68-00350
Connecticut Certification #: PH-0435
Maryland Certification #: 208
Rhode Island Certification #: LAO00340
Massachusetts Certification #: M-NY026
New Hampshire Certification #: 2987

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

SAMPLE ANALYTE COUNT

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
70132489001	**CELL 7 PLCRS**	EPA 8081B	JMD	20	PACE-MV
		EPA 8082A	JMD	9	PACE-MV
		EPA 8151A	MJM	5	PACE-MV
		EPA 6010C	JMW	24	PACE-MV
		EPA 7470A	JLN	1	PACE-MV
		EPA 8270D	RP1	117	PACE-MV
		EPA 8260C SIM/5030C	BBL	3	PACE-MV
		EPA 8260C/5030C	BBL	70	PACE-MV
		EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		ASTM D5174-97	RMK	1	PASI-PA
		SM22 2120B	DJM	2	PACE-MV
		SM22 2320B	KM1	1	PACE-MV
		SM22 2340C	KS1	1	PACE-MV
		SM22 2540C	KS1	1	PACE-MV
		SM22 3500-Cr B	KM1	1	PACE-MV
		EPA 410.4	JCA	1	PACE-MV
		SM22 5210B	VNS	1	PACE-MV
		EPA 9034	JM3	1	PACE-MV
		EPA 300.0	BNK, BP1	3	PACE-MV
		EPA 351.2	AKS	1	PACE-MV
		EPA 353.2	PGL	2	PACE-MV
		EPA 353.2	PGL	1	PACE-MV
		EPA 420.1	KS1	1	PACE-MV
		SM22 4500 NH3 H	BNK	1	PACE-MV
		EPA 9014 Total Cyanide	JM3	1	PACE-MV
		EPA 9060A	KM1	5	PACE-MV

PACE-MV = Pace Analytical Services - Melville
PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8081B**
Description: 8081 GCS Pesticides
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 8081B by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8082A**
Description: 8082 GCS PCB
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 8082A by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8151A**
Description: 8151A Chlorinated Herbicides
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 8151A by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 8151A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163006

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132489001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 785511)
  - Dinoseb

Additional Comments:

Analyte Comments:

QC Batch: 163006

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 785511)
  - Dinoseb

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 6010C**
Description: 6010 MET ICP
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 6010C by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3005A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163143

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132491003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 785941)
  - Silver

M6: Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.

- MS (Lab ID: 785941)
  - Calcium

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 7470A**
Description: 7470 Mercury
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 7470A by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8270D**
Description: 8270 MSSV
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 8270D by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H2: Extraction or preparation conducted outside EPA method holding time.
- CELL 7 PLCRS (Lab ID: 70132489001)

Sample Preparation:
The samples were prepared in accordance with EPA 3510C with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: 163797

IC: The initial calibration for this compound was outside of method control limits. The result is estimated.
- BLANK (Lab ID: 790034)
  - Famphur
  - Kepone
  - Methapyrilene
- CELL 7 PLCRS (Lab ID: 70132489001)
  - Famphur
  - Kepone
  - Methapyrilene
- LCS (Lab ID: 790035)
  - Famphur
  - Kepone
  - Methapyrilene
- MS (Lab ID: 790076)
  - Famphur
  - Kepone
  - Methapyrilene

IL: This analyte exceeded secondary source verification criteria low for the initial calibration. The reported results should be considered an estimated value.
- BLANK (Lab ID: 790034)
  - 1-Naphthylamine
  - 2,2'-Oxybis(1-chloropropane)
  - 3,3'-Dimethylbenzidine
  - 4-Aminobiphenyl
  - Famphur
  - Kepone
  - p-Phenylenediamine
- CELL 7 PLCRS (Lab ID: 70132489001)

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8270D**
Description: 8270 MSSV
Client: Town of Babylon
Date: July 02, 2020

QC Batch: 163797

IL: This analyte exceeded secondary source verification criteria low for the initial calibration. The reported results should be considered an estimated value.

- 1-Naphthylamine
- 2,2'-Oxybis(1-chloropropane)
- 3,3'-Dimethylbenzidine
- 4-Aminobiphenyl
- Famphur
- Kepone
- p-Phenylenediamine

- LCS (Lab ID: 790035)
  - 1-Naphthylamine
  - 2,2'-Oxybis(1-chloropropane)
  - 3,3'-Dimethylbenzidine
  - 4-Aminobiphenyl
  - Famphur
  - Kepone
  - p-Phenylenediamine
- MS (Lab ID: 790076)
  - 1-Naphthylamine
  - 2,2'-Oxybis(1-chloropropane)
  - 3,3'-Dimethylbenzidine
  - 4-Aminobiphenyl
  - Famphur
  - Kepone
  - p-Phenylenediamine

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 163797

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BLANK (Lab ID: 790034)
  - 1,4-Naphthoquinone
  - 2,2'-Oxybis(1-chloropropane)
  - Famphur
  - Kepone
- CELL 7 PLCRS (Lab ID: 70132489001)
  - 1,4-Naphthoquinone
  - 2,2'-Oxybis(1-chloropropane)
  - Famphur
  - Kepone
- LCS (Lab ID: 790035)
  - 1,4-Naphthoquinone
  - 2,2'-Oxybis(1-chloropropane)
  - Famphur

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8270D**
Description: 8270 MSSV
Client: Town of Babylon
Date: July 02, 2020

QC Batch: 163797

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- Kepone
- MS (Lab ID: 790076)
  - 1,4-Naphthoquinone
  - 2,2'-Oxybis(1-chloropropane)
  - Famphur
  - Kepone

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 163797

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 790035)
  - 1-Naphthylamine
  - 2,6-Dichlorophenol
  - 3-Nitroaniline
  - Acetophenone
  - N-Nitrosodiphenylamine

L2: Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.

- LCS (Lab ID: 790035)
  - Kepone
  - p-Phenylenediamine

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163797

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70133599006

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 790076)
  - 1-Naphthylamine
  - Kepone
  - N-Nitrosodiphenylamine

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8270D**
Description: 8270 MSSV
Client: Town of Babylon
Date: July 02, 2020

QC Batch: 163797

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70133599006

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- p-Phenylenediamine

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 790076)
  - 2-Acetylaminofluorene
  - 2-Naphthylamine
  - 3,3'-Dichlorobenzidine
  - 3,3'-Dimethylbenzidine
  - 4-Aminobiphenyl
  - 5-Nitro-o-toluidine
  - Famphur
  - Methapyrilene
  - N-Nitroso-di-n-butylamine
  - N-Nitrosodiethylamine
  - N-Nitrosomethylethylamine
  - N-Nitrosopiperidine
  - N-Nitrosopyrrolidine
  - O-Toluidine
  - P-Dimethylaminoazobenzene

Additional Comments:

Analyte Comments:

QC Batch: 163797

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 790076)
  - Famphur

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8260C SIM/5030C**
Description: 8260C SIM Volatile Organics
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 8260C SIM/5030C by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8260C/5030C**
Description: 8260C Volatile Organics
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 8260C/5030C by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

QC Batch: 163393

IC: The initial calibration for this compound was outside of method control limits. The result is estimated.

- BLANK (Lab ID: 787417)
  - Acetone
- CELL 7 PLCRS (Lab ID: 70132489001)
  - Acetone
- LCS (Lab ID: 787418)
  - Acetone
- MS (Lab ID: 787419)
  - Acetone
- MSD (Lab ID: 787420)
  - Acetone

IH: This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.

- LCS (Lab ID: 787418)
  - Acrolein
- MS (Lab ID: 787419)
  - Acrolein
- MSD (Lab ID: 787420)
  - Acrolein

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

QC Batch: 163393

CH: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

- LCS (Lab ID: 787418)
  - Vinyl chloride
- MS (Lab ID: 787419)
  - Vinyl chloride
- MSD (Lab ID: 787420)
  - Vinyl chloride

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- BLANK (Lab ID: 787417)

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8260C/5030C**
Description: 8260C Volatile Organics
Client: Town of Babylon
Date: July 02, 2020

QC Batch: 163393

CL: The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.

- 2-Butanone (MEK)

- CELL 7 PLCRS (Lab ID: 70132489001)
  - 2-Butanone (MEK)
- LCS (Lab ID: 787418)
  - 2-Butanone (MEK)
- MS (Lab ID: 787419)
  - 2-Butanone (MEK)
- MSD (Lab ID: 787420)
  - 2-Butanone (MEK)

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 163393

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 787418)
  - 1,1,1,2-Tetrachloroethane
  - cis-1,3-Dichloropropene

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163393

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132491003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 787419)
  - Acrolein
  - trans-1,4-Dichloro-2-butene
- MSD (Lab ID: 787420)
  - Acrolein
  - trans-1,4-Dichloro-2-butene

R1: RPD value was outside control limits.

- MSD (Lab ID: 787420)

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 8260C/5030C**
Description: 8260C Volatile Organics
Client: Town of Babylon
Date: July 02, 2020

QC Batch: 163393

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132491003

R1: RPD value was outside control limits.

- Bromomethane
- Iodomethane

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **ASTM D5174-97**
Description: D517497 Total Uranium KPA
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for ASTM D5174-97 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **SM22 2120B**
Description: 2120B W Apparent Color
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for SM22 2120B by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **SM22 2320B**
Description: 2320B Alkalinity
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for SM22 2320B by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163705

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132491003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 789430)
  - Alkalinity, Total as CaCO3

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **SM22 2340C**
Description: 2340C Hardness, Total
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for SM22 2340C by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **SM22 2540C**
Description: 2540C Total Dissolved Solids
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for SM22 2540C by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **SM22 3500-Cr B**
Description: Chromium, Hexavalent
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for SM22 3500-Cr B by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 410.4**
Description: 410.4 COD
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 410.4 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 410.4 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163807

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132220004,70132491003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 790052)
  - Chemical Oxygen Demand

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **SM22 5210B**
Description: 5210B BOD, 5 day
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for SM22 5210B by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with SM22 5210B with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 9034**
Description: 9034 Sulfide, Titration
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 9034 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 9030B with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 300.0**
Description: 300.0 IC Anions 28 Days
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 300.0 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163757

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132541001,70133362003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 789852)
  - Chloride

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 351.2**
Description: 351.2 Total Kjeldahl Nitrogen
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 351.2 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 351.2 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 163792

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132408002,70132491003

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 790024)
  - Nitrogen, Kjeldahl, Total
- MS (Lab ID: 790026)
  - Nitrogen, Kjeldahl, Total

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2/NO3 pres.
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 353.2 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 353.2**
Description: 353.2 Nitrogen, NO2
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 353.2 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 162438

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 70132478001,70132491001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 782445)
  - Nitrite as N

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 420.1**
Description: Phenolics, Total Recoverable
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 420.1 by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 420.1 with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **SM22 4500 NH3 H**
Description: 4500 Ammonia Water
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for SM22 4500 NH3 H by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 9014 Total Cyanide**
Description: 9014 Cyanide, Total
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 9014 Total Cyanide by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 9010C with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

PROJECT NARRATIVE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Method: **EPA 9060A**
Description: 9060A TOC as NPOC
Client: Town of Babylon
Date: July 02, 2020

General Information:
1 sample was analyzed for EPA 9060A by Pace Analytical Services Melville. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Sample: CELL 7 PLCRS **Lab ID: 70132489001** Collected: 05/28/20 12:10 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides	Analytical Method: EPA 8081B Preparation Method: EPA 3510C Pace Analytical Services - Melville							
Aldrin	**<0.050**	ug/L	0.050	1	06/03/20 18:08	06/10/20 12:35	309-00-2	L1
alpha-BHC	**<0.050**	ug/L	0.050	1	06/03/20 18:08	06/10/20 12:35	319-84-6	
beta-BHC	**<0.050**	ug/L	0.050	1	06/03/20 18:08	06/10/20 12:35	319-85-7	
delta-BHC	**<0.050**	ug/L	0.050	1	06/03/20 18:08	06/10/20 12:35	319-86-8	
gamma-BHC (Lindane)	**<0.050**	ug/L	0.050	1	06/03/20 18:08	06/10/20 12:35	58-89-9	
4,4'-DDD	**<0.10**	ug/L	0.10	1	06/03/20 18:08	06/10/20 12:35	72-54-8	
4,4'-DDE	**<0.10**	ug/L	0.10	1	06/03/20 18:08	06/10/20 12:35	72-55-9	
4,4'-DDT	**<0.10**	ug/L	0.10	1	06/03/20 18:08	06/10/20 12:35	50-29-3	
Dieldrin	**<0.10**	ug/L	0.10	1	06/03/20 18:08	06/10/20 12:35	60-57-1	
Endosulfan I	**<0.050**	ug/L	0.050	1	06/03/20 18:08	06/10/20 12:35	959-98-8	
Endosulfan II	**<0.10**	ug/L	0.10	1	06/03/20 18:08	06/10/20 12:35	33213-65-9	
Endosulfan sulfate	**<0.10**	ug/L	0.10	1	06/03/20 18:08	06/10/20 12:35	1031-07-8	
Endrin	**<0.10**	ug/L	0.10	1	06/03/20 18:08	06/10/20 12:35	72-20-8	
Endrin aldehyde	**<0.10**	ug/L	0.10	1	06/03/20 18:08	06/08/20 20:14	7421-93-4	
Heptachlor	**<0.050**	ug/L	0.050	1	06/03/20 18:08	06/10/20 12:35	76-44-8	L1
Heptachlor epoxide	**<0.050**	ug/L	0.050	1	06/03/20 18:08	06/10/20 12:35	1024-57-3	
Methoxychlor	**<0.50**	ug/L	0.50	1	06/03/20 18:08	06/10/20 12:35	72-43-5	
Toxaphene	**<5.0**	ug/L	5.0	1	06/03/20 18:08	06/10/20 12:35	8001-35-2	
Surrogates								
Decachlorobiphenyl (S)	24	%	20-129	1	06/03/20 18:08	06/10/20 12:35	2051-24-3	
Tetrachloro-m-xylene (S)	42	%	23-110	1	06/03/20 18:08	06/10/20 12:35	877-09-8	
8082 GCS PCB	Analytical Method: EPA 8082A Preparation Method: EPA 3510C Pace Analytical Services - Melville							
PCB-1016 (Aroclor 1016)	**<1.0**	ug/L	1.0	1	06/03/20 18:09	06/04/20 16:44	12674-11-2	
PCB-1221 (Aroclor 1221)	**<1.0**	ug/L	1.0	1	06/03/20 18:09	06/04/20 16:44	11104-28-2	
PCB-1232 (Aroclor 1232)	**<1.0**	ug/L	1.0	1	06/03/20 18:09	06/04/20 16:44	11141-16-5	
PCB-1242 (Aroclor 1242)	**<1.0**	ug/L	1.0	1	06/03/20 18:09	06/04/20 16:44	53469-21-9	
PCB-1248 (Aroclor 1248)	**<1.0**	ug/L	1.0	1	06/03/20 18:09	06/04/20 16:44	12672-29-6	
PCB-1254 (Aroclor 1254)	**<1.0**	ug/L	1.0	1	06/03/20 18:09	06/04/20 16:44	11097-69-1	
PCB-1260 (Aroclor 1260)	**<1.0**	ug/L	1.0	1	06/03/20 18:09	06/04/20 16:44	11096-82-5	
Surrogates								
Tetrachloro-m-xylene (S)	42	%	13-122	1	06/03/20 18:09	06/04/20 16:44	877-09-8	
Decachlorobiphenyl (S)	35	%	10-151	1	06/03/20 18:09	06/04/20 16:44	2051-24-3	
8151A Chlorinated Herbicides	Analytical Method: EPA 8151A Preparation Method: EPA 8151A Pace Analytical Services - Melville							
2,4-D	**1.3**	ug/L	0.50	1	06/02/20 17:35	06/04/20 14:44	94-75-7	
Dinoseb	**<0.20**	ug/L	0.20	1	06/02/20 17:35	06/04/20 14:44	88-85-7	M1
2,4,5-T	**0.12J**	ug/L	0.25	1	06/02/20 17:35	06/04/20 14:44	93-76-5	
2,4,5-TP (Silvex)	**<0.25**	ug/L	0.25	1	06/02/20 17:35	06/04/20 14:44	93-72-1	
Surrogates								
2,4-DCAA (S)	17	%	13-144	1	06/02/20 17:35	06/04/20 14:44	19719-28-9	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Sample: CELL 7 PLCRS **Lab ID: 70132489001** Collected: 05/28/20 12:10 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP	Analytical Method: EPA 6010C Preparation Method: EPA 3005A Pace Analytical Services - Melville							
Aluminum	**<1000**	ug/L	1000	5	06/03/20 12:19	07/01/20 13:26	7429-90-5	
Antimony	**<300**	ug/L	300	5	06/03/20 12:19	07/01/20 13:26	7440-36-0	
Arsenic	**<50.0**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:26	7440-38-2	
Barium	**5550**	ug/L	1000	5	06/03/20 12:19	07/01/20 13:26	7440-39-3	
Beryllium	**0.58J**	ug/L	25.0	5	06/03/20 12:19	07/01/20 13:26	7440-41-7	
Boron	**92.5J**	ug/L	250	5	06/03/20 12:19	07/01/20 13:26	7440-42-8	
Cadmium	**<12.5**	ug/L	12.5	5	06/03/20 12:19	07/01/20 13:26	7440-43-9	
Calcium	**9900000**	ug/L	10000	50	06/03/20 12:19	07/01/20 15:15	7440-70-2	
Chromium	**157**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:26	7440-47-3	
Cobalt	**<250**	ug/L	250	5	06/03/20 12:19	07/01/20 13:26	7440-48-4	
Copper	**56.0J**	ug/L	125	5	06/03/20 12:19	07/01/20 13:26	7440-50-8	
Iron	**109**	ug/L	100	5	06/03/20 12:19	07/01/20 13:26	7439-89-6	
Lead	**<25.0**	ug/L	25.0	5	06/03/20 12:19	07/01/20 13:26	7439-92-1	
Magnesium	**6450**	ug/L	1000	5	06/03/20 12:19	07/01/20 13:26	7439-95-4	
Manganese	**221**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:26	7439-96-5	
Nickel	**72.0J**	ug/L	200	5	06/03/20 12:19	07/01/20 13:26	7440-02-0	
Potassium	**5550000**	ug/L	250000	50	06/03/20 12:19	07/01/20 15:15	7440-09-7	
Selenium	**<50.0**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:26	7782-49-2	
Silver	**18.8J**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:26	7440-22-4	
Sodium	**8800000**	ug/L	250000	50	06/03/20 12:19	07/01/20 15:15	7440-23-5	
Thallium	**<50.0**	ug/L	50.0	5	06/03/20 12:19	07/01/20 13:26	7440-28-0	
Tin	**<250**	ug/L	250	5	06/03/20 12:19	07/01/20 13:26	7440-31-5	
Vanadium	**<250**	ug/L	250	5	06/03/20 12:19	07/01/20 13:26	7440-62-2	
Zinc	**<100**	ug/L	100	5	06/03/20 12:19	07/01/20 13:26	7440-66-6	
7470 Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A Pace Analytical Services - Melville							
Mercury	**<0.20**	ug/L	0.20	1	06/02/20 08:56	06/02/20 11:34	7439-97-6	
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3510C Pace Analytical Services - Melville							
1,2,4,5-Tetrachlorobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	95-94-3	H2
1,2,4-Trichlorobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	120-82-1	H2
1,2-Dichlorobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	95-50-1	H2
1,3,5-Trinitrobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	99-35-4	H2
1,3-Dichlorobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	541-73-1	H2
1,3-Dinitrobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	99-65-0	H2
1,4-Dichlorobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	106-46-7	H2
1,4-Naphthoquinone	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	130-15-4	CL,H2
1-Naphthylamine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	134-32-7	H2,IL,L1
2,2'-Oxybis(1-chloropropane)	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	108-60-1	CL,H2,IL
2,3,4,6-Tetrachlorophenol	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	58-90-2	H2
2,4,5-Trichlorophenol	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	95-95-4	H2
2,4,6-Trichlorophenol	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	88-06-2	H2
2,4-Dichlorophenol	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	120-83-2	H2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Sample: CELL 7 PLCRS **Lab ID: 70132489001** Collected: 05/28/20 12:10 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3510C Pace Analytical Services - Melville							
2,4-Dimethylphenol	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	105-67-9	H2
2,4-Dinitrophenol	**<10.0**	ug/L	10.0	1	06/09/20 09:33	06/09/20 20:13	51-28-5	H2
2,4-Dinitrotoluene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	121-14-2	H2
2,6-Dichlorophenol	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	87-65-0	H2,L1
2,6-Dinitrotoluene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	606-20-2	H2
2-Acetylaminofluorene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	53-96-3	H2
2-Chloronaphthalene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	91-58-7	H2
2-Chlorophenol	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	95-57-8	H2
2-Methylnaphthalene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	91-57-6	H2
2-Methylphenol(o-Cresol)	**0.63J**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	95-48-7	H2
2-Naphthylamine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	91-59-8	H2
2-Nitroaniline	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	88-74-4	H2
2-Nitrophenol	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	88-75-5	H2
3&4-Methylphenol(m&p Cresol)	**44.4**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13		H2
3,3'-Dichlorobenzidine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	91-94-1	H2
3,3'-Dimethylbenzidine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	119-93-7	H2,IL
3-Methylcholanthrene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	56-49-5	H2
3-Nitroaniline	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	99-09-2	H2,L1
4,6-Dinitro-2-methylphenol	**<10.0**	ug/L	10.0	1	06/09/20 09:33	06/09/20 20:13	534-52-1	H2
4-Aminobiphenyl	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	92-67-1	H2,IL
4-Bromophenylphenyl ether	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	101-55-3	H2
4-Chloro-3-methylphenol	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	59-50-7	H2
4-Chloroaniline	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	106-47-8	H2
4-Chlorophenylphenyl ether	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	7005-72-3	H2
4-Nitroaniline	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	100-01-6	H2
4-Nitrophenol	**<10.0**	ug/L	10.0	1	06/09/20 09:33	06/09/20 20:13	100-02-7	H2
5-Nitro-o-toluidine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	99-55-8	H2
7,12-Dimethylbenz(a)anthracene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	57-97-6	H2
Acenaphthene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	83-32-9	H2
Acenaphthylene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	208-96-8	H2
Acetophenone	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	98-86-2	H2,L1
Anthracene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	120-12-7	H2
Benzo(a)anthracene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	56-55-3	H2
Benzo(a)pyrene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	50-32-8	H2
Benzo(b)fluoranthene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	205-99-2	H2
Benzo(g,h,i)perylene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	191-24-2	H2
Benzo(k)fluoranthene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	207-08-9	H2
Benzyl alcohol	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	100-51-6	H2
Butylbenzylphthalate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	85-68-7	H2
Chlorobenzilate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	510-15-6	H2
Chrysene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	218-01-9	H2
Di-n-butylphthalate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	84-74-2	H2
Di-n-octylphthalate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	117-84-0	H2
Diallate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	2303-16-4	H2
Dibenz(a,h)anthracene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	53-70-3	H2
Dibenzofuran	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	132-64-9	H2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Sample: CELL 7 PLCRS **Lab ID: 70132489001** Collected: 05/28/20 12:10 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3510C Pace Analytical Services - Melville							
Diethylphthalate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	84-66-2	H2
Dimethoate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	60-51-5	H2
Dimethylphthalate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	131-11-3	H2
Disulfoton	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	298-04-4	H2
Ethyl methanesulfonate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	62-50-0	H2
Famphur	**<10.0**	ug/L	10.0	1	06/09/20 09:33	06/09/20 20:13	52-85-7	CL,H2, IC,IL
Fluoranthene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	206-44-0	H2
Fluorene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	86-73-7	H2
Hexachloro-1,3-butadiene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	87-68-3	H2
Hexachlorobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	118-74-1	H2
Hexachlorocyclopentadiene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	77-47-4	H2
Hexachloroethane	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	67-72-1	H2
Hexachloropropene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	1888-71-7	H2
Indeno(1,2,3-cd)pyrene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	193-39-5	H2
Isodrin	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	465-73-6	H2
Isophorone	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	78-59-1	H2
Isosafrole	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	120-58-1	H2
Kepone	**<10.0**	ug/L	10.0	1	06/09/20 09:33	06/09/20 20:13	143-50-0	CL,H2, IC,IL,L2
Methapyrilene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	91-80-5	H2,IC
Methyl methanesulfonate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	66-27-3	H2
Methyl parathion	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	298-00-0	H2
N-Nitroso-di-n-butylamine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	924-16-3	H2
N-Nitroso-di-n-propylamine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	621-64-7	H2
N-Nitrosodiethylamine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	55-18-5	H2
N-Nitrosodimethylamine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	62-75-9	H2
N-Nitrosodiphenylamine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	86-30-6	H2,L1
N-Nitrosomethylethylamine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	10595-95-6	H2
N-Nitrosopiperidine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	100-75-4	H2
N-Nitrosopyrrolidine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	930-55-2	H2
Naphthalene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	91-20-3	H2
Nitrobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	98-95-3	H2
O,O,O-Triethylphosphorothioate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	126-68-1	H2
O-Toluidine	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	95-53-4	H2
P-Dimethylaminoazobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	60-11-7	H2
Parathion (Ethyl parathion)	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	56-38-2	H2
Pentachlorobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	608-93-5	H2
Pentachloronitrobenzene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	82-68-8	H2
Pentachlorophenol	**<10.0**	ug/L	10.0	1	06/09/20 09:33	06/09/20 20:13	87-86-5	H2
Phenacetin	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	62-44-2	H2
Phenanthrene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	85-01-8	H2
Phenol	**87.1**	ug/L	25.0	5	06/09/20 09:33	06/10/20 00:38	108-95-2	H2
Pronamide	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	23950-58-5	H2
Pyrene	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	129-00-0	H2
Safrole	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	94-59-7	H2

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Sample: CELL 7 PLCRS **Lab ID: 70132489001** Collected: 05/28/20 12:10 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270 MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3510C Pace Analytical Services - Melville							
Thionazin	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	297-97-2	H2
bis(2-Chloroethoxy)methane	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	111-91-1	H2
bis(2-Chloroethyl) ether	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	111-44-4	H2
bis(2-Ethylhexyl)phthalate	**<5.0**	ug/L	5.0	1	06/09/20 09:33	06/09/20 20:13	117-81-7	H2
p-Phenylenediamine	**<10.0**	ug/L	10.0	1	06/09/20 09:33	06/09/20 20:13	106-50-3	H2,IL,L2
Surrogates								
Nitrobenzene-d5 (S)	76	%	35-114	1	06/09/20 09:33	06/09/20 20:13	4165-60-0	
2-Fluorobiphenyl (S)	75	%	43-116	1	06/09/20 09:33	06/09/20 20:13	321-60-8	
p-Terphenyl-d14 (S)	59	%	33-141	1	06/09/20 09:33	06/09/20 20:13	1718-51-0	
Phenol-d5 (S)	38	%	10-110	1	06/09/20 09:33	06/09/20 20:13	4165-62-2	
2-Fluorophenol (S)	52	%	21-110	1	06/09/20 09:33	06/09/20 20:13	367-12-4	
2,4,6-Tribromophenol (S)	96	%	10-123	1	06/09/20 09:33	06/09/20 20:13	118-79-6	
2-Chlorophenol-d4 (S)	72	%	33-110	1	06/09/20 09:33	06/09/20 20:13	93951-73-6	
1,2-Dichlorobenzene-d4 (S)	59	%	16-110	1	06/09/20 09:33	06/09/20 20:13	2199-69-1	
8260C SIM Volatile Organics	Analytical Method: EPA 8260C SIM/5030C Pace Analytical Services - Melville							
1,4-Dioxane (p-Dioxane)	**3.3**	ug/L	0.20	1		06/03/20 19:10	123-91-1	
Surrogates								
1,2-Dichlorobenzene-d4 (S)	86	%	60-140	1		06/03/20 19:10	2199-69-1	
4-Bromofluorobenzene (S)	112	%	79-124	1		06/03/20 19:10	460-00-4	
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
1,1,1,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	630-20-6	L1
1,1,1-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	71-55-6	
1,1,2,2-Tetrachloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	79-34-5	
1,1,2-Trichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	79-00-5	
1,1-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	75-34-3	
1,1-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	75-35-4	
1,1-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	563-58-6	
1,2,3-Trichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	96-18-4	
1,2-Dibromo-3-chloropropane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	96-12-8	
1,2-Dibromoethane (EDB)	**<1.0**	ug/L	1.0	1		06/04/20 21:26	106-93-4	
1,2-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	95-50-1	
1,2-Dichloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	107-06-2	
1,2-Dichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	78-87-5	
1,3-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	541-73-1	
1,3-Dichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	142-28-9	
1,4-Dichlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	106-46-7	
1,4-Dioxane (p-Dioxane)	**<100**	ug/L	100	1		06/04/20 21:26	123-91-1	
2,2-Dichloropropane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	594-20-7	
2-Butanone (MEK)	**14.2**	ug/L	5.0	1		06/04/20 21:26	78-93-3	CL
2-Hexanone	**<5.0**	ug/L	5.0	1		06/04/20 21:26	591-78-6	
4-Methyl-2-pentanone (MIBK)	**<5.0**	ug/L	5.0	1		06/04/20 21:26	108-10-1	
Acetone	**124**	ug/L	5.0	1		06/04/20 21:26	67-64-1	IC

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Sample: CELL 7 PLCRS **Lab ID: 70132489001** Collected: 05/28/20 12:10 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Acetonitrile	**<5.0**	ug/L	5.0	1		06/04/20 21:26	75-05-8	
Acrolein	**<1.0**	ug/L	1.0	1		06/04/20 21:26	107-02-8	
Acrylonitrile	**<1.0**	ug/L	1.0	1		06/04/20 21:26	107-13-1	
Allyl chloride	**<4.0**	ug/L	4.0	1		06/04/20 21:26	107-05-1	
Benzene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	71-43-2	
Bromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	74-97-5	
Bromodichloromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	75-27-4	
Bromoform	**<1.0**	ug/L	1.0	1		06/04/20 21:26	75-25-2	
Bromomethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	74-83-9	
Carbon disulfide	**<1.0**	ug/L	1.0	1		06/04/20 21:26	75-15-0	
Carbon tetrachloride	**<1.0**	ug/L	1.0	1		06/04/20 21:26	56-23-5	
Chlorobenzene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	108-90-7	
Chloroethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	75-00-3	
Chloroform	**<1.0**	ug/L	1.0	1		06/04/20 21:26	67-66-3	
Chloromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	74-87-3	
Chloroprene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	126-99-8	
Dibromochloromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	124-48-1	
Dibromomethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	74-95-3	
Dichlorodifluoromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	75-71-8	
Ethyl methacrylate	**<1.0**	ug/L	1.0	1		06/04/20 21:26	97-63-2	
Ethylbenzene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	100-41-4	
Iodomethane	**4.2**	ug/L	4.0	1		06/04/20 21:26	74-88-4	
Isobutanol	**<20.0**	ug/L	20.0	1		06/04/20 21:26	78-83-1	
Methacrylonitrile	**<1.0**	ug/L	1.0	1		06/04/20 21:26	126-98-7	
Methyl methacrylate	**<1.0**	ug/L	1.0	1		06/04/20 21:26	80-62-6	
Methylene Chloride	**<1.0**	ug/L	1.0	1		06/04/20 21:26	75-09-2	
Propionitrile	**<4.0**	ug/L	4.0	1		06/04/20 21:26	107-12-0	
Styrene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	100-42-5	
Tetrachloroethene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	127-18-4	
Toluene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	108-88-3	
Trichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	79-01-6	
Trichlorofluoromethane	**<1.0**	ug/L	1.0	1		06/04/20 21:26	75-69-4	
Vinyl acetate	**<1.0**	ug/L	1.0	1		06/04/20 21:26	108-05-4	
Vinyl chloride	**<1.0**	ug/L	1.0	1		06/04/20 21:26	75-01-4	
Xylene (Total)	**<3.0**	ug/L	3.0	1		06/04/20 21:26	1330-20-7	
cis-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	156-59-2	
cis-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	10061-01-5	L1
trans-1,2-Dichloroethene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	156-60-5	
trans-1,3-Dichloropropene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	10061-02-6	
trans-1,4-Dichloro-2-butene	**<1.0**	ug/L	1.0	1		06/04/20 21:26	110-57-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%	68-153	1		06/04/20 21:26	17060-07-0	
4-Bromofluorobenzene (S)	99	%	79-124	1		06/04/20 21:26	460-00-4	
Toluene-d8 (S)	94	%	69-124	1		06/04/20 21:26	2037-26-5	
Tentatively Identified Compounds								
Unknown	**14.0J**	ug/L		1		06/04/20 21:26		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Sample: CELL 7 PLCRS **Lab ID: 70132489001** Collected: 05/28/20 12:10 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260C Volatile Organics	Analytical Method: EPA 8260C/5030C Pace Analytical Services - Melville							
Tentatively Identified Compounds								
Sulfur dioxide	**105J**	ug/L		1		06/04/20 21:26	7446-09-5	N
Unknown	**8.0J**	ug/L		1		06/04/20 21:26		
Silane, methoxytrimethyl	**24.4J**	ug/L		1		06/04/20 21:26	1825-61-2	N
Disiloxane, hexamethyl-	**21.1J**	ug/L		1		06/04/20 21:26	107-46-0	N
2120B W Apparent Color	Analytical Method: SM22 2120B Pace Analytical Services - Melville							
Apparent Color	**40.0**	units	5.0	1		05/29/20 15:08		
pH	**7.3**	Std. Units	0.10	1		05/29/20 15:08		
2320B Alkalinity	Analytical Method: SM22 2320B Pace Analytical Services - Melville							
Alkalinity, Total as CaCO3	**176**	mg/L	1.0	1		06/09/20 10:26		
2340C Hardness, Total	Analytical Method: SM22 2340C Pace Analytical Services - Melville							
Tot Hardness asCaCO3 (SM 2340B	**28400**	mg/L	5.0	1		06/16/20 16:02		
2540C Total Dissolved Solids	Analytical Method: SM22 2540C Pace Analytical Services - Melville							
Total Dissolved Solids	**58800**	mg/L	20.0	1		06/03/20 10:32		
Chromium, Hexavalent	Analytical Method: SM22 3500-Cr B Pace Analytical Services - Melville							
Chromium, Hexavalent	**<0.020**	mg/L	0.020	1		05/29/20 07:52	18540-29-9	
410.4 COD	Analytical Method: EPA 410.4 Preparation Method: EPA 410.4 Pace Analytical Services - Melville							
Chemical Oxygen Demand	**2240**	mg/L	100	1	06/09/20 09:45	06/09/20 12:01		
5210B BOD, 5 day	Analytical Method: SM22 5210B Preparation Method: SM22 5210B Pace Analytical Services - Melville							
BOD, 5 day	**103**	mg/L	66.7	33.33	05/29/20 17:11	06/03/20 12:05		
9034 Sulfide, Titration	Analytical Method: EPA 9034 Preparation Method: EPA 9030B Pace Analytical Services - Melville							
Sulfide	**25.6**	mg/L	2.0	1	06/03/20 08:51	06/03/20 16:31		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0 Pace Analytical Services - Melville							
Bromide	**480**	mg/L	100	200		06/10/20 11:29	24959-67-9	
Chloride	**49500**	mg/L	4000	2000		06/10/20 11:46	16887-00-6	
Sulfate	**129**	mg/L	100	20		06/08/20 21:51	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Sample: CELL 7 PLCRS **Lab ID: 70132489001** Collected: 05/28/20 12:10 Received: 05/28/20 15:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
351.2 Total Kjeldahl Nitrogen	Analytical Method: EPA 351.2 Preparation Method: EPA 351.2 Pace Analytical Services - Melville							
Nitrogen, Kjeldahl, Total	**93.8**	mg/L	10.0	20	06/09/20 08:25	06/10/20 15:16	7727-37-9	
353.2 Nitrogen, NO2/NO3 pres.	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrate as N	**<0.050**	mg/L	0.050	1		06/12/20 00:48	14797-55-8	
Nitrate-Nitrite (as N)	**<0.050**	mg/L	0.050	1		06/12/20 00:48	7727-37-9	
353.2 Nitrogen, NO2	Analytical Method: EPA 353.2 Pace Analytical Services - Melville							
Nitrite as N	**<0.050**	mg/L	0.050	1		05/29/20 00:03	14797-65-0	
Phenolics, Total Recoverable	Analytical Method: EPA 420.1 Preparation Method: EPA 420.1 Pace Analytical Services - Melville							
Phenolics, Total Recoverable	**278**	ug/L	50.0	10	06/09/20 09:07	06/09/20 12:06		
4500 Ammonia Water	Analytical Method: SM22 4500 NH3 H Pace Analytical Services - Melville							
Nitrogen, Ammonia	**82.2**	mg/L	5.0	50		06/11/20 14:01	7664-41-7	
9014 Cyanide, Total	Analytical Method: EPA 9014 Total Cyanide Preparation Method: EPA 9010C Pace Analytical Services - Melville							
Cyanide	**4.7J**	ug/L	10.0	1	06/08/20 09:45	06/08/20 15:41	57-12-5	
9060A TOC as NPOC	Analytical Method: EPA 9060A Pace Analytical Services - Melville							
Total Organic Carbon	**138**	mg/L	2.0	2		06/08/20 21:17	7440-44-0	
Total Organic Carbon	**69.2**	mg/L	2.0	2		06/08/20 21:17	7440-44-0	
Total Organic Carbon	**69.4**	mg/L	2.0	2		06/08/20 21:17	7440-44-0	
Total Organic Carbon	**70.2**	mg/L	2.0	2		06/08/20 21:17	7440-44-0	
Mean Total Organic Carbon	**69.7**	mg/L	2.0	2		06/08/20 21:17	7440-44-0	

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 162815
QC Batch Method: EPA 7470A
Analysis Method: EPA 7470A
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 784609 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	ug/L	<0.20	0.20	06/02/20 11:28	

LABORATORY CONTROL SAMPLE: 784610

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	1	1.2	116	80-120	

MATRIX SPIKE SAMPLE: 784611

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury	ug/L	<0.20	1	1.0	99	75-125	

SAMPLE DUPLICATE: 784612

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Mercury	ug/L	<0.20	<0.20		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163143
QC Batch Method: EPA 3005A
Analysis Method: EPA 6010C
Analysis Description: 6010 MET Water
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 785938 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	<200	200	06/30/20 15:58	
Antimony	ug/L	<60.0	60.0	06/30/20 15:58	
Arsenic	ug/L	<10.0	10.0	06/30/20 15:58	
Barium	ug/L	<200	200	06/30/20 15:58	
Beryllium	ug/L	<5.0	5.0	06/30/20 15:58	
Boron	ug/L	<50.0	50.0	06/30/20 15:58	
Cadmium	ug/L	<2.5	2.5	06/30/20 15:58	
Calcium	ug/L	<200	200	06/30/20 15:58	
Chromium	ug/L	<10.0	10.0	06/30/20 15:58	
Cobalt	ug/L	<50.0	50.0	06/30/20 15:58	
Copper	ug/L	<25.0	25.0	06/30/20 15:58	
Iron	ug/L	<20.0	20.0	06/30/20 15:58	
Lead	ug/L	<5.0	5.0	06/30/20 15:58	
Magnesium	ug/L	<200	200	06/30/20 15:58	
Manganese	ug/L	<10.0	10.0	06/30/20 15:58	
Nickel	ug/L	<40.0	40.0	06/30/20 15:58	
Potassium	ug/L	<5000	5000	06/30/20 15:58	
Selenium	ug/L	<10.0	10.0	06/30/20 15:58	
Silver	ug/L	<10.0	10.0	06/30/20 15:58	
Sodium	ug/L	<5000	5000	06/30/20 15:58	
Thallium	ug/L	<10.0	10.0	06/30/20 15:58	
Tin	ug/L	<50.0	50.0	06/30/20 15:58	
Vanadium	ug/L	<50.0	50.0	06/30/20 15:58	
Zinc	ug/L	9.0J	20.0	06/30/20 15:58	

LABORATORY CONTROL SAMPLE: 785939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	5000	5110	102	80-120	
Antimony	ug/L	750	727	97	80-120	
Arsenic	ug/L	500	524	105	80-120	
Barium	ug/L	500	515	103	80-120	
Beryllium	ug/L	50	52.3	105	80-120	
Boron	ug/L	2500	2630	105	80-120	
Cadmium	ug/L	50	51.3	103	80-120	
Calcium	ug/L	25000	25700	103	80-120	
Chromium	ug/L	250	264	106	80-120	
Cobalt	ug/L	500	516	103	80-120	
Copper	ug/L	250	256	102	80-120	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

LABORATORY CONTROL SAMPLE: 785939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Iron	ug/L	2000	2060	103	80-120	
Lead	ug/L	500	515	103	80-120	
Magnesium	ug/L	25000	25300	101	80-120	
Manganese	ug/L	250	260	104	80-120	
Nickel	ug/L	250	258	103	80-120	
Potassium	ug/L	50000	51900	104	80-120	
Selenium	ug/L	750	776	103	80-120	
Silver	ug/L	250	258	103	80-120	
Sodium	ug/L	50000	49900	100	80-120	
Thallium	ug/L	750	727	97	80-120	
Tin	ug/L	2500	2560	102	80-120	
Vanadium	ug/L	500	521	104	80-120	
Zinc	ug/L	1000	1050	105	80-120	

MATRIX SPIKE SAMPLE: 785941

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	<200	5000	5230	105	75-125	
Antimony	ug/L	<60.0	750	792	106	75-125	
Arsenic	ug/L	<10.0	500	557	111	75-125	
Barium	ug/L	619	500	1150	106	75-125	
Beryllium	ug/L	0.13J	50	49.2	98	75-125	
Boron	ug/L	243	2500	2870	105	75-125	
Cadmium	ug/L	<2.5	50	46.7	93	75-125	
Calcium	ug/L	2390000	25000	2430000	160	75-125	M6
Chromium	ug/L	48.9	250	303	102	75-125	
Cobalt	ug/L	<50.0	500	482	96	75-125	
Copper	ug/L	39.8	250	252	85	75-125	
Iron	ug/L	6160	2000	7830	84	75-125	
Lead	ug/L	<5.0	500	474	95	75-125	
Magnesium	ug/L	12000	25000	34500	90	75-125	
Manganese	ug/L	1300	250	1540	96	75-125	
Nickel	ug/L	47.8	250	281	93	75-125	
Potassium	ug/L	937000	50000	986000	98	75-125	
Selenium	ug/L	<10.0	750	802	106	75-125	
Silver	ug/L	4.7J	250	124	48	75-125	M1
Sodium	ug/L	2230000	50000	2280000	100	75-125	
Thallium	ug/L	<10.0	750	621	82	75-125	
Tin	ug/L	<50.0	2500	2380	95	75-125	
Vanadium	ug/L	<50.0	500	508	102	75-125	
Zinc	ug/L	<20.0	1000	950	95	75-125	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

SAMPLE DUPLICATE: 785940

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Aluminum	ug/L	<200	<200		
Antimony	ug/L	<60.0	<60.0		
Arsenic	ug/L	<10.0	<10.0		
Barium	ug/L	619	600	3	
Beryllium	ug/L	0.13J	0.11J		
Boron	ug/L	243	231	5	
Cadmium	ug/L	<2.5	<2.5		
Calcium	ug/L	2390000	2530000	6	
Chromium	ug/L	48.9	47.7	2	
Cobalt	ug/L	<50.0	<50.0		
Copper	ug/L	39.8	13.8J		
Iron	ug/L	6160	5790	6	
Lead	ug/L	<5.0	<5.0		
Magnesium	ug/L	12000	11600	3	
Manganese	ug/L	1300	1250	4	
Nickel	ug/L	47.8	40.6	16	
Potassium	ug/L	937000	984000	5	
Selenium	ug/L	<10.0	9.0J		
Silver	ug/L	4.7J	4.2J		
Sodium	ug/L	2230000	2350000	5	
Thallium	ug/L	<10.0	<10.0		
Tin	ug/L	<50.0	<50.0		
Vanadium	ug/L	<50.0	<50.0		
Zinc	ug/L	<20.0	<20.0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163001
QC Batch Method: EPA 8260C SIM/5030C
Analysis Method: EPA 8260C SIM/5030C
Analysis Description: 8260C SIM 5030C
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 785488 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	<0.20	0.20	06/03/20 15:15	
1,2-Dichlorobenzene-d4 (S)	%	81	60-140	06/03/20 15:15	
4-Bromofluorobenzene (S)	%	99	79-124	06/03/20 15:15	

LABORATORY CONTROL SAMPLE: 785489

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dioxane (p-Dioxane)	ug/L	2.5	2.1	82	60-140	
1,2-Dichlorobenzene-d4 (S)	%			65	60-140	
4-Bromofluorobenzene (S)	%			98	79-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 785507 785508

Parameter	Units	70132491003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,4-Dioxane (p-Dioxane)	ug/L	0.38	2.5	2.5	2.3	2.4	76	82	60-140	6	
1,2-Dichlorobenzene-d4 (S)	%						89	60	60-140		
4-Bromofluorobenzene (S)	%						105	99	79-124		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163393
QC Batch Method: EPA 8260C/5030C
Analysis Method: EPA 8260C/5030C
Analysis Description: 8260 MSV
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 787417 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,1,1-Trichloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,1,2,2-Tetrachloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,1,2-Trichloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,1-Dichloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,1-Dichloroethene	ug/L	<1.0	1.0	06/04/20 17:44	
1,1-Dichloropropene	ug/L	<1.0	1.0	06/04/20 17:44	
1,2,3-Trichloropropane	ug/L	<1.0	1.0	06/04/20 17:44	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	1.0	06/04/20 17:44	
1,2-Dibromoethane (EDB)	ug/L	<1.0	1.0	06/04/20 17:44	
1,2-Dichlorobenzene	ug/L	<1.0	1.0	06/04/20 17:44	
1,2-Dichloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
1,2-Dichloropropane	ug/L	<1.0	1.0	06/04/20 17:44	
1,3-Dichlorobenzene	ug/L	<1.0	1.0	06/04/20 17:44	
1,3-Dichloropropane	ug/L	<1.0	1.0	06/04/20 17:44	
1,4-Dichlorobenzene	ug/L	<1.0	1.0	06/04/20 17:44	
1,4-Dioxane (p-Dioxane)	ug/L	<100	100	06/04/20 17:44	
2,2-Dichloropropane	ug/L	<1.0	1.0	06/04/20 17:44	
2-Butanone (MEK)	ug/L	<5.0	5.0	06/04/20 17:44	CL
2-Hexanone	ug/L	<5.0	5.0	06/04/20 17:44	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	5.0	06/04/20 17:44	
Acetone	ug/L	<5.0	5.0	06/04/20 17:44	IC
Acetonitrile	ug/L	<5.0	5.0	06/04/20 17:44	
Acrolein	ug/L	<1.0	1.0	06/04/20 17:44	
Acrylonitrile	ug/L	<1.0	1.0	06/04/20 17:44	
Allyl chloride	ug/L	<4.0	4.0	06/04/20 17:44	
Benzene	ug/L	<1.0	1.0	06/04/20 17:44	
Bromochloromethane	ug/L	<1.0	1.0	06/04/20 17:44	
Bromodichloromethane	ug/L	<1.0	1.0	06/04/20 17:44	
Bromoform	ug/L	<1.0	1.0	06/04/20 17:44	
Bromomethane	ug/L	<1.0	1.0	06/04/20 17:44	
Carbon disulfide	ug/L	<1.0	1.0	06/04/20 17:44	
Carbon tetrachloride	ug/L	<1.0	1.0	06/04/20 17:44	
Chlorobenzene	ug/L	<1.0	1.0	06/04/20 17:44	
Chloroethane	ug/L	<1.0	1.0	06/04/20 17:44	
Chloroform	ug/L	<1.0	1.0	06/04/20 17:44	
Chloromethane	ug/L	<1.0	1.0	06/04/20 17:44	
Chloroprene	ug/L	<1.0	1.0	06/04/20 17:44	
cis-1,2-Dichloroethene	ug/L	<1.0	1.0	06/04/20 17:44	
cis-1,3-Dichloropropene	ug/L	<1.0	1.0	06/04/20 17:44	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

METHOD BLANK: 787417 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Dibromochloromethane	ug/L	<1.0	1.0	06/04/20 17:44	
Dibromomethane	ug/L	<1.0	1.0	06/04/20 17:44	
Dichlorodifluoromethane	ug/L	<1.0	1.0	06/04/20 17:44	
Ethyl methacrylate	ug/L	<1.0	1.0	06/04/20 17:44	
Ethylbenzene	ug/L	<1.0	1.0	06/04/20 17:44	
Iodomethane	ug/L	<4.0	4.0	06/04/20 17:44	
Isobutanol	ug/L	<20.0	20.0	06/04/20 17:44	
Methacrylonitrile	ug/L	<1.0	1.0	06/04/20 17:44	
Methyl methacrylate	ug/L	<1.0	1.0	06/04/20 17:44	
Methylene Chloride	ug/L	<1.0	1.0	06/04/20 17:44	
Propionitrile	ug/L	<4.0	4.0	06/04/20 17:44	
Styrene	ug/L	<1.0	1.0	06/04/20 17:44	
Tetrachloroethene	ug/L	<1.0	1.0	06/04/20 17:44	
Toluene	ug/L	<1.0	1.0	06/04/20 17:44	
trans-1,2-Dichloroethene	ug/L	<1.0	1.0	06/04/20 17:44	
trans-1,3-Dichloropropene	ug/L	<1.0	1.0	06/04/20 17:44	
trans-1,4-Dichloro-2-butene	ug/L	<1.0	1.0	06/04/20 17:44	
Trichloroethene	ug/L	<1.0	1.0	06/04/20 17:44	
Trichlorofluoromethane	ug/L	<1.0	1.0	06/04/20 17:44	
Vinyl acetate	ug/L	<1.0	1.0	06/04/20 17:44	
Vinyl chloride	ug/L	<1.0	1.0	06/04/20 17:44	
Xylene (Total)	ug/L	<3.0	3.0	06/04/20 17:44	
1,2-Dichloroethane-d4 (S)	%	100	68-153	06/04/20 17:44	
4-Bromofluorobenzene (S)	%	94	79-124	06/04/20 17:44	
Toluene-d8 (S)	%	96	69-124	06/04/20 17:44	

LABORATORY CONTROL SAMPLE: 787418

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	57.2	114	74-113	L1
1,1,1-Trichloroethane	ug/L	50	50.0	100	65-118	
1,1,2,2-Tetrachloroethane	ug/L	50	54.2	108	74-121	
1,1,2-Trichloroethane	ug/L	50	50.9	102	80-117	
1,1-Dichloroethane	ug/L	50	44.8	90	83-151	
1,1-Dichloroethene	ug/L	50	52.2	104	45-146	
1,1-Dichloropropene	ug/L	50	46.3	93	59-127	
1,2,3-Trichloropropane	ug/L	50	52.2	104	71-123	
1,2-Dibromo-3-chloropropane	ug/L	50	53.8	108	74-119	
1,2-Dibromoethane (EDB)	ug/L	50	56.7	113	83-115	
1,2-Dichlorobenzene	ug/L	50	48.1	96	74-113	
1,2-Dichloroethane	ug/L	50	49.3	99	74-129	
1,2-Dichloropropane	ug/L	50	47.6	95	75-117	
1,3-Dichlorobenzene	ug/L	50	47.8	96	71-112	
1,3-Dichloropropane	ug/L	50	47.5	95	74-112	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

LABORATORY CONTROL SAMPLE: 787418

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	50	47.1	94	71-113	
1,4-Dioxane (p-Dioxane)	ug/L	1250	1270	102	60-140	
2,2-Dichloropropane	ug/L	50	49.6	99	63-133	
2-Butanone (MEK)	ug/L	50	41.5	83	44-162	CL
2-Hexanone	ug/L	50	51.2	102	32-183	
4-Methyl-2-pentanone (MIBK)	ug/L	50	54.2	108	69-132	
Acetone	ug/L	50	41.1	82	23-188	IC
Acetonitrile	ug/L	250	247	99	30-150	
Acrolein	ug/L	50	70.7	141	40-174	IH
Acrylonitrile	ug/L	50	51.5	103	59-148	
Allyl chloride	ug/L	50	48.8	98	46-141	
Benzene	ug/L	50	48.4	97	73-119	
Bromochloromethane	ug/L	50	49.9	100	81-116	
Bromodichloromethane	ug/L	50	57.5	115	78-117	
Bromoform	ug/L	50	54.2	108	65-122	
Bromomethane	ug/L	50	61.2	122	52-147	
Carbon disulfide	ug/L	50	55.5	111	41-144	
Carbon tetrachloride	ug/L	50	53.3	107	59-120	
Chlorobenzene	ug/L	50	49.3	99	75-113	
Chloroethane	ug/L	50	51.6	103	49-151	
Chloroform	ug/L	50	47.7	95	72-122	
Chloromethane	ug/L	50	44.6	89	46-144	
Chloroprene	ug/L	50	45.0	90	60-140	
cis-1,2-Dichloroethene	ug/L	50	47.6	95	72-121	
cis-1,3-Dichloropropene	ug/L	50	58.3	117	78-116	L1
Dibromochloromethane	ug/L	50	57.9	116	70-120	
Dibromomethane	ug/L	50	52.6	105	75-125	
Dichlorodifluoromethane	ug/L	50	50.4	101	22-154	
Ethyl methacrylate	ug/L	50	59.9	120	59-128	
Ethylbenzene	ug/L	50	48.9	98	70-113	
Iodomethane	ug/L	50	55.7	111	61-144	
Isobutanol	ug/L	250	188	75	60-140	
Methacrylonitrile	ug/L	50	51.5	103	60-140	
Methyl methacrylate	ug/L	50	57.6	115	54-131	
Methylene Chloride	ug/L	50	51.4	103	61-142	
Propionitrile	ug/L	50	44.2	88	60-140	
Styrene	ug/L	50	53.7	107	72-118	
Tetrachloroethene	ug/L	50	45.2	90	60-128	
Toluene	ug/L	50	49.1	98	72-119	
trans-1,2-Dichloroethene	ug/L	50	46.2	92	56-142	
trans-1,3-Dichloropropene	ug/L	50	51.2	102	79-116	
trans-1,4-Dichloro-2-butene	ug/L	50	43.3	87	71-121	
Trichloroethene	ug/L	50	48.0	96	69-117	
Trichlorofluoromethane	ug/L	50	53.2	106	27-173	
Vinyl acetate	ug/L	50	53.2	106	20-158	
Vinyl chloride	ug/L	50	58.5	117	43-143	CH
Xylene (Total)	ug/L	150	150	100	71-109	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

LABORATORY CONTROL SAMPLE: 787418

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane-d4 (S)	%			96	68-153	
4-Bromofluorobenzene (S)	%			101	79-124	
Toluene-d8 (S)	%			88	69-124	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 787419 787420

Parameter	Units	70132491003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	<1.0	50	50	52.1	49.5	104	99	74-113	5	
1,1,1-Trichloroethane	ug/L	<1.0	50	50	49.8	48.9	100	98	65-118	2	
1,1,2,2-Tetrachloroethane	ug/L	<1.0	50	50	51.5	47.2	103	94	74-121	9	
1,1,2-Trichloroethane	ug/L	<1.0	50	50	49.5	48.8	99	98	80-117	1	
1,1-Dichloroethane	ug/L	<1.0	50	50	47.8	45.8	96	92	83-151	4	
1,1-Dichloroethene	ug/L	<1.0	50	50	59.2	56.7	118	113	45-146	4	
1,1-Dichloropropene	ug/L	<1.0	50	50	48.9	46.6	98	93	59-127	5	
1,2,3-Trichloropropane	ug/L	<1.0	50	50	48.9	44.9	98	90	71-123	8	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	50.0	48.7	100	97	74-119	3	
1,2-Dibromoethane (EDB)	ug/L	<1.0	50	50	54.0	52.6	108	105	83-115	3	
1,2-Dichlorobenzene	ug/L	<1.0	50	50	46.1	46.4	92	93	74-113	1	
1,2-Dichloroethane	ug/L	<1.0	50	50	47.1	46.5	94	93	74-129	1	
1,2-Dichloropropane	ug/L	<1.0	50	50	45.2	44.2	90	88	75-117	2	
1,3-Dichlorobenzene	ug/L	<1.0	50	50	46.4	45.7	93	91	71-112	2	
1,3-Dichloropropane	ug/L	<1.0	50	50	47.0	46.1	94	92	74-112	2	
1,4-Dichlorobenzene	ug/L	<1.0	50	50	45.5	45.0	91	90	71-113	1	
1,4-Dioxane (p-Dioxane)	ug/L	<100	1250	1250	1190	1140	95	91	60-140	4	
2,2-Dichloropropane	ug/L	<1.0	50	50	43.6	42.4	87	85	63-133	3	
2-Butanone (MEK)	ug/L	<5.0	50	50	39.6	36.6	79	73	44-162	8	CL
2-Hexanone	ug/L	<5.0	50	50	52.7	49.6	105	99	32-183	6	
4-Methyl-2-pentanone (MIBK)	ug/L	<5.0	50	50	53.2	49.6	106	99	69-132	7	
Acetone	ug/L	<5.0	50	50	42.0	38.0	84	76	23-188	10	IC
Acetonitrile	ug/L	<5.0	250	250	238	216	95	86	30-150	10	
Acrolein	ug/L	<1.0	50	50	136	134	272	269	40-174	1	IH,M1
Acrylonitrile	ug/L	<1.0	50	50	53.5	48.7	107	97	59-148	9	
Allyl chloride	ug/L	<4.0	50	50	44.5	44.7	89	89	46-141	0	
Benzene	ug/L	<1.0	50	50	47.8	46.5	96	93	73-119	3	
Bromochloromethane	ug/L	<1.0	50	50	45.8	46.0	92	92	81-116	0	
Bromodichloromethane	ug/L	<1.0	50	50	50.1	48.6	100	97	78-117	3	
Bromoform	ug/L	<1.0	50	50	40.5	39.3	81	79	65-122	3	
Bromomethane	ug/L	<1.0	50	50	28.6	36.5	57	73	52-147	24	R1
Carbon disulfide	ug/L	<1.0	50	50	58.5	59.9	117	120	41-144	2	
Carbon tetrachloride	ug/L	<1.0	50	50	49.7	50.4	99	101	59-120	1	
Chlorobenzene	ug/L	<1.0	50	50	46.8	45.2	94	90	75-113	3	
Chloroethane	ug/L	<1.0	50	50	57.9	57.8	116	116	49-151	0	
Chloroform	ug/L	<1.0	50	50	47.9	46.1	96	92	72-122	4	
Chloromethane	ug/L	<1.0	50	50	41.9	43.3	84	87	46-144	3	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 787419 787420

Parameter	Units	70132491003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Qual
Chloroprene	ug/L	<1.0	50	50	47.5	46.0	95	92	60-140	3	
cis-1,2-Dichloroethene	ug/L	<1.0	50	50	47.9	46.7	96	93	72-121	3	
cis-1,3-Dichloropropene	ug/L	<1.0	50	50	48.9	48.6	98	97	78-116	1	
Dibromochloromethane	ug/L	<1.0	50	50	50.3	50.4	101	101	70-120	0	
Dibromomethane	ug/L	<1.0	50	50	48.7	47.1	97	94	75-125	3	
Dichlorodifluoromethane	ug/L	<1.0	50	50	51.6	51.4	103	103	22-154	0	
Ethyl methacrylate	ug/L	<1.0	50	50	58.6	54.8	117	110	59-128	7	
Ethylbenzene	ug/L	<1.0	50	50	47.5	46.9	95	94	70-113	1	
Iodomethane	ug/L	<4.0	50	50	42.9	54.3	86	109	61-144	23	R1
Isobutanol	ug/L	<20.0	250	250	180	176	72	70	60-140	2	
Methacrylonitrile	ug/L	<1.0	50	50	52.3	47.8	105	96	60-140	9	
Methyl methacrylate	ug/L	<1.0	50	50	54.9	51.5	110	103	54-131	6	
Methylene Chloride	ug/L	<1.0	50	50	49.6	49.1	99	98	61-142	1	
Propionitrile	ug/L	<4.0	50	50	48.9	43.8	98	88	60-140	11	
Styrene	ug/L	<1.0	50	50	54.0	51.6	108	103	72-118	5	
Tetrachloroethene	ug/L	<1.0	50	50	46.2	45.7	92	91	60-128	1	
Toluene	ug/L	<1.0	50	50	49.1	46.4	98	93	72-119	6	
trans-1,2-Dichloroethene	ug/L	<1.0	50	50	50.8	47.8	102	96	56-142	6	
trans-1,3-Dichloropropene	ug/L	<1.0	50	50	42.8	41.5	86	83	79-116	3	
trans-1,4-Dichloro-2-butene	ug/L	<1.0	50	50	5.7	5.5	11	11	71-121	4	M1
Trichloroethene	ug/L	<1.0	50	50	48.1	48.1	96	96	69-117	0	
Trichlorofluoromethane	ug/L	<1.0	50	50	59.2	60.9	118	122	27-173	3	
Vinyl acetate	ug/L	<1.0	50	50	43.2	41.6	86	83	20-158	4	
Vinyl chloride	ug/L	<1.0	50	50	64.6	67.5	129	135	43-143	4	CH
Xylene (Total)	ug/L	<3.0	150	150	148	147	99	98	71-109	1	
1,2-Dichloroethane-d4 (S)	%						97	100	68-153		
4-Bromofluorobenzene (S)	%						100	101	79-124		
Toluene-d8 (S)	%						91	92	69-124		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163158
QC Batch Method: EPA 3510C
Analysis Method: EPA 8082A
Analysis Description: 8082 GCS PCB
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 786026 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	<1.0	1.0	06/04/20 16:17	
PCB-1221 (Aroclor 1221)	ug/L	<1.0	1.0	06/04/20 16:17	
PCB-1232 (Aroclor 1232)	ug/L	<1.0	1.0	06/04/20 16:17	
PCB-1242 (Aroclor 1242)	ug/L	<1.0	1.0	06/04/20 16:17	
PCB-1248 (Aroclor 1248)	ug/L	<1.0	1.0	06/04/20 16:17	
PCB-1254 (Aroclor 1254)	ug/L	<1.0	1.0	06/04/20 16:17	
PCB-1260 (Aroclor 1260)	ug/L	<1.0	1.0	06/04/20 16:17	
Decachlorobiphenyl (S)	%	68	10-151	06/04/20 16:17	
Tetrachloro-m-xylene (S)	%	63	13-122	06/04/20 16:17	

LABORATORY CONTROL SAMPLE: 786027

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	5	3.3	66	30-121	
PCB-1260 (Aroclor 1260)	ug/L	5	4.0	80	42-134	
Decachlorobiphenyl (S)	%			55	10-151	
Tetrachloro-m-xylene (S)	%			64	13-122	

MATRIX SPIKE SAMPLE: 786028

Parameter	Units	70132489001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	<1.0	5	2.9	59	10-156	
PCB-1221 (Aroclor 1221)	ug/L	<1.0		<1.0			
PCB-1232 (Aroclor 1232)	ug/L	<1.0		<1.0			
PCB-1242 (Aroclor 1242)	ug/L	<1.0		<1.0			
PCB-1248 (Aroclor 1248)	ug/L	<1.0		<1.0			
PCB-1254 (Aroclor 1254)	ug/L	<1.0		<1.0			
PCB-1260 (Aroclor 1260)	ug/L	<1.0	5	3.8	75	26-160	
Decachlorobiphenyl (S)	%				29	10-151	
Tetrachloro-m-xylene (S)	%				28	13-122	

SAMPLE DUPLICATE: 786029

Parameter	Units	70132784001 Result	Dup Result	RPD	Qualifiers
PCB-1016 (Aroclor 1016)	ug/L	<1.0	<1.0		
PCB-1221 (Aroclor 1221)	ug/L	<1.0	<1.0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

SAMPLE DUPLICATE: 786029

Parameter	Units	70132784001 Result	Dup Result	RPD	Qualifiers
PCB-1232 (Aroclor 1232)	ug/L	<1.0	<1.0		
PCB-1242 (Aroclor 1242)	ug/L	<1.0	<1.0		
PCB-1248 (Aroclor 1248)	ug/L	<1.0	<1.0		
PCB-1254 (Aroclor 1254)	ug/L	<1.0	<1.0		
PCB-1260 (Aroclor 1260)	ug/L	<1.0	<1.0		
Decachlorobiphenyl (S)	%	55	73		
Tetrachloro-m-xylene (S)	%	68	67		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163006
QC Batch Method: EPA 8151A
Analysis Method: EPA 8151A
Analysis Description: 8151A GCS Herbicides
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 785509 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
2,4,5-T	ug/L	<0.25	0.25	06/04/20 14:10	
2,4,5-TP (Silvex)	ug/L	<0.25	0.25	06/04/20 14:10	
2,4-D	ug/L	<0.50	0.50	06/04/20 14:10	
Dinoseb	ug/L	<0.20	0.20	06/04/20 14:10	
2,4-DCAA (S)	%	100	13-144	06/04/20 14:10	

LABORATORY CONTROL SAMPLE: 785510

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2,4,5-T	ug/L	1	0.83	83	18-133	
2,4,5-TP (Silvex)	ug/L	1	0.94	93	25-135	
2,4-D	ug/L	3	2.6	88	45-113	
Dinoseb	ug/L	2	1.1	56	10-110	
2,4-DCAA (S)	%			93	13-144	

MATRIX SPIKE SAMPLE: 785511

Parameter	Units	70132489001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
2,4,5-T	ug/L	0.12J	1	0.56	44	12-129	
2,4,5-TP (Silvex)	ug/L	<0.25	1	1.1	105	17-121	
2,4-D	ug/L	1.3	3	4.2	98	17-116	
Dinoseb	ug/L	<0.20	2	5.8	286	18-121	E,M1
2,4-DCAA (S)	%				19	13-144	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163797
QC Batch Method: EPA 3510C
Analysis Method: EPA 8270D
Analysis Description: 8270 Water MSSV
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 790034 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
1,2,4-Trichlorobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
1,2-Dichlorobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
1,3,5-Trinitrobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
1,3-Dichlorobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
1,3-Dinitrobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
1,4-Dichlorobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
1,4-Naphthoquinone	ug/L	<5.0	5.0	06/09/20 19:07	CL
1-Naphthylamine	ug/L	<5.0	5.0	06/09/20 19:07	IL
2,2'-Oxybis(1-chloropropane)	ug/L	<5.0	5.0	06/09/20 19:07	CL,IL
2,3,4,6-Tetrachlorophenol	ug/L	<5.0	5.0	06/09/20 19:07	
2,4,5-Trichlorophenol	ug/L	<5.0	5.0	06/09/20 19:07	
2,4,6-Trichlorophenol	ug/L	<5.0	5.0	06/09/20 19:07	
2,4-Dichlorophenol	ug/L	<5.0	5.0	06/09/20 19:07	
2,4-Dimethylphenol	ug/L	<5.0	5.0	06/09/20 19:07	
2,4-Dinitrophenol	ug/L	<10.0	10.0	06/09/20 19:07	
2,4-Dinitrotoluene	ug/L	<5.0	5.0	06/09/20 19:07	
2,6-Dichlorophenol	ug/L	<5.0	5.0	06/09/20 19:07	
2,6-Dinitrotoluene	ug/L	<5.0	5.0	06/09/20 19:07	
2-Acetylaminofluorene	ug/L	<5.0	5.0	06/09/20 19:07	
2-Chloronaphthalene	ug/L	<5.0	5.0	06/09/20 19:07	
2-Chlorophenol	ug/L	<5.0	5.0	06/09/20 19:07	
2-Methylnaphthalene	ug/L	<5.0	5.0	06/09/20 19:07	
2-Methylphenol(o-Cresol)	ug/L	<5.0	5.0	06/09/20 19:07	
2-Naphthylamine	ug/L	<5.0	5.0	06/09/20 19:07	
2-Nitroaniline	ug/L	<5.0	5.0	06/09/20 19:07	
2-Nitrophenol	ug/L	<5.0	5.0	06/09/20 19:07	
3&4-Methylphenol(m&p Cresol)	ug/L	<5.0	5.0	06/09/20 19:07	
3,3'-Dichlorobenzidine	ug/L	<5.0	5.0	06/09/20 19:07	
3,3'-Dimethylbenzidine	ug/L	<5.0	5.0	06/09/20 19:07	IL
3-Methylcholanthrene	ug/L	<5.0	5.0	06/09/20 19:07	
3-Nitroaniline	ug/L	<5.0	5.0	06/09/20 19:07	
4,6-Dinitro-2-methylphenol	ug/L	<10.0	10.0	06/09/20 19:07	
4-Aminobiphenyl	ug/L	<5.0	5.0	06/09/20 19:07	IL
4-Bromophenylphenyl ether	ug/L	<5.0	5.0	06/09/20 19:07	
4-Chloro-3-methylphenol	ug/L	<5.0	5.0	06/09/20 19:07	
4-Chloroaniline	ug/L	<5.0	5.0	06/09/20 19:07	
4-Chlorophenylphenyl ether	ug/L	<5.0	5.0	06/09/20 19:07	
4-Nitroaniline	ug/L	<5.0	5.0	06/09/20 19:07	
4-Nitrophenol	ug/L	<10.0	10.0	06/09/20 19:07	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

METHOD BLANK: 790034 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
5-Nitro-o-toluidine	ug/L	<5.0	5.0	06/09/20 19:07	
7,12-Dimethylbenz(a)anthracene	ug/L	<5.0	5.0	06/09/20 19:07	
Acenaphthene	ug/L	<5.0	5.0	06/09/20 19:07	
Acenaphthylene	ug/L	<5.0	5.0	06/09/20 19:07	
Acetophenone	ug/L	<5.0	5.0	06/09/20 19:07	
Anthracene	ug/L	<5.0	5.0	06/09/20 19:07	
Benzo(a)anthracene	ug/L	<5.0	5.0	06/09/20 19:07	
Benzo(a)pyrene	ug/L	<5.0	5.0	06/09/20 19:07	
Benzo(b)fluoranthene	ug/L	<5.0	5.0	06/09/20 19:07	
Benzo(g,h,i)perylene	ug/L	<5.0	5.0	06/09/20 19:07	
Benzo(k)fluoranthene	ug/L	<5.0	5.0	06/09/20 19:07	
Benzyl alcohol	ug/L	<5.0	5.0	06/09/20 19:07	
bis(2-Chloroethoxy)methane	ug/L	<5.0	5.0	06/09/20 19:07	
bis(2-Chloroethyl) ether	ug/L	<5.0	5.0	06/09/20 19:07	
bis(2-Ethylhexyl)phthalate	ug/L	<5.0	5.0	06/09/20 19:07	
Butylbenzylphthalate	ug/L	<5.0	5.0	06/09/20 19:07	
Chlorobenzilate	ug/L	<5.0	5.0	06/09/20 19:07	
Chrysene	ug/L	<5.0	5.0	06/09/20 19:07	
Di-n-butylphthalate	ug/L	<5.0	5.0	06/09/20 19:07	
Di-n-octylphthalate	ug/L	<5.0	5.0	06/09/20 19:07	
Diallate	ug/L	<5.0	5.0	06/09/20 19:07	
Dibenz(a,h)anthracene	ug/L	<5.0	5.0	06/09/20 19:07	
Dibenzofuran	ug/L	<5.0	5.0	06/09/20 19:07	
Diethylphthalate	ug/L	<5.0	5.0	06/09/20 19:07	
Dimethoate	ug/L	<5.0	5.0	06/09/20 19:07	
Dimethylphthalate	ug/L	<5.0	5.0	06/09/20 19:07	
Disulfoton	ug/L	<5.0	5.0	06/09/20 19:07	
Ethyl methanesulfonate	ug/L	<5.0	5.0	06/09/20 19:07	
Famphur	ug/L	<10.0	10.0	06/09/20 19:07	CL,IC,IL
Fluoranthene	ug/L	<5.0	5.0	06/09/20 19:07	
Fluorene	ug/L	<5.0	5.0	06/09/20 19:07	
Hexachloro-1,3-butadiene	ug/L	<5.0	5.0	06/09/20 19:07	
Hexachlorobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
Hexachlorocyclopentadiene	ug/L	<5.0	5.0	06/09/20 19:07	
Hexachloroethane	ug/L	<5.0	5.0	06/09/20 19:07	
Hexachloropropene	ug/L	<5.0	5.0	06/09/20 19:07	
Indeno(1,2,3-cd)pyrene	ug/L	<5.0	5.0	06/09/20 19:07	
Isodrin	ug/L	<5.0	5.0	06/09/20 19:07	
Isophorone	ug/L	<5.0	5.0	06/09/20 19:07	
Isosafrole	ug/L	<5.0	5.0	06/09/20 19:07	
Kepone	ug/L	<10.0	10.0	06/09/20 19:07	CL,IC,IL
Methapyrilene	ug/L	<5.0	5.0	06/09/20 19:07	IC
Methyl methanesulfonate	ug/L	<5.0	5.0	06/09/20 19:07	
Methyl parathion	ug/L	<5.0	5.0	06/09/20 19:07	
N-Nitroso-di-n-butylamine	ug/L	<5.0	5.0	06/09/20 19:07	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

METHOD BLANK: 790034 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
N-Nitroso-di-n-propylamine	ug/L	<5.0	5.0	06/09/20 19:07	
N-Nitrosodiethylamine	ug/L	<5.0	5.0	06/09/20 19:07	
N-Nitrosodimethylamine	ug/L	<5.0	5.0	06/09/20 19:07	
N-Nitrosodiphenylamine	ug/L	<5.0	5.0	06/09/20 19:07	
N-Nitrosomethylethylamine	ug/L	<5.0	5.0	06/09/20 19:07	
N-Nitrosopiperidine	ug/L	<5.0	5.0	06/09/20 19:07	
N-Nitrosopyrrolidine	ug/L	<5.0	5.0	06/09/20 19:07	
Naphthalene	ug/L	<5.0	5.0	06/09/20 19:07	
Nitrobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
O,O,O-Triethylphosphorothioate	ug/L	<5.0	5.0	06/09/20 19:07	
O-Toluidine	ug/L	<5.0	5.0	06/09/20 19:07	
P-Dimethylaminoazobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
p-Phenylenediamine	ug/L	<10.0	10.0	06/09/20 19:07	IL
Parathion (Ethyl parathion)	ug/L	<5.0	5.0	06/09/20 19:07	
Pentachlorobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
Pentachloronitrobenzene	ug/L	<5.0	5.0	06/09/20 19:07	
Pentachlorophenol	ug/L	<10.0	10.0	06/09/20 19:07	
Phenacetin	ug/L	<5.0	5.0	06/09/20 19:07	
Phenanthrene	ug/L	<5.0	5.0	06/09/20 19:07	
Phenol	ug/L	<5.0	5.0	06/09/20 19:07	
Pronamide	ug/L	<5.0	5.0	06/09/20 19:07	
Pyrene	ug/L	<5.0	5.0	06/09/20 19:07	
Safrole	ug/L	<5.0	5.0	06/09/20 19:07	
Thionazin	ug/L	<5.0	5.0	06/09/20 19:07	
1,2-Dichlorobenzene-d4 (S)	%	67	16-110	06/09/20 19:07	
2,4,6-Tribromophenol (S)	%	93	10-123	06/09/20 19:07	
2-Chlorophenol-d4 (S)	%	78	33-110	06/09/20 19:07	
2-Fluorobiphenyl (S)	%	81	43-116	06/09/20 19:07	
2-Fluorophenol (S)	%	54	21-110	06/09/20 19:07	
Nitrobenzene-d5 (S)	%	83	35-114	06/09/20 19:07	
p-Terphenyl-d14 (S)	%	96	33-141	06/09/20 19:07	
Phenol-d5 (S)	%	37	10-110	06/09/20 19:07	

LABORATORY CONTROL SAMPLE: 790035

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	25	23.0	92	60-140	
1,2,4-Trichlorobenzene	ug/L	25	20.1	80	25-129	
1,2-Dichlorobenzene	ug/L	25	17.4	70	28-116	
1,3,5-Trinitrobenzene	ug/L	25	33.0	132	60-140	
1,3-Dichlorobenzene	ug/L	25	16.6	66	18-122	
1,3-Dinitrobenzene	ug/L	25	26.9	108	60-140	
1,4-Dichlorobenzene	ug/L	25	16.6	67	25-123	
1,4-Naphthoquinone	ug/L	25	34.8	139	60-140	CL

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

LABORATORY CONTROL SAMPLE: 790035

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1-Naphthylamine	ug/L	25	18.9	76	29-75	IL,L1
2,2'-Oxybis(1-chloropropane)	ug/L	25	18.7	75	44-100	CL,IL
2,3,4,6-Tetrachlorophenol	ug/L	25	27.4	110	42-134	
2,4,5-Trichlorophenol	ug/L	25	27.8	111	55-125	
2,4,6-Trichlorophenol	ug/L	25	27.6	110	55-114	
2,4-Dichlorophenol	ug/L	25	26.7	107	44-127	
2,4-Dimethylphenol	ug/L	25	21.9	88	39-135	
2,4-Dinitrophenol	ug/L	25	24.1	96	11-101	
2,4-Dinitrotoluene	ug/L	25	29.0	116	55-122	
2,6-Dichlorophenol	ug/L	25	25.7	103	54-95	L1
2,6-Dinitrotoluene	ug/L	25	29.0	116	56-121	
2-Acetylaminofluorene	ug/L	25	26.6	106	77-112	
2-Chloronaphthalene	ug/L	25	24.0	96	41-122	
2-Chlorophenol	ug/L	25	22.8	91	43-106	
2-Methylnaphthalene	ug/L	25	23.6	94	31-123	
2-Methylphenol(o-Cresol)	ug/L	25	21.5	86	41-131	
2-Naphthylamine	ug/L	25	22.6	90	60-140	
2-Nitroaniline	ug/L	25	21.4	86	48-124	
2-Nitrophenol	ug/L	25	27.4	109	41-128	
3&4-Methylphenol(m&p Cresol)	ug/L	25	20.7	83	15-141	
3,3'-Dichlorobenzidine	ug/L	25	25.9	104	20-132	
3,3'-Dimethylbenzidine	ug/L	25	17.7	71	40-130	IL
3-Methylcholanthrene	ug/L	25	25.3	101	60-140	
3-Nitroaniline	ug/L	25	28.8	115	46-112	L1
4,6-Dinitro-2-methylphenol	ug/L	25	30.3	121	28-150	
4-Aminobiphenyl	ug/L	25	23.4	94	60-140	IL
4-Bromophenylphenyl ether	ug/L	25	28.8	115	53-121	
4-Chloro-3-methylphenol	ug/L	25	27.4	110	48-124	
4-Chloroaniline	ug/L	25	23.1	92	25-133	
4-Chlorophenylphenyl ether	ug/L	25	27.5	110	53-116	
4-Nitroaniline	ug/L	25	26.3	105	51-113	
4-Nitrophenol	ug/L	25	13.2	53	10-102	
5-Nitro-o-toluidine	ug/L	25	25.2	101	60-140	
7,12-Dimethylbenz(a)anthracene	ug/L	25	24.6	98	60-140	
Acenaphthene	ug/L	25	26.3	105	50-116	
Acenaphthylene	ug/L	25	26.2	105	50-109	
Acetophenone	ug/L	25	24.5	98	42-97	L1
Anthracene	ug/L	25	28.5	114	54-117	
Benzo(a)anthracene	ug/L	25	28.5	114	31-128	
Benzo(a)pyrene	ug/L	25	26.7	107	30-146	
Benzo(b)fluoranthene	ug/L	25	25.6	102	43-147	
Benzo(g,h,i)perylene	ug/L	25	30.5	122	25-153	
Benzo(k)fluoranthene	ug/L	25	25.4	102	28-148	
Benzyl alcohol	ug/L	25	20.9	84	32-143	
bis(2-Chloroethoxy)methane	ug/L	25	24.9	100	47-102	
bis(2-Chloroethyl) ether	ug/L	25	22.6	90	39-111	
bis(2-Ethylhexyl)phthalate	ug/L	25	27.5	110	37-138	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

LABORATORY CONTROL SAMPLE: 790035

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Butylbenzylphthalate	ug/L	25	28.4	114	38-135	
Chlorobenzilate	ug/L	25	28.2	113	60-140	
Chrysene	ug/L	25	29.0	116	42-140	
Di-n-butylphthalate	ug/L	25	29.4	118	50-128	
Di-n-octylphthalate	ug/L	25	25.7	103	32-148	
Diallate	ug/L	25	25.0	100	60-140	
Dibenz(a,h)anthracene	ug/L	25	28.0	112	22-147	
Dibenzofuran	ug/L	25	26.9	108	53-117	
Diethylphthalate	ug/L	25	28.3	113	54-124	
Dimethoate	ug/L	25	28.3	113	60-140	
Dimethylphthalate	ug/L	25	28.2	113	56-121	
Disulfoton	ug/L	25	23.4	94	10-143	
Ethyl methanesulfonate	ug/L	25	22.1	89	41-116	
Famphur	ug/L	25	26.3	105	33-106	CL,IC,IL
Fluoranthene	ug/L	25	29.9	119	50-123	
Fluorene	ug/L	25	27.1	108	51-118	
Hexachloro-1,3-butadiene	ug/L	25	18.3	73	18-90	
Hexachlorobenzene	ug/L	25	28.8	115	52-128	
Hexachlorocyclopentadiene	ug/L	25	19.9	79	13-119	
Hexachloroethane	ug/L	25	15.2	61	41-119	
Hexachloropropene	ug/L	25	17.7	71	40-140	
Indeno(1,2,3-cd)pyrene	ug/L	25	27.9	112	26-156	
Isodrin	ug/L	25	28.2	113	40-140	
Isophorone	ug/L	25	25.1	100	46-118	
Isosafrole	ug/L	25	24.1	96	40-140	
Kepone	ug/L	25	<10.0	1	10-150	CL,IC,IL,L2
Methapyrilene	ug/L	25	7.0	28	10-109	IC
Methyl methanesulfonate	ug/L	25	16.9	68	41-143	
Methyl parathion	ug/L	25	32.5	130	60-140	
N-Nitroso-di-n-butylamine	ug/L	25	21.3	85	57-100	
N-Nitroso-di-n-propylamine	ug/L	25	24.3	97	40-124	
N-Nitrosodiethylamine	ug/L	25	21.6	86	21-155	
N-Nitrosodimethylamine	ug/L	25	13.4	54	36-104	
N-Nitrosodiphenylamine	ug/L	25	27.7	111	41-95	L1
N-Nitrosomethylethylamine	ug/L	25	16.3	65	33-152	
N-Nitrosopiperidine	ug/L	25	18.9	75	40-113	
N-Nitrosopyrrolidine	ug/L	25	22.4	90	27-98	
Naphthalene	ug/L	25	22.2	89	39-107	
Nitrobenzene	ug/L	25	23.7	95	41-122	
O,O,O-Triethylphosphorothioate	ug/L	25	25.9	104	46-112	
O-Toluidine	ug/L	25	18.6	75	36-99	
P-Dimethylaminoazobenzene	ug/L	25	24.2	97	21-166	
p-Phenylenediamine	ug/L	25	<10.0	10	60-140	IL,L2
Parathion (Ethyl parathion)	ug/L	25	28.3	113	60-140	
Pentachlorobenzene	ug/L	25	26.8	107	46-113	
Pentachloronitrobenzene	ug/L	25	28.0	112	53-140	
Pentachlorophenol	ug/L	25	25.4	102	12-124	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

LABORATORY CONTROL SAMPLE: 790035

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenacetin	ug/L	25	27.3	109	30-143	
Phenanthrene	ug/L	25	28.4	113	52-126	
Phenol	ug/L	25	11.7	47	10-99	
Pronamide	ug/L	25	27.6	110	60-140	
Pyrene	ug/L	25	29.5	118	41-137	
Safrole	ug/L	25	25.0	100	49-106	
Thionazin	ug/L	25	26.0	104	50-140	
1,2-Dichlorobenzene-d4 (S)	%			68	16-110	
2,4,6-Tribromophenol (S)	%			101	10-123	
2-Chlorophenol-d4 (S)	%			80	33-110	
2-Fluorobiphenyl (S)	%			87	43-116	
2-Fluorophenol (S)	%			53	21-110	
Nitrobenzene-d5 (S)	%			87	35-114	
p-Terphenyl-d14 (S)	%			100	33-141	
Phenol-d5 (S)	%			36	10-110	

MATRIX SPIKE SAMPLE: 790076

Parameter	Units	70133599006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2,4,5-Tetrachlorobenzene	ug/L	<5.0	25	21.4	85	60-140	
1,2,4-Trichlorobenzene	ug/L	<5.0	25	17.9	72	25-129	
1,2-Dichlorobenzene	ug/L	<5.0	25	14.4	57	28-116	
1,3,5-Trinitrobenzene	ug/L	<5.0	25	28.4	113	60-140	
1,3-Dichlorobenzene	ug/L	<5.0	25	13.5	54	18-122	
1,3-Dinitrobenzene	ug/L	<5.0	25	24.5	98	60-140	
1,4-Dichlorobenzene	ug/L	<5.0	25	13.6	54	25-123	
1,4-Naphthoquinone	ug/L	<5.0	25	30.5	122	60-140	CL
1-Naphthylamine	ug/L	<5.0	25	<5.0	0	29-75	IL,M0
2,2'-Oxybis(1-chloropropane)	ug/L	<5.0	25	15.4	62	44-100	CL,IL
2,3,4,6-Tetrachlorophenol	ug/L	<5.0	25	24.8	99	42-134	
2,4,5-Trichlorophenol	ug/L	<5.0	25	25.7	103	55-125	
2,4,6-Trichlorophenol	ug/L	<5.0	25	24.9	99	55-114	
2,4-Dichlorophenol	ug/L	<5.0	25	23.3	93	44-127	
2,4-Dimethylphenol	ug/L	<5.0	25	20.1	80	39-135	
2,4-Dinitrophenol	ug/L	<10.0	25	9.9J	40	11-101	
2,4-Dinitrotoluene	ug/L	<5.0	25	26.4	105	55-122	
2,6-Dichlorophenol	ug/L	<5.0	25	22.4	89	54-95	
2,6-Dinitrotoluene	ug/L	<5.0	25	26.2	105	56-121	
2-Acetylaminofluorene	ug/L	<5.0	25	<5.0	0	77-112	M1
2-Chloronaphthalene	ug/L	<5.0	25	23.7	95	41-122	
2-Chlorophenol	ug/L	<5.0	25	19.4	78	43-106	
2-Methylnaphthalene	ug/L	<5.0	25	21.6	86	31-123	
2-Methylphenol(o-Cresol)	ug/L	<5.0	25	17.7	71	41-131	
2-Naphthylamine	ug/L	<5.0	25	<5.0	0	60-140	M1
2-Nitroaniline	ug/L	<5.0	25	19.1	76	48-124	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

MATRIX SPIKE SAMPLE: 790076

Parameter	Units	70133599006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
2-Nitrophenol	ug/L	<5.0	25	23.3	93	41-128	
3&4-Methylphenol(m&p Cresol)	ug/L	<5.0	25	15.7	63	15-141	
3,3'-Dichlorobenzidine	ug/L	<5.0	25	<5.0	0	20-132	M1
3,3'-Dimethylbenzidine	ug/L	<5.0	25	<5.0	0	40-130	IL,M1
3-Methylcholanthrene	ug/L	<5.0	25	23.5	94	60-140	
3-Nitroaniline	ug/L	<5.0	25	25.7	103	46-112	
4,6-Dinitro-2-methylphenol	ug/L	<10.0	25	16.3	65	28-150	
4-Aminobiphenyl	ug/L	<5.0	25	0.49J	2	60-140	IL,M1
4-Bromophenylphenyl ether	ug/L	<5.0	25	26.0	104	53-121	
4-Chloro-3-methylphenol	ug/L	<5.0	25	24.2	97	48-124	
4-Chloroaniline	ug/L	<5.0	25	20.2	81	25-133	
4-Chlorophenylphenyl ether	ug/L	<5.0	25	25.0	100	53-116	
4-Nitroaniline	ug/L	<5.0	25	22.7	91	51-113	
4-Nitrophenol	ug/L	<10.0	25	14.6	58	10-102	
5-Nitro-o-toluidine	ug/L	<5.0	25	<5.0	0	60-140	M1
7,12-Dimethylbenz(a)anthracene	ug/L	<5.0	25	23.0	92	60-140	
Acenaphthene	ug/L	<5.0	25	23.8	95	50-116	
Acenaphthylene	ug/L	<5.0	25	23.7	95	50-109	
Acetophenone	ug/L	<5.0	25	20.7	83	42-97	
Anthracene	ug/L	<5.0	25	26.1	104	54-117	
Benzo(a)anthracene	ug/L	<5.0	25	27.6	110	31-128	
Benzo(a)pyrene	ug/L	<5.0	25	25.6	102	30-146	
Benzo(b)fluoranthene	ug/L	<5.0	25	24.6	98	43-147	
Benzo(g,h,i)perylene	ug/L	<5.0	25	24.8	99	25-153	
Benzo(k)fluoranthene	ug/L	<5.0	25	24.6	98	28-148	
Benzyl alcohol	ug/L	<5.0	25	16.9	68	32-143	
bis(2-Chloroethoxy)methane	ug/L	<5.0	25	21.4	85	47-102	
bis(2-Chloroethyl) ether	ug/L	<5.0	25	18.9	76	39-111	
bis(2-Ethylhexyl)phthalate	ug/L	<5.0	25	26.7	106	37-138	
Butylbenzylphthalate	ug/L	<5.0	25	27.2	109	38-135	
Chlorobenzilate	ug/L	<5.0	25	26.6	106	60-140	
Chrysene	ug/L	<5.0	25	28.3	113	42-140	
Di-n-butylphthalate	ug/L	<5.0	25	27.2	108	50-128	
Di-n-octylphthalate	ug/L	<5.0	25	25.1	101	32-148	
Diallate	ug/L	<5.0	25	22.9	92	60-140	
Dibenz(a,h)anthracene	ug/L	<5.0	25	25.4	101	22-147	
Dibenzofuran	ug/L	<5.0	25	24.5	98	53-117	
Diethylphthalate	ug/L	<5.0	25	25.8	103	54-124	
Dimethoate	ug/L	<5.0	25	25.7	103	60-140	
Dimethylphthalate	ug/L	<5.0	25	25.2	101	56-121	
Disulfoton	ug/L	<5.0	25	20.7	83	10-143	
Ethyl methanesulfonate	ug/L	<5.0	25	18.8	75	41-116	
Famphur	ug/L	<10.0	25	99.2	397	33-106	CL,E,IC,IL, M1
Fluoranthene	ug/L	<5.0	25	27.3	109	50-123	
Fluorene	ug/L	<5.0	25	24.8	99	51-118	
Hexachloro-1,3-butadiene	ug/L	<5.0	25	16.4	66	18-90	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

MATRIX SPIKE SAMPLE: 790076

Parameter	Units	70133599006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Hexachlorobenzene	ug/L	<5.0	25	26.3	105	52-128	
Hexachlorocyclopentadiene	ug/L	<5.0	25	14.9	60	13-119	
Hexachloroethane	ug/L	<5.0	25	12.3	49	41-119	
Hexachloropropene	ug/L	<5.0	25	15.7	63	40-140	
Indeno(1,2,3-cd)pyrene	ug/L	<5.0	25	25.8	103	26-156	
Isodrin	ug/L	<5.0	25	24.1	96	40-140	
Isophorone	ug/L	<5.0	25	21.7	87	46-118	
Isosafrole	ug/L	<5.0	25	21.3	85	40-140	
Kepone	ug/L	<10.0	25	<10.0	1	10-150	CL,IC,IL,M0
Methapyrilene	ug/L	<5.0	25	<5.0	0	10-109	IC,M1
Methyl methanesulfonate	ug/L	<5.0	25	14.5	58	41-143	
Methyl parathion	ug/L	<5.0	25	30.5	122	60-140	
N-Nitroso-di-n-butylamine	ug/L	<5.0	25	<5.0	0	57-100	M1
N-Nitroso-di-n-propylamine	ug/L	<5.0	25	20.9	84	40-124	
N-Nitrosodiethylamine	ug/L	<5.0	25	<5.0	0	21-155	M1
N-Nitrosodimethylamine	ug/L	<5.0	25	10.9	44	36-104	
N-Nitrosodiphenylamine	ug/L	<5.0	25	24.7	99	41-95	M0
N-Nitrosomethylethylamine	ug/L	<5.0	25	<5.0	0	33-152	M1
N-Nitrosopiperidine	ug/L	<5.0	25	<5.0	0	40-113	M1
N-Nitrosopyrrolidine	ug/L	<5.0	25	<5.0	0	27-98	M1
Naphthalene	ug/L	<5.0	25	19.3	77	39-107	
Nitrobenzene	ug/L	<5.0	25	20.2	81	41-122	
O,O,O-Triethylphosphorothioate	ug/L	<5.0	25	22.6	90	46-112	
O-Toluidine	ug/L	<5.0	25	1.4J	5	36-99	M1
P-Dimethylaminoazobenzene	ug/L	<5.0	25	<5.0	0	21-166	M1
p-Phenylenediamine	ug/L	<10.0	25	<10.0	0	60-140	IL,M0
Parathion (Ethyl parathion)	ug/L	<5.0	25	25.6	102	60-140	
Pentachlorobenzene	ug/L	<5.0	25	24.5	98	46-113	
Pentachloronitrobenzene	ug/L	<5.0	25	25.6	103	53-140	
Pentachlorophenol	ug/L	<10.0	25	19.6	78	12-124	
Phenacetin	ug/L	<5.0	25	24.4	97	30-143	
Phenanthrene	ug/L	<5.0	25	26.1	104	52-126	
Phenol	ug/L	<5.0	25	8.4	34	10-99	
Pronamide	ug/L	<5.0	25	25.2	101	60-140	
Pyrene	ug/L	<5.0	25	27.9	112	41-137	
Safrole	ug/L	<5.0	25	22.3	89	49-106	
Thionazin	ug/L	<5.0	25	23.4	94	50-140	
1,2-Dichlorobenzene-d4 (S)	%				61	16-110	
2,4,6-Tribromophenol (S)	%				93	10-123	
2-Chlorophenol-d4 (S)	%				68	33-110	
2-Fluorobiphenyl (S)	%				79	43-116	
2-Fluorophenol (S)	%				43	21-110	
Nitrobenzene-d5 (S)	%				74	35-114	
p-Terphenyl-d14 (S)	%				85	33-141	
Phenol-d5 (S)	%				27	10-110	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 162526
QC Batch Method: SM22 2120B
Analysis Method: SM22 2120B
Analysis Description: 2120B Color
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 782669 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Apparent Color	units	<5.0	5.0	05/29/20 15:07	

LABORATORY CONTROL SAMPLE: 782670

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Apparent Color	units	40	40.0	100	90-110	

SAMPLE DUPLICATE: 782671

Parameter	Units	70132476002 Result	Dup Result	RPD	Qualifiers
Apparent Color	units	<5.0	<5.0		
pH	Std. Units	5.8	5.8	0	

SAMPLE DUPLICATE: 783113

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Apparent Color	units	50.0	50.0	0	
pH	Std. Units	6.9	6.9	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163705
QC Batch Method: SM22 2320B
Analysis Method: SM22 2320B
Analysis Description: 2320B Alkalinity
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 789425 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO3	mg/L	<1.0	1.0	06/09/20 09:24	

LABORATORY CONTROL SAMPLE: 789426

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	25	24.8	99	85-115	

MATRIX SPIKE SAMPLE: 789430

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	196	25	212	62	75-125	M1

SAMPLE DUPLICATE: 789429

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Alkalinity, Total as CaCO3	mg/L	196	190	3	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 164981
QC Batch Method: SM22 2340C
Analysis Method: SM22 2340C
Analysis Description: 2340C Hardness, Total
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 796192 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	<5.0	5.0	06/16/20 16:01	

LABORATORY CONTROL SAMPLE: 796193

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	100	103	103	90-110	

MATRIX SPIKE SAMPLE: 796194

Parameter	Units	70132217001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	280	2000	2220	97	75-125	

MATRIX SPIKE SAMPLE: 796196

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	10200	20000	29400	96	75-125	

SAMPLE DUPLICATE: 796195

Parameter	Units	70132217001 Result	Dup Result	RPD	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	280	320	13	

SAMPLE DUPLICATE: 796197

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Tot Hardness asCaCO3 (SM 2340B	mg/L	10200	10400	2	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163053
QC Batch Method: SM22 2540C
Analysis Method: SM22 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 785631 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<10.0	10.0	06/03/20 10:24	

LABORATORY CONTROL SAMPLE: 785632

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	500	486	97	85-115	

MATRIX SPIKE SAMPLE: 785634

Parameter	Units	70132432001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1200	300	1460	87	75-125	

MATRIX SPIKE SAMPLE: 785636

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	13700	600	14400	105	75-125	

SAMPLE DUPLICATE: 785633

Parameter	Units	70132432001 Result	Dup Result	RPD	Qualifiers
Total Dissolved Solids	mg/L	1200	1170	3	

SAMPLE DUPLICATE: 785635

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Total Dissolved Solids	mg/L	13700	14200	4	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 162457
QC Batch Method: SM22 3500-Cr B
Analysis Method: SM22 3500-Cr B
Analysis Description: Chromium, Hexavalent by 3500
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 782500 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/L	<0.020	0.020	05/29/20 07:52	

LABORATORY CONTROL SAMPLE: 782501

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/L	0.2	0.20	101	85-115	

MATRIX SPIKE SAMPLE: 782502

Parameter	Units	70132491004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/L	<0.020	0.2	0.19	97	75-125	

SAMPLE DUPLICATE: 782503

Parameter	Units	70132491004 Result	Dup Result	RPD	Qualifiers
Chromium, Hexavalent	mg/L	<0.020	<0.020		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163807
QC Batch Method: EPA 410.4
Analysis Method: EPA 410.4
Analysis Description: 410.4 COD
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 790048 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chemical Oxygen Demand	mg/L	<10.0	10.0	06/09/20 11:59	

LABORATORY CONTROL SAMPLE: 790049

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	500	521	104	90-110	

MATRIX SPIKE SAMPLE: 790050

Parameter	Units	70132220004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	29.4	1000	1030	100	90-110	

MATRIX SPIKE SAMPLE: 790052

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chemical Oxygen Demand	mg/L	494	1000	1310	82	90-110	M1

SAMPLE DUPLICATE: 790051

Parameter	Units	70132220004 Result	Dup Result	RPD	Qualifiers
Chemical Oxygen Demand	mg/L	29.4	29.4	0	

SAMPLE DUPLICATE: 790053

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Chemical Oxygen Demand	mg/L	494	528	7	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 162564
QC Batch Method: SM22 5210B
Analysis Method: SM22 5210B
Analysis Description: 5210B BOD, 5 day
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 782999 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
BOD, 5 day	mg/L	<2.0	2.0	06/03/20 11:44	

LABORATORY CONTROL SAMPLE: 783000

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	177	90	84.5-115.4	

SAMPLE DUPLICATE: 783001

Parameter	Units	70132536001 Result	Dup Result	RPD	Qualifiers
BOD, 5 day	mg/L	182	202	11	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163044
QC Batch Method: EPA 9030B
Analysis Method: EPA 9034
Analysis Description: 9034 Sulfide Waste Water
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 785615 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfide	mg/L	<2.0	2.0	06/03/20 16:31	

LABORATORY CONTROL SAMPLE: 785616

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	56.1	46.4	83	80-120	

SAMPLE DUPLICATE: 785617

Parameter	Units	70132489001 Result	Dup Result	RPD	Qualifiers
Sulfide	mg/L	25.6	30.4	17	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163757
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 789850 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Bromide	mg/L	<0.50	0.50	06/08/20 19:37	
Chloride	mg/L	<2.0	2.0	06/08/20 19:37	
Sulfate	mg/L	<5.0	5.0	06/08/20 19:37	

LABORATORY CONTROL SAMPLE: 789851

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	1	1.0	100	90-110	
Chloride	mg/L	10	10.7	107	90-110	
Sulfate	mg/L	10	10.7	107	90-110	

MATRIX SPIKE SAMPLE: 789852

Parameter	Units	70133362003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	<0.50	1	1.0	94	90-110	
Chloride	mg/L	32.3	10	43.4	111	90-110	M1
Sulfate	mg/L	16.9	10	26.5	96	90-110	

MATRIX SPIKE SAMPLE: 789925

Parameter	Units	70132541001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Bromide	mg/L	ND	1	1.0	98	90-110	
Chloride	mg/L	8.2	10	17.7	95	90-110	
Sulfate	mg/L	<5.0	10	14.0	103	90-110	

SAMPLE DUPLICATE: 789853

Parameter	Units	70133362003 Result	Dup Result	RPD	Qualifiers
Bromide	mg/L	<0.50	0.070J		
Chloride	mg/L	32.3	32.4	0	
Sulfate	mg/L	16.9	16.7	1	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

SAMPLE DUPLICATE: 789926

Parameter	Units	70132541001 Result	Dup Result	RPD	Qualifiers
Bromide	mg/L	ND	<0.50		
Chloride	mg/L	8.2	8.2	0	
Sulfate	mg/L	<5.0	3.7J		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163792
QC Batch Method: EPA 351.2
Analysis Method: EPA 351.2
Analysis Description: 351.2 TKN
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 790022 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.10	0.10	06/10/20 14:59	

LABORATORY CONTROL SAMPLE: 790023

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	4	4.4	110	90-110	

MATRIX SPIKE SAMPLE: 790024

Parameter	Units	70132408002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.10	4	2.8	69	90-110	M1

MATRIX SPIKE SAMPLE: 790026

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	11.2	20	37.7	132	90-110	M1

SAMPLE DUPLICATE: 790025

Parameter	Units	70132408002 Result	Dup Result	RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	<0.10	<0.10		

SAMPLE DUPLICATE: 790027

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Nitrogen, Kjeldahl, Total	mg/L	11.2	11.9	6	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 162438
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrite, Unpres.
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 782441 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrite as N	mg/L	<0.050	0.050	05/28/20 23:45	

LABORATORY CONTROL SAMPLE: 782442

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrite as N	mg/L	1	1.0	102	90-110	

MATRIX SPIKE SAMPLE: 782443

Parameter	Units	70132478001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrite as N	mg/L	<0.050	0.5	0.50	100	90-110	

MATRIX SPIKE SAMPLE: 782445

Parameter	Units	70132491001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrite as N	mg/L	0.061	0.5	0.50	88	90-110	M1

SAMPLE DUPLICATE: 782444

Parameter	Units	70132478001 Result	Dup Result	RPD	Qualifiers
Nitrite as N	mg/L	<0.050	<0.050		

SAMPLE DUPLICATE: 782446

Parameter	Units	70132491001 Result	Dup Result	RPD	Qualifiers
Nitrite as N	mg/L	0.061	0.067	9	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 164444
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, preserved
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 793813 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrate-Nitrite (as N)	mg/L	<0.050	0.050	06/12/20 00:45	

LABORATORY CONTROL SAMPLE: 793814

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrate-Nitrite (as N)	mg/L	1	1.0	100	90-110	

MATRIX SPIKE SAMPLE: 793815

Parameter	Units	70134120001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate-Nitrite (as N)	mg/L	6.1	5	11.1	99	90-110	

MATRIX SPIKE SAMPLE: 793817

Parameter	Units	70134109001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrate-Nitrite (as N)	mg/L	8.0	5	13.3	106	90-110	

SAMPLE DUPLICATE: 793816

Parameter	Units	70134120001 Result	Dup Result	RPD	Qualifiers
Nitrate-Nitrite (as N)	mg/L	6.1	6.0	1	

SAMPLE DUPLICATE: 793818

Parameter	Units	70134109001 Result	Dup Result	RPD	Qualifiers
Nitrate-Nitrite (as N)	mg/L	8.0	7.9	2	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163749
QC Batch Method: EPA 420.1
Analysis Method: EPA 420.1
Analysis Description: 420.1 Phenolics Macro
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 789780 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Phenolics, Total Recoverable	ug/L	<5.0	5.0	06/09/20 11:39	

LABORATORY CONTROL SAMPLE: 789781

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phenolics, Total Recoverable	ug/L	100	110	110	90-110	

MATRIX SPIKE SAMPLE: 789782

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Phenolics, Total Recoverable	ug/L	<5.0	50	63.3	122	75-125	

SAMPLE DUPLICATE: 789783

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Phenolics, Total Recoverable	ug/L	<5.0	<5.0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 164272
QC Batch Method: SM22 4500 NH3 H
Analysis Method: SM22 4500 NH3 H
Analysis Description: 4500 Ammonia
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 792754 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	<0.10	0.10	06/11/20 12:41	

LABORATORY CONTROL SAMPLE: 792755

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	0.97	97	90-110	

MATRIX SPIKE SAMPLE: 792756

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	11.4	10	21.3	99	75-125	

SAMPLE DUPLICATE: 792757

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Nitrogen, Ammonia	mg/L	11.4	11.3	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163670
QC Batch Method: EPA 9010C
Analysis Method: EPA 9014 Total Cyanide
Analysis Description: 9014 Cyanide, Total
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 789329 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	ug/L	<10.0	10.0	06/08/20 15:41	

LABORATORY CONTROL SAMPLE: 789330

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	ug/L	75	70.7	94	85-115	

MATRIX SPIKE SAMPLE: 789331

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	ug/L	<10.0	100	116	115	75-125	

SAMPLE DUPLICATE: 789332

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Cyanide	ug/L	<10.0	<10.0		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 163666
QC Batch Method: EPA 9060A
Analysis Method: EPA 9060A
Analysis Description: 9060 TOC
Laboratory: Pace Analytical Services - Melville
Associated Lab Samples: 70132489001

METHOD BLANK: 789321 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mean Total Organic Carbon	mg/L	<1.0	1.0	06/08/20 20:40	
Total Organic Carbon	mg/L	<1.0	1.0	06/08/20 20:40	
Total Organic Carbon	mg/L	<1.0	1.0	06/08/20 20:40	
Total Organic Carbon	mg/L	<1.0	1.0	06/08/20 20:40	
Total Organic Carbon	mg/L	<1.0	1.0	06/08/20 20:40	

LABORATORY CONTROL SAMPLE: 789322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/L	10	9.4	94	85-115	
Total Organic Carbon	mg/L	10	9.4	94	85-115	
Total Organic Carbon	mg/L	10	9.4	94	85-115	
Total Organic Carbon	mg/L	10	9.4	94	85-115	
Total Organic Carbon	mg/L	10	9.4	94	85-115	

MATRIX SPIKE SAMPLE: 789324

Parameter	Units	70132491003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mean Total Organic Carbon	mg/L	8.2	10	18.1	99	75-125	
Total Organic Carbon	mg/L	8.2	10	18.1	98	75-125	
Total Organic Carbon	mg/L	8.0	10	18.2	102	75-125	
Total Organic Carbon	mg/L	8.4	10	18.2	98	75-125	
Total Organic Carbon	mg/L	8.2	10	17.9	97	75-125	

SAMPLE DUPLICATE: 789323

Parameter	Units	70132491003 Result	Dup Result	RPD	Qualifiers
Mean Total Organic Carbon	mg/L	8.2	8.0	3	
Total Organic Carbon	mg/L	8.4	7.9	6	
Total Organic Carbon	mg/L	8.2	8.0	3	
Total Organic Carbon	mg/L	8.2	8.0	3	
Total Organic Carbon	mg/L	8.0	7.9	0	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Sample: CELL 7 PLCRS **Lab ID: 70132489001** Collected: 05/28/20 12:10 Received: 05/28/20 15:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**3.77 ± 2.18 (0.852) C:NA T:43%**	pCi/L	06/23/20 16:09	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**7.79 ± 2.29 (2.88) C:78% T:33%**	pCi/L	06/23/20 12:16	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Uranium	ASTM D5174-97	**0.751 ± 0.045 (2.620) C:NA T:NA**	ug/L	06/17/20 16:55	7440-61-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL - RADIOCHEMISTRY

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 399982
QC Batch Method: ASTM D5174-97
Analysis Method: ASTM D5174-97
Analysis Description: D5174.97 Total Uranium KPA
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 70132489001

METHOD BLANK: 1936969
Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Total Uranium	0.078 ± 0.005 (0.262) C:NA T:NA	ug/L	06/17/20 15:39	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL - RADIOCHEMISTRY

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 400080
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 70132489001

METHOD BLANK: 1937412
Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.143 ± 0.455 (0.804) C:NA T:85%	pCi/L	06/23/20 15:42	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL - RADIOCHEMISTRY

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

QC Batch: 400081
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 70132489001

METHOD BLANK: 1937413 Matrix: Water
Associated Lab Samples: 70132489001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	1.03 ± 0.465 (0.767) C:77% T:81%	pCi/L	06/23/20 12:17	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALIFIERS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

CH	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.
CL	The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased low.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H2	Extraction or preparation conducted outside EPA method holding time.
IC	The initial calibration for this compound was outside of method control limits. The result is estimated.
IH	This analyte exceeded secondary source verification criteria high for the initial calibration. The reported results should be considered an estimated value.
IL	This analyte exceeded secondary source verification criteria low for the initial calibration. The reported results should be considered an estimated value.
L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
L2	Analyte recovery in the laboratory control sample (LCS) was below QC limits. Results for this analyte in associated samples may be biased low.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALIFIERS

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

ANALYTE QUALIFIERS

M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
N	The reported TIC has an 85% or higher match on a mass spectral library search.
R1	RPD value was outside control limits.

Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747
(631)694-3040

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: CELL 7 LEACHATE EXPANDED 5/28
Pace Project No.: 70132489

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
70132489001	**CELL 7 PLCRS**	EPA 3510C	163159	EPA 8081B	163194
70132489001	**CELL 7 PLCRS**	EPA 3510C	163158	EPA 8082A	163193
70132489001	**CELL 7 PLCRS**	EPA 8151A	163006	EPA 8151A	163218
70132489001	**CELL 7 PLCRS**	EPA 3005A	163143	EPA 6010C	163146
70132489001	**CELL 7 PLCRS**	EPA 7470A	162815	EPA 7470A	162823
70132489001	**CELL 7 PLCRS**	EPA 3510C	163797	EPA 8270D	163937
70132489001	**CELL 7 PLCRS**	EPA 8260C SIM/5030C	163001		
70132489001	**CELL 7 PLCRS**	EPA 8260C/5030C	163393		
70132489001	**CELL 7 PLCRS**	EPA 903.1	400080		
70132489001	**CELL 7 PLCRS**	EPA 904.0	400081		
70132489001	**CELL 7 PLCRS**	ASTM D5174-97	399982		
70132489001	**CELL 7 PLCRS**	SM22 2120B	162526		
70132489001	**CELL 7 PLCRS**	SM22 2320B	163705		
70132489001	**CELL 7 PLCRS**	SM22 2340C	164981		
70132489001	**CELL 7 PLCRS**	SM22 2540C	163053		
70132489001	**CELL 7 PLCRS**	SM22 3500-Cr B	162457		
70132489001	**CELL 7 PLCRS**	EPA 410.4	163807	EPA 410.4	163853
70132489001	**CELL 7 PLCRS**	SM22 5210B	162564	SM22 5210B	163385
70132489001	**CELL 7 PLCRS**	EPA 9030B	163044	EPA 9034	163151
70132489001	**CELL 7 PLCRS**	EPA 300.0	163757		
70132489001	**CELL 7 PLCRS**	EPA 351.2	163792	EPA 351.2	163826
70132489001	**CELL 7 PLCRS**	EPA 353.2	164444		
70132489001	**CELL 7 PLCRS**	EPA 353.2	162438		
70132489001	**CELL 7 PLCRS**	EPA 420.1	163749	EPA 420.1	163842
70132489001	**CELL 7 PLCRS**	SM22 4500 NH3 H	164272		
70132489001	**CELL 7 PLCRS**	EPA 9010C	163670	EPA 9014 Total Cyanide	163697
70132489001	**CELL 7 PLCRS**	EPA 9060A	163666		

Pace Analytical
WWW.PACELABS.COM

CHAIN-OF-CUSTOD

The Chain-of-Custody is a LEG ely.

WO# : 70132489

70132489

Page : 1 Of 2

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Inform
Company:	Town of Babylon	Report To:	Joe Guarino	Attention:
Address:	281 Phelps Lane	Copy To:		Company Name:
	North Babylon, NY 11703			Address:
Email:	jguarino@townofbabylon.com	Purchase Order #:		Pace Quote:
Phone:	631-422-7640 Fax:	Project Name:	Cell 7 Leachate Expanded 360	Pace Project Manager: jennifer.aracri@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #: 5271 LINE 2 & 6

Regulatory Agency	
State / Location	
	NY

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: 8260	8270	8081	8082	8151	TAL Metals +B & Hardness	BOD,Br,Cl,SO4,Color,Cr+6	NO2, Alk, TDS	Cyanide	COD,NH3,NO3,TKN,Phenol	TOC	Sulfide	Residual Chlorine (Y/N)
1	Cell 7 PLCRS	WT				5/28/20	1210												X	X	X	X	X	X	X	X	X	X	X	
2																														
3																														
4																														
5																														
6																														
7																														
8																														
9																														
10																														
11																														
12																														

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Cell 7 Leachate Expanded 360	Brian Nichols/Zion	5/29/20	1500	PaceLT	5/28	1540	1.3	4 (C)	N	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Brian Nichols

SIGNATURE of SAMPLER: [signature] DATE Signed: 5/29/20

Pace Analytical
WWW.PACELABS.COM

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A	Section B	Section C
Required Client Information:	**Required Project Information:**	**Invoice Information:**
Company: Town of Babylon	Report To: Joe Guarino	Attention:
Address: 281 Phelps Lane	Copy To:	Company Name:
North Babylon, NY 11703		Address:
Email: jguarino@townofbabylon.com	Purchase Order #:	Pace Quote:
Phone: 631-422-7640 Fax	Project Name: Cell 7 Leachate Expanded 360	Pace Project Manager: jennifer.aracri@pacelabs.com,
Requested Due Date:	Project #:	Pace Profile #: 5271 LINE 2 & 6

Regulatory Agency
State / Location
NY

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Dioxin/Furan Scan	Radium 226	Radium 228	Uranium	1,4 Dioxane	PFAS by 537	Residual Chlorine (Y/N)
13	Cell 7 PLCRS	WT				5/25/20	1210												X	X	X	X	X		
14																									
15																									
16																									
17																									
18																									
19																									
20																									
21																									
22																									
23																									
24																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Cell 7 Leachate Expanded 360	Brian Nichols / Zion	5/25/20	1500	Hadley Pace LI	5/26	15:40	1.3 4@ N Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Brian Nichols

SIGNATURE of SAMPLER: Brian

DATE Signed: 5/28/20

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Sample Condition Upon Receipt

Pace Analytical

WO#: 70132489

PM: JSA Due Date: 06/11/20

CLIENT: BAB-ECO

Client Name: TOWN OF BABYLON Project

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☑ Client ☐ Commercial ☐ Pace ☐ Other

Tracking #:

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No Seals intact: ☐ Yes ☒ No

Temperature Blank Present: ☐ Yes ☑ No

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ Ziploc ☒ None ☐ Other

Type of Ice: (Wet) Blue None

Thermometer Used: TH091 Correction Factor: +0.2

☐ Samples on ice, cooling process has begun

Cooler Temperature (°C): 1.3 Cooler Temperature Corrected (°C): 1.5

Date/Time 5035A kits placed in freezer

Temp should be above freezing to 6.0°C

USDA Regulated Soil (☐ N/A, water sample) Date and Initials of person examining contents: KW 5/28/20

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA, MS, NC, NM, NY, OK, OR, SC, TN, TX, or VA (check map)? ☐ YES ☐ NO

Did samples orignate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☒ No

If Yes to either question, fill out a Regulated Soil Checklist (F-LI-C-010) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present:	☑Yes	☐No		1.
Chain of Custody Filled Out:	☑Yes	☐No		2.
Chain of Custody Relinquished:	☑Yes	☐No		3.
Sampler Name & Signature on COC:	☑Yes	☐No	☐N/A	4.
Samples Arrived within Hold Time:	☑Yes	☐No		5.
Short Hold Time Analysis (<72hr):	☑Yes	☐No		6.
Rush Turn Around Time Requested:	☐Yes	☑No		7.
Sufficient Volume: (Triple volume provided for MS/MSD	☑Yes	☐No		8.
Correct Containers Used:	☑Yes	☐No		9.
-Pace Containers Used:	☑Yes	☐No		
Containers Intact:	☑Yes	☐No		10.
Filtered volume received for Dissolved tests	☐Yes	☐No	☑N/A	11. Note if sediment is visible in the dissolved container.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix SL (WT) OIL	☑Yes	☐No		12.
All containers needing preservation have been checked pH paper Lot # HC494032	☑Yes	☐No	☐N/A	13. ☐ HNO_3 ☐ H_2SO_4 ☐ NaOH ☐ HCl Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, HCl, NaOH>9 Sulfide, NAOH>12 Cyanide) Exceptions: VOA, Coliform, TOC/DOC, Oil and Grease, DRO/8015 (water). Per Method, VOA pH is checked after analysis	☑Yes	☐No	☐N/A	Initial when completed: / Lot # of added preservative: / Date/Time preservative added:
Samples checked for dechlorination: KI starch test strips Lot # Residual chlorine strips Lot #	☐Yes	☐No	☑N/A	14. Positive for Res. Chlorine? Y N
Headspace in VOA Vials (>6mm):	☐Yes	☑No	☐N/A	15.
Trip Blank Present:	☐Yes	☑No	☐N/A	16.
Trip Blank Custody Seals Present	☐Yes	☐No	☑N/A	
Pace Trip Blank Lot # (if applicable):				

Client Notification/ Resolution: Field Data Required? Y / N

Person Contacted: Date/Time:

Comments/ Resolution:

* PM (Project Manager) review is documented electronically in LIMS.

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins TestAmerica, Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

Laboratory Job ID: 320-61340-1
Laboratory Sample Delivery Group: 70132489
Client Project/Site: CELL 7 LEACHATE EXPANDED 5/28

For:
Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, New York 11747

Attn: Jennifer Aracri

Cesar C Cortes

Authorized for release by:
6/10/2020 8:34:25 AM

Cesar Cortes, Project Manager I
(916)374-4316
cesar.cortes@testamericainc.com

Table of Contents

Definitions/Glossary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Case Narrative

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Job ID: 320-61340-1

Laboratory: Eurofins TestAmerica, Sacramento

Narrative

Receipt

The samples were received on 6/2/2020 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.4º C and 2.8º C.

Method 537 (modified)

Results for sample CELL 7 PLCRS (320-61340-1) was reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-383169.

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

Detection Summary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Client Sample ID: CELL 7 PLCRS

Lab Sample ID: 320-61340-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	260	B	1.8	0.31	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	140		1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid	26		1.8	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	50		1.8	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	5.0		1.8	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	3.2		1.8	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	160		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	8.6	B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.26	J	1.8	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	16		1.8	0.48	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	2.2	B	1.8	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	370		8.9	2.6	ng/L	5		537 (modified)	Total/NA
6:2 FTS - DL	10	J	89	8.9	ng/L	5		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: CELL 7 PLCRS

Date Collected: 05/28/20 12:10
Date Received: 06/02/20 09:25

Lab Sample ID: 320-61340-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**260**	**B**	1.8	0.31	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluoropentanoic acid (PFPeA)	**140**		1.8	0.44	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluoroheptanoic acid	**26**		1.8	0.22	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorooctanoic acid (PFOA)	**50**		1.8	0.76	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorononanoic acid (PFNA)	**5.0**		1.8	0.24	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorodecanoic acid (PFDA)	**3.2**		1.8	0.28	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorobutanesulfonic acid (PFBS)	**160**		1.8	0.18	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorohexanesulfonic acid (PFHxS)	**8.6**	**B**	1.8	0.15	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.26**	**J**	1.8	0.17	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorooctanesulfonic acid (PFOS)	**16**		1.8	0.48	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.28	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorooctanesulfonamide (FOSA)	**2.2**	**B**	1.8	0.31	ng/L		06/03/20 18:29	06/04/20 13:11	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8	ng/L		06/03/20 18:29	06/04/20 13:11	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*31*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C5 PFPeA	*56*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C4 PFHpA	*93*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C4 PFOA	*94*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C5 PFNA	*115*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C2 PFDA	*108*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C2 PFUnA	*111*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C2 PFDoA	*87*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C2 PFTeDA	*51*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C3 PFBS	*93*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
18O2 PFHxS	*106*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C4 PFOS	*102*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C8 FOSA	*98*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
d3-NMeFOSAA	*135*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	**370**		8.9	2.6	ng/L		06/03/20 18:29	06/05/20 15:50	5
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		89	8.5	ng/L		06/03/20 18:29	06/05/20 15:50	5
6:2 FTS	**10**	**J**	89	8.9	ng/L		06/03/20 18:29	06/05/20 15:50	5
8:2 FTS	ND		89	8.9	ng/L		06/03/20 18:29	06/05/20 15:50	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*80*		*25 - 150*	*06/03/20 18:29*	*06/05/20 15:50*	*5*
d5-NEtFOSAA	*132*		*25 - 150*	*06/03/20 18:29*	*06/05/20 15:50*	*5*
M2-6:2 FTS	*146*		*25 - 150*	*06/03/20 18:29*	*06/05/20 15:50*	*5*
M2-8:2 FTS	*195*	**5*	*25 - 150*	*06/03/20 18:29*	*06/05/20 15:50*	*5*

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

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)	C4PFHA (25-150)	PFOA (25-150)	PFNA (25-150)	PFDA (25-150)	PFUnA (25-150)
320-61340-1	CELL 7 PLCRS	31	56		93	94	115	108	111
320-61340-1 - DL	CELL 7 PLCRS			80					
LCS 320-383169/2-A	Lab Control Sample	88	92	95	95	96	103	94	94
LCSD 320-383169/3-A	Lab Control Sample Dup	86	89	90	90	93	93	86	94
MB 320-383169/1-A	Method Blank	88	91	93	93	93	100	95	97

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (25-150)	PFTDA (25-150)	C3PFBS (25-150)	PFHxS (25-150)	PFOS (25-150)	PFOSA (25-150)	d3NMFOS (25-150)	d5NEFOS (25-150)
320-61340-1	CELL 7 PLCRS	87	51	93	106	102	98	135	
320-61340-1 - DL	CELL 7 PLCRS								132
LCS 320-383169/2-A	Lab Control Sample	90	101	96	96	93	87	89	93
LCSD 320-383169/3-A	Lab Control Sample Dup	91	85	90	91	92	81	81	80
MB 320-383169/1-A	Method Blank	79	84	92	94	91	86	80	85

		Percent Isotope Dilution Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	M262FTS (25-150)	M282FTS (25-150)
320-61340-1	CELL 7 PLCRS		
320-61340-1 - DL	CELL 7 PLCRS	146	195 *5
LCS 320-383169/2-A	Lab Control Sample	105	104
LCSD 320-383169/3-A	Lab Control Sample Dup	99	102
MB 320-383169/1-A	Method Blank	108	122

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-383169/1-A
Matrix: Water
Analysis Batch: 383436

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 383169

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	0.387	J	2.0	0.35	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluoroheptanoic acid	ND		2.0	0.25	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorohexanesulfonic acid (PFHxS)	0.274	J	2.0	0.17	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorooctanesulfonamide (FOSA)	0.514	J	2.0	0.35	ng/L		06/03/20 18:28	06/04/20 09:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		06/03/20 18:28	06/04/20 09:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		06/03/20 18:28	06/04/20 09:48	1
6:2 FTS	ND		20	2.0	ng/L		06/03/20 18:28	06/04/20 09:48	1
8:2 FTS	ND		20	2.0	ng/L		06/03/20 18:28	06/04/20 09:48	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*88*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C5 PFPeA	*91*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C2 PFHxA	*93*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C4 PFHpA	*93*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C4 PFOA	*93*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C5 PFNA	*100*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C2 PFDA	*95*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C2 PFUnA	*97*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C2 PFDoA	*79*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C2 PFTeDA	*84*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C3 PFBS	*92*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
18O2 PFHxS	*94*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C4 PFOS	*91*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C8 FOSA	*86*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
d3-NMeFOSAA	*80*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
d5-NEtFOSAA	*85*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
M2-6:2 FTS	*108*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
M2-8:2 FTS	*122*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*

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

Lab Sample ID: LCS 320-383169/2-A
Matrix: Water
Analysis Batch: 383436

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 383169

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorobutanoic acid	40.0	44.2		ng/L		111	76 - 136
Perfluoropentanoic acid (PFPeA)	40.0	40.8		ng/L		102	71 - 131
Perfluorohexanoic acid (PFHxA)	40.0	40.9		ng/L		102	73 - 133
Perfluoroheptanoic acid	40.0	41.8		ng/L		104	72 - 132
Perfluorooctanoic acid (PFOA)	40.0	39.2		ng/L		98	70 - 130
Perfluorononanoic acid (PFNA)	40.0	37.6		ng/L		94	75 - 135
Perfluorodecanoic acid (PFDA)	40.0	39.7		ng/L		99	76 - 136
Perfluoroundecanoic acid (PFUnA)	40.0	42.4		ng/L		106	68 - 128
Perfluorododecanoic acid (PFDoA)	40.0	41.2		ng/L		103	71 - 131
Perfluorotridecanoic acid (PFTriA)	40.0	45.2		ng/L		113	71 - 131
Perfluorotetradecanoic acid (PFTeA)	40.0	41.0		ng/L		103	70 - 130
Perfluorobutanesulfonic acid (PFBS)	35.4	36.7		ng/L		104	67 - 127
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.8		ng/L		90	59 - 119
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.0		ng/L		102	76 - 136
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5		ng/L		104	70 - 130
Perfluorodecanesulfonic acid (PFDS)	38.6	38.1		ng/L		99	71 - 131
Perfluorooctanesulfonamide (FOSA)	40.0	41.3		ng/L		103	73 - 133
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.6		ng/L		107	76 - 136
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	38.2		ng/L		95	76 - 136
6:2 FTS	37.9	39.0		ng/L		103	59 - 175
8:2 FTS	38.3	40.6		ng/L		106	75 - 135

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*88*		*25 - 150*
13C5 PFPeA	*92*		*25 - 150*
13C2 PFHxA	*95*		*25 - 150*
13C4 PFHpA	*95*		*25 - 150*
13C4 PFOA	*96*		*25 - 150*
13C5 PFNA	*103*		*25 - 150*
13C2 PFDA	*94*		*25 - 150*
13C2 PFUnA	*94*		*25 - 150*
13C2 PFDoA	*90*		*25 - 150*
13C2 PFTeDA	*101*		*25 - 150*
13C3 PFBS	*96*		*25 - 150*
18O2 PFHxS	*96*		*25 - 150*
13C4 PFOS	*93*		*25 - 150*
13C8 FOSA	*87*		*25 - 150*
d3-NMeFOSAA	*89*		*25 - 150*
d5-NEtFOSAA	*93*		*25 - 150*

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

Lab Sample ID: LCS 320-383169/2-A
Matrix: Water
Analysis Batch: 383436

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 383169

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-6:2 FTS	105		25 - 150
M2-8:2 FTS	104		25 - 150

Lab Sample ID: LCSD 320-383169/3-A
Matrix: Water
Analysis Batch: 383436

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 383169

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid			40.0	44.3		ng/L		111	76 - 136	0	30
Perfluoropentanoic acid (PFPeA)			40.0	40.4		ng/L		101	71 - 131	1	30
Perfluorohexanoic acid (PFHxA)			40.0	41.5		ng/L		104	73 - 133	1	30
Perfluoroheptanoic acid			40.0	42.7		ng/L		107	72 - 132	2	30
Perfluorooctanoic acid (PFOA)			40.0	38.8		ng/L		97	70 - 130	1	30
Perfluorononanoic acid (PFNA)			40.0	40.5		ng/L		101	75 - 135	7	30
Perfluorodecanoic acid (PFDA)			40.0	45.0		ng/L		113	76 - 136	12	30
Perfluoroundecanoic acid (PFUnA)			40.0	40.2		ng/L		101	68 - 128	5	30
Perfluorododecanoic acid (PFDoA)			40.0	37.6		ng/L		94	71 - 131	9	30
Perfluorotridecanoic acid (PFTriA)			40.0	37.8		ng/L		94	71 - 131	18	30
Perfluorotetradecanoic acid (PFTeA)			40.0	48.0		ng/L		120	70 - 130	16	30
Perfluorobutanesulfonic acid (PFBS)			35.4	38.7		ng/L		109	67 - 127	5	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.4		ng/L		92	59 - 119	2	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.0		ng/L		105	76 - 136	3	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.4		ng/L		103	70 - 130	0	30
Perfluorodecanesulfonic acid (PFDS)			38.6	37.0		ng/L		96	71 - 131	3	30
Perfluorooctanesulfonamide (FOSA)			40.0	42.4		ng/L		106	73 - 133	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	43.2		ng/L		108	76 - 136	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			40.0	39.6		ng/L		99	76 - 136	4	30
6:2 FTS			37.9	40.5		ng/L		107	59 - 175	4	30
8:2 FTS			38.3	42.2		ng/L		110	75 - 135	4	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFBA	86		25 - 150
13C5 PFPeA	89		25 - 150
13C2 PFHxA	90		25 - 150
13C4 PFHpA	90		25 - 150
13C4 PFOA	93		25 - 150
13C5 PFNA	93		25 - 150
13C2 PFDA	86		25 - 150
13C2 PFUnA	94		25 - 150
13C2 PFDoA	91		25 - 150

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

Lab Sample ID: LCSD 320-383169/3-A
Matrix: Water
Analysis Batch: 383436

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 383169

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C2 PFTeDA	85		25 - 150
13C3 PFBS	90		25 - 150
18O2 PFHxS	91		25 - 150
13C4 PFOS	92		25 - 150
13C8 FOSA	81		25 - 150
d3-NMeFOSAA	81		25 - 150
d5-NEtFOSAA	80		25 - 150
M2-6:2 FTS	99		25 - 150
M2-8:2 FTS	102		25 - 150

LCMS

Prep Batch: 383169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-61340-1 - DL	CELL 7 PLCRS	Total/NA	Water	3535	
320-61340-1	CELL 7 PLCRS	Total/NA	Water	3535	
MB 320-383169/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-383169/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-383169/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 383436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-383169/1-A	Method Blank	Total/NA	Water	537 (modified)	383169
LCS 320-383169/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	383169
LCSD 320-383169/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	383169

Analysis Batch: 383454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-61340-1	CELL 7 PLCRS	Total/NA	Water	537 (modified)	383169

Analysis Batch: 383943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-61340-1 - DL	CELL 7 PLCRS	Total/NA	Water	537 (modified)	383169

Lab Chronicle

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Client Sample ID: CELL 7 PLCRS

Date Collected: 05/28/20 12:10
Date Received: 06/02/20 09:25

Lab Sample ID: 320-61340-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		280.9 mL	10.00 mL	383169	06/03/20 18:29	VP	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5			383943	06/05/20 15:50	SK	TAL SAC
Total/NA	Prep	3535			280.9 mL	10.00 mL	383169	06/03/20 18:29	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1			383454	06/04/20 13:11	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	01-20-21
Arizona	State	AZ0708	08-11-20
Arkansas DEQ	State	19-042-0	06-17-20
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	07-01-21
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Illinois	NELAP	200060	03-17-21
Kansas	NELAP	E-10375	10-31-20
Louisiana	NELAP	01944	06-30-20
Maine	State	2018009	04-14-22
Michigan	State	9947	01-31-22
Nevada	State	CA000442020-1	07-31-20
New Hampshire	NELAP	2997	04-18-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-21
Oregon	NELAP	4040	01-29-21
Pennsylvania	NELAP	68-01272	03-31-21
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-21
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-20 *
West Virginia (DW)	State	9930C	12-31-20
Wyoming	State Program	8TMS-L	01-28-19 *

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

Method Summary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

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

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-61340-1	CELL 7 PLCRS	Water	05/28/20 12:10	06/02/20 09:25	

Chain of Custody

PASI New York Laboratory

Pace Analytical®
www.pacelabs.com

Workorder: 70132489 **Workorder Name:** CELL 7 LEACHATE EXPANDED 5/28 **Results Requested By:** 6/11/2020

Report / Invoice To	Subcontract To
Jennifer Aracri Pace Analytical Melville 575 Broad Hollow Road Melville, NY 11747 Phone (631)694-3040 Email: jennifer.aracri@pacelabs.com	TA Eurofins-Sacramento 880 Riverside Pkwy West Sacramento, CA 95605 P.O. 70132489JSA

State of Sample Origin: NY

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: PFAS by 537	LAB USE ONLY
1	CELL 7 PLCRS	5/28/2020 12:10	70132489001	Water		X	
2							
3							
4							
5							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible] MACELI	6/11/20 15:00	eta sac	06/02/20 925
2				
3				

Comments: Need a Category B Package and EQUIS EDDs

Cooler Temperature on Receipt 2.8 °C 2.4°C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

320-61340 Chain of Custody

Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 320-61340-1
SDG Number: 70132489

Login Number: 61340
List Number: 1
Creator: Guzman, Juan

List Source: Eurofins TestAmerica, Sacramento

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

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

www.pacelabs.com

Report Prepared for:

Jennifer Aracri
PASI Long Island
575 Broad Hollow Road
Melville NY 11747

REPORT OF LABORATORY ANALYSIS FOR TCDD/TCDF

Report Information:

Pace Project #: 10520076
Sample Receipt Date: 06/03/2020
Client Project #: 70132489
Client Sub PO #: N/A
State Cert #: 11647

Invoicing & Reporting Options:

The report provided has been invoiced as a Level 2 PCDD/PCDF Report. If an upgrade of this report package is requested, an additional charge may be applied.

Please review the attached invoice for accuracy and forward any questions to Joanne Richardson, your Pace Project Manager.

This report has been reviewed by:

Joanne Richardson

June 11, 2020

Joanne Richardson,
(612) 607-6453
(612) 607-6444 (fax)

Report Prepared Date:
June 11, 2020

Report of Laboratory Analysis

Pace Analytical Services, LLC.
1700 Elm Street
Minneapolis, MN 55414
Phone: 612.607.1700
Fax: 612.607.6444

DISCUSSION

This report presents the results from the analysis performed on one sample submitted by a representative of Pace Analytical Services, LLC. The sample was analyzed for the presence or absence of 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD) and 2,3,7,8-tetrachlorodibenzofuran (2,3,7,8-TCDF) using USEPA Method 1613B. The reporting limits were set to correspond to the lowest calibration points and a nominal 1-liter sample amount, and the sensitivity was verified by signal-to-noise measurements. The quantitation limits, adjusted for sample extraction amount, may be somewhat higher or lower than the reporting limits provided in this report. This report was revised as a level two summary report.

The isotopically-labeled TCDD/TCDF internal standards were recovered in the sample extract at 89-99%. All of the labeled standard recoveries obtained for this project were within the target ranges specified in Method 1613B. Also, since the quantification of the native congeners was based on isotope dilution, the data were automatically corrected for recovery and accurate values were obtained.

A laboratory method blank was prepared and analyzed with the sample batch as part of our routine quality control procedures. The results show the blank to be free of 2,3,7,8-TCDF and 2,3,7,8-TCDD at the reporting limits.

Laboratory spike samples were also prepared using clean reference matrix that had been fortified with native standard materials. The recoveries of the native compounds ranged from 103-114% with relative percent differences of 2.9-5.4%. These results were within the target ranges for the method. Matrix spikes were not prepared with the sample batch.

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Minnesota Laboratory Certifications

Authority	Certificate #	Authority	Certificate #
A2LA	2926.01	Minnesota - De	via MN-ELAP
Alabama	40770	Minnesota - Pet	1240
Alaska - DW	MN00064	Mississippi	MN00064
Alaska - UST	17-009	Missouri - DW	10100
Arizona	AZ0014	Montana	CERT0092
Arkansas - DW	MN00064	Nebraska	NE-OS-18-06
Arkansas - WW	19-039-0 (88-06	Nevada	MN000642020-
CNMI Saipan	MP0003	New Hampshire	208120-B (2081
California	2929	New Jersey (NE	NLC 190003 (M
Colorado	MN00064	New York	11647
Connecticut	PH-0256	North Carolina -	27700
EPA Region 8+	via MN 027-053	North Carolina -	530
Florida (NELAP	E87605	North Dakota	R-036
Georgia	959	Ohio - DW	41244
Guam	20-001R	Ohio - VAP	CL101
Hawaii	MN00064	Oklahoma	2019-041 (9507
Idaho	MN00064	Oregon - Primar	MN300001-012
Illinois	004575 (20001	Oregon - Secon	MN200001-013
Indiana	C-MN-01	Pennsylvania	018 (68-00563)
Iowa	368	Puerto Rico	MN00064
Kansas	E-10167	South Carolina	74003001 (740
Kentucky - DW	90062	Tennessee	TN02818
Kentucky - WW	90062	Texas	T104704192
Louisiana - DE	03086 (84596)	Utah (NELAP)	MN000642019-
Louisiana - DH	LA006	Vermont	VT-027053137
Louisiana - DW	MN00064	Virginia	10570 (460163)
Maine	2019018 (238)(	Washington	C486-20 (C486)
Maryland	322	West Virginia -	382
Massachusetts	M-MN064	West Virginia -	9952C
Michigan	9909	Wisconsin	999407970
Minnesota	1857409	Wyoming - UST	2926.01

REPORT OF LABORATORY ANALYSIS

Appendix A

Sample Management

Chain of Custody

☐ Samples were sent directly to the Subcontracting Laboratory.

State Of Origin: NY
Cert. Needed: [X] Yes ☐ No
Owner Received Date: 5/28/2020 **Results Requested By:** 6/11/2020

Pace Analytical® www.pacelabs.com

Workorder: 70132489 **Workorder Name:** CELL 7 LEACHATE EXPANDED 5/28

Report To	Subcontract To
Jennifer Aracri Pace Analytical Melville 575 Broad Hollow Road Melville, NY 11747 Phone (631)694-3040	Pace Analytical Minnesota 1700 Elm Street Suite 200 Minneapolis, MN 55414 Phone (612)607-1700

WO# : 10520076
10520076

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved	Requested Analysis: Dioxin/Furan TCDD/TCDF Scan only	LAB USE ONLY
1	CELL 7 PLCRS	PS	5/28/2020 12:10	70132489001	Water	1	X	001
2								
3								
4								
5								

Transfers	Released By	Date/Time	Received By	Date/Time
1	Robert PACE	6/2/2020 8:40	RHL / Pace	6/3/20 8:35
2				
3				

Comments: Need a Category B Package and EQUIS EDDs

Cooler Temperature on Receipt 1.1 °C | **Custody Seal** Y or (N) | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) - MN**	Document Revised: 27Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0150 Rev.00**	Pace Analytical Services - **Minneapolis**

Sample Condition Upon Receipt

Client Name: Pace - Melville, NY

Project #: **WO#: 10520076**

PM: JMR Due Date: 06/17/20

CLIENT: PASI-LINY

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Pace ☐ SpeeDee ☐ Commercial **See Exceptions** ☐

Tracking Number: 1872 5875 3476

Custody Seal on Cooler/Box Present? ☐ Yes ☒ No **Seals Intact?** ☐ Yes ☒ No **Biological Tissue Frozen?** ☐ Yes ☐ No ☒ N/A

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other:_____ **Temp Blank?** ☐ Yes ☒ No

Thermometer: ☐ T1(0461) ☐ T2(1336) ☐ T3(0459) ☒ T4(0254) ☐ T5(0489) **Type of Ice:** ☒ Wet ☐ Blue ☐ None ☐ Dry ☐ Melted

Did Samples Originate in West Virginia? ☐ Yes ☒ No **Were All Container Temps Taken?** ☐ Yes ☐ No ☒ N/A

Temp should be above freezing to 6°C **Cooler Temp Read w/temp blank:**_____ °C **Average Corrected Temp (no temp blank only):** ☒ See Exceptions

Correction Factor: +0.1 **Cooler Temp Corrected w/temp blank:**_____ °C 1.1 °C ☐ 1 Container

USDA Regulated Soil: (☒ N/A, water sample/Other:_____) **Date/Initials of Person Examining Contents:** RHL 6/3/2020

Did samples originate in a quarantine zone within the United States: AL, AR, CA, FL, GA, ID, LA. MS, NC, NM, NY, OK, OR, SC, TN, TX or VA (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

If Yes to either question, fill out a Regulated Soil Checklist (F-MN-Q-338) and include with SCUR/COC paperwork.

				COMMENTS:
Chain of Custody Present and Filled Out?	☒ Yes	☐ No		1.
Chain of Custody Relinquished?	☒ Yes	☐ No		2.
Sampler Name and/or Signature on COC?	☐ Yes	☐ No	☒ N/A	3.
Samples Arrived within Hold Time?	☒ Yes	☐ No		4.
Short Hold Time Analysis (<72 hr)?	☐ Yes	☒ No		5. ☐ Fecal Coliform ☐ HPC ☐ Total Coliform/E coli ☐ BOD/cBOD ☐ Hex Chrome ☐ Turbidity ☐ Nitrate ☐ Nitrite ☐ Orthophos ☐ Other_____
Rush Turn Around Time Requested?	☐ Yes	☒ No		6.
Sufficient Volume?	☒ Yes	☐ No		7.
Correct Containers Used? -Pace Containers Used?	☒ Yes ☒ Yes	☐ No ☐ No		8.
Containers Intact?	☒ Yes	☐ No		9.
Field Filtered Volume Received for Dissolved Tests?	☐ Yes	☐ No	☒ N/A	10. Is sediment visible in the dissolved container? ☐ Yes ☐ No
Is sufficient information available to reconcile the samples to the COC? Matrix: ☒ Water ☐ Soil ☐ Oil ☐ Other_____	☒ Yes	☐ No		11. **If no, write ID/ Date/Time on Container Below:** **See Exception** ☐ 1 extra bottle
All containers needing acid/base preservation have been checked?	☐ Yes	☐ No	☒ N/A	12. Sample #
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO_3, H_2SO_4, <2pH, NaOH >9 Sulfide, NaOH>12 Cyanide)	☐ Yes	☐ No	☒ N/A	☐ NaOH ☐ HNO_3 ☐ H_2SO_4 ☐ Zinc Acetate
Exceptions: VOA, Coliform, TOC/DOC Oil and Grease, DRO/8015 (water) and Dioxin/PFAS	☒ Yes	☐ No	☐ N/A	Positive for Res. Chlorine? ☐ Yes ☐ No **pH Paper Lot#** **See Exception** ☐
				Res. Chlorine | 0-6 Roll | 0-6 Strip | 0-14 Strip
Extra labels present on soil VOA or WIDRO containers?	☐ Yes	☐ No	☒ N/A	13. **See Exception** ☐
Headspace in VOA Vials (greater than 6mm)?	☐ Yes	☐ No	☒ N/A	
Trip Blank Present?	☐ Yes	☐ No	☒ N/A	14.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☒ N/A	Pace Trip Blank Lot # (if purchased):_____

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted:_____ Date/Time:_____

Comments/Resolution:_____

Project Manager Review: Joanne Richardson **Date:** 6-3-20

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e out of hold, incorrect preservative, out of temp, incorrect containers).

Labeled by: RHL

Pace Analytical®	Document Name: **Sample Condition Upon Receipt (SCUR) Exception Form**	Document Revised: 26Mar2020 **Page 1 of 1**
	Document No.: **ENV-FRM-MIN4-0142 Rev.00**	Pace Analytical Services - **Minneapolis**

SCUR Exceptions:

Workorder #: 10520076

Out of Temp Sample IDs	Container Type	# of Containers

PM Notified? ☐Yes ☐No

If yes, indicate who was contacted/date/time.
If no, indicate reason why.

Multiple Cooler Project? ☐Yes ☐No
If you answered yes, fill out information to the left.

No Temp Blank

Read Temp	Corrected Temp	Average Temp
0.5	0.6	1.1
1.5	1.6	

Tracking Number/Temperature

Other Issues

Issue Type: Sample ID	Container Type	# of Containers

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preserv.	pH Upon Receipt	Date Adjusted	Time Adjusted	Amount Added (mL)	Lot # Added	pH After	In Compliance after addition?	Initials
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	
								☐Yes ☐No	

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Reporting Flags

A = Reporting Limit based on signal to noise

B = Less than 10x higher than method blank level

C = Result obtained from confirmation analysis

D = Result obtained from analysis of diluted sample

E = Exceeds calibration range

I = Interferencepresent

J = Estimated value

L = Suppressive interference, analyte may be biased low

Nn = Value obtained from additional analysis

P = PCDEInterference

R = Recovery outside target range

S = Peak saturated

U = Analyte not detected

V = Result verified by confirmation analysis

X = %D Exceeds limits

Y = Calculated using average of daily RFs

* = SeeDiscussion

REPORT OF LABORATORY ANALYSIS

Appendix B

Sample Analysis Summary

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Sample Analysis Results

Client - PASI Long Island

Client's Sample ID	CELL 7 PLCRS		
Lab Sample ID	70132489001		
Filename	Y200609A_17		
Injected By	SM		
Total Amount Extracted	1100 mL	Matrix	Water
% Moisture	NA	Dilution	NA
Dry Weight Extracted	NA	Collected	05/28/2020 12:10
ICAL ID	Y200608	Received	06/03/2020 08:35
CCal Filename(s)	Y200609A_01	Extracted	06/05/2020 12:00
Method Blank ID	BLANK-79913	Analyzed	06/10/2020 01:55

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**RL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	10	2,3,7,8-TCDF-13C	2.00	99
2,3,7,8-TCDD	ND	-----	10	2,3,7,8-TCDD-13C	2.00	89
				Recovery Standard 1,2,3,4-TCDD-13C	2.00	NA
				Cleanup Standard 2,3,7,8-TCDD-37Cl4	0.20	102

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

ND = Not Detected
NA = Not Applicable
NC = Not Calculated

R = Recovery outside target range
E = Exceeds calibration range

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Blank Analysis Results

Lab Sample Name	DFBLKBC		
Lab Sample ID	BLANK-79913	Matrix	Water
Filename	Y200609A_13	Dilution	NA
Total Amount Extracted	1040 mL	Extracted	06/05/2020 12:00
ICAL ID	Y200608	Analyzed	06/09/2020 23:00
CCal Filename(s)	Y200609A_01	Injected By	SM

Native Isomers	**Conc** pg/L	**EMPC** pg/L	**RL** pg/L	**Internal Standards**	**ng's Added**	**Percent Recovery**
2,3,7,8-TCDF	ND	-----	10	2,3,7,8-TCDF-13C	2.00	94
2,3,7,8-TCDD	ND	-----	10	2,3,7,8-TCDD-13C	2.00	85
				Recovery Standard 1,2,3,4-TCDD-13C	2.00	NA
				Cleanup Standard 2,3,7,8-TCDD-37Cl4	0.20	95

Conc = Concentration (Totals include 2,3,7,8-substituted isomers).
EMPC = Estimated Maximum Possible Concentration
RL = Reporting Limit

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCS-79914		
Filename	Y200609A_04	Matrix	Water
Total Amount Extracted	1040 mL	Dilution	NA
ICAL ID	Y200608	Extracted	06/05/2020 12:00
CCal Filename	Y200609A_01	Analyzed	06/09/2020 16:25
Method Blank ID	BLANK-79913	Injected By	SM

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDF	10	11	8.0	14.7	106
2,3,7,8-TCDD	10	11	7.3	14.6	114
2,3,7,8-TCDD-37Cl4	10	9.4	3.7	15.8	94
2,3,7,8-TCDF-13C	100	93	26.0	126.0	93
2,3,7,8-TCDD-13C	100	86	25.0	141.0	86

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B Laboratory Control Spike Results

Lab Sample ID	LCSD-79915		
Filename	Y200609A_05	Matrix	Water
Total Amount Extracted	1040 mL	Dilution	NA
ICAL ID	Y200608	Extracted	06/05/2020 12:00
CCal Filename	Y200609A_01	Analyzed	06/09/2020 17:09
Method Blank ID	BLANK-79913	Injected By	SM

Compound	Cs	Cr	Lower Limit	Upper Limit	% Rec.
2,3,7,8-TCDF	10	10	8.0	14.7	103
2,3,7,8-TCDD	10	11	7.3	14.6	108
2,3,7,8-TCDD-37Cl4	10	10	3.7	15.8	103
2,3,7,8-TCDF-13C	100	100	26.0	126.0	102
2,3,7,8-TCDD-13C	100	94	25.0	141.0	94

Cs = Concentration Spiked (ng/mL)
Cr = Concentration Recovered (ng/mL)
Rec. = Recovery (Expressed as Percent)
Control Limit Reference: Method 1613, Table 6, 10/94 Revision
R = Recovery outside of control limits
Nn = Value obtained from additional analysis
* = See Discussion

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1700 Elm Street - Suite 200
Minneapolis, MN 55414

Tel: 612-607-1700
Fax: 612- 607-6444

Method 1613B

Spike Recovery Relative Percent Difference (RPD) Results

Client	PASI Long Island		
Spike 1 ID	LCS-79914	Spike 2 ID	LCSD-79915
Spike 1 Filename	Y200609A_04	Spike 2 Filename	Y200609A_05

Compound	Spike 1 %REC	Spike 2 %REC	%RPD
2,3,7,8-TCDF	106	103	2.9
2,3,7,8-TCDD	114	108	5.4

%REC = Percent Recovered
RPD = The difference between the two values divided by the mean value

REPORT OF LABORATORY ANALYSIS

eurofins | Environment Testing America

ANALYTICAL REPORT

Job Number: 320-61340-1

SDG Number: 70132489

Job Description: CELL 7 LEACHATE EXPANDED 5/28

For:
Pace Analytical Services, LLC
575 Broad Hollow Road
Melville, NY 11747

Attention: Jennifer Aracri

Approved for release.
Cesar C Cortes
Project Manager I
6/10/2020 8:38 AM

Cesar C Cortes, Project Manager I
880 Riverside Parkway, West Sacramento, CA, 95605
(916)374-4316
cesar.cortes@testamericainc.com
06/10/2020

Table of Contents

Table of Contents

Receipt
The samples were received on 6/2/2020 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.4º C and 2.8º C.

Method 537 (modified)
Results for sample CELL 7 PLCRS (320-61340-1) was reported from the analysis of a diluted extract due to high concentration of the target analyte in the analysis of the undiluted extract. The dilution factor was applied to the labeled internal standard area counts and these area counts were within acceptance limits.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 320-383169.

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

Sample Summary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
320-61340-1	CELL 7 PLCRS	Water	05/28/20 12:10	06/02/20 09:25	

Detection Summary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Client Sample ID: CELL 7 PLCRS

Lab Sample ID: 320-61340-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid	260	B	1.8	0.31	ng/L	1		537 (modified)	Total/NA
Perfluoropentanoic acid (PFPeA)	140		1.8	0.44	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanoic acid	26		1.8	0.22	ng/L	1		537 (modified)	Total/NA
Perfluorooctanoic acid (PFOA)	50		1.8	0.76	ng/L	1		537 (modified)	Total/NA
Perfluorononanoic acid (PFNA)	5.0		1.8	0.24	ng/L	1		537 (modified)	Total/NA
Perfluorodecanoic acid (PFDA)	3.2		1.8	0.28	ng/L	1		537 (modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	160		1.8	0.18	ng/L	1		537 (modified)	Total/NA
Perfluorohexanesulfonic acid (PFHxS)	8.6	B	1.8	0.15	ng/L	1		537 (modified)	Total/NA
Perfluoroheptanesulfonic Acid (PFHpS)	0.26	J	1.8	0.17	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	16		1.8	0.48	ng/L	1		537 (modified)	Total/NA
Perfluorooctanesulfonamide (FOSA)	2.2	B	1.8	0.31	ng/L	1		537 (modified)	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	370		8.9	2.6	ng/L	5		537 (modified)	Total/NA
6:2 FTS - DL	10	J	89	8.9	ng/L	5		537 (modified)	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

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

Protocol References:

EPA = US Environmental Protection Agency

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

Laboratory References:

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

Client Sample ID: CELL 7 PLCRS

Date Collected: 05/28/20 12:10
Date Received: 06/02/20 09:25

Lab Sample ID: 320-61340-1

Matrix: Water

Method: 537 (modified) - Fluorinated Alkyl Substances

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	**260**	**B**	1.8	0.31	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluoropentanoic acid (PFPeA)	**140**		1.8	0.44	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluoroheptanoic acid	**26**		1.8	0.22	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorooctanoic acid (PFOA)	**50**		1.8	0.76	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorononanoic acid (PFNA)	**5.0**		1.8	0.24	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorodecanoic acid (PFDA)	**3.2**		1.8	0.28	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorobutanesulfonic acid (PFBS)	**160**		1.8	0.18	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorohexanesulfonic acid (PFHxS)	**8.6**	**B**	1.8	0.15	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluoroheptanesulfonic Acid (PFHpS)	**0.26**	**J**	1.8	0.17	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorooctanesulfonic acid (PFOS)	**16**		1.8	0.48	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.28	ng/L		06/03/20 18:29	06/04/20 13:11	1
Perfluorooctanesulfonamide (FOSA)	**2.2**	**B**	1.8	0.31	ng/L		06/03/20 18:29	06/04/20 13:11	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8	ng/L		06/03/20 18:29	06/04/20 13:11	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*31*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C5 PFPeA	*56*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C4 PFHpA	*93*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C4 PFOA	*94*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C5 PFNA	*115*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C2 PFDA	*108*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C2 PFUnA	*111*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C2 PFDoA	*87*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C2 PFTeDA	*51*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C3 PFBS	*93*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
18O2 PFHxS	*106*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C4 PFOS	*102*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
13C8 FOSA	*98*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*
d3-NMeFOSAA	*135*		*25 - 150*	*06/03/20 18:29*	*06/04/20 13:11*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorohexanoic acid (PFHxA)	**370**		8.9	2.6	ng/L		06/03/20 18:29	06/05/20 15:50	5
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		89	8.5	ng/L		06/03/20 18:29	06/05/20 15:50	5
6:2 FTS	**10**	**J**	89	8.9	ng/L		06/03/20 18:29	06/05/20 15:50	5
8:2 FTS	ND		89	8.9	ng/L		06/03/20 18:29	06/05/20 15:50	5

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C2 PFHxA	*80*		*25 - 150*	*06/03/20 18:29*	*06/05/20 15:50*	*5*
d5-NEtFOSAA	*132*		*25 - 150*	*06/03/20 18:29*	*06/05/20 15:50*	*5*
M2-6:2 FTS	*146*		*25 - 150*	*06/03/20 18:29*	*06/05/20 15:50*	*5*
M2-8:2 FTS	*195*	**5*	*25 - 150*	*06/03/20 18:29*	*06/05/20 15:50*	*5*

Isotope Dilution Summary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Method: 537 (modified) - Fluorinated Alkyl Substances

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

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFBA	PFPeA	PFHxA	C4PFHA	PFOA	PFNA	PFDA	PFUnA
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-61340-1	CELL 7 PLCRS	31	56		93	94	115	108	111
320-61340-1 - DL	CELL 7 PLCRS			80					
LCS 320-383169/2-A	Lab Control Sample	88	92	95	95	96	103	94	94
LCSD 320-383169/3-A	Lab Control Sample Dup	86	89	90	90	93	93	86	94
MB 320-383169/1-A	Method Blank	88	91	93	93	93	100	95	97

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		PFDoA	PFTDA	C3PFBS	PFHxS	PFOS	PFOSA	d3NMFOS	d5NEFOS
Lab Sample ID	Client Sample ID	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)	(25-150)
320-61340-1	CELL 7 PLCRS	87	51	93	106	102	98	135	
320-61340-1 - DL	CELL 7 PLCRS								132
LCS 320-383169/2-A	Lab Control Sample	90	101	96	96	93	87	89	93
LCSD 320-383169/3-A	Lab Control Sample Dup	91	85	90	91	92	81	81	80
MB 320-383169/1-A	Method Blank	79	84	92	94	91	86	80	85

		Percent Isotope Dilution Recovery (Acceptance Limits)							
		M262FTS	M282FTS						
Lab Sample ID	Client Sample ID	(25-150)	(25-150)						
320-61340-1	CELL 7 PLCRS								
320-61340-1 - DL	CELL 7 PLCRS	146	195 *5						
LCS 320-383169/2-A	Lab Control Sample	105	104						
LCSD 320-383169/3-A	Lab Control Sample Dup	99	102						
MB 320-383169/1-A	Method Blank	108	122						

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
PFHxA = 13C2 PFHxA
C4PFHA = 13C4 PFHpA
PFOA = 13C4 PFOA
PFNA = 13C5 PFNA
PFDA = 13C2 PFDA
PFUnA = 13C2 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
PFHxS = 18O2 PFHxS
PFOS = 13C4 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS

Method: 537 (modified) - Fluorinated Alkyl Substances

Lab Sample ID: MB 320-383169/1-A
Matrix: Water
Analysis Batch: 383436

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 383169

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid	0.387	J	2.0	0.35	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluoroheptanoic acid	ND		2.0	0.25	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorooctanoic acid (PFOA)	ND		2.0	0.85	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorononanoic acid (PFNA)	ND		2.0	0.27	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorodecanoic acid (PFDA)	ND		2.0	0.31	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorohexanesulfonic acid (PFHxS)	0.274	J	2.0	0.17	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32	ng/L		06/03/20 18:28	06/04/20 09:48	1
Perfluorooctanesulfonamide (FOSA)	0.514	J	2.0	0.35	ng/L		06/03/20 18:28	06/04/20 09:48	1
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1	ng/L		06/03/20 18:28	06/04/20 09:48	1
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9	ng/L		06/03/20 18:28	06/04/20 09:48	1
6:2 FTS	ND		20	2.0	ng/L		06/03/20 18:28	06/04/20 09:48	1
8:2 FTS	ND		20	2.0	ng/L		06/03/20 18:28	06/04/20 09:48	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C4 PFBA	*88*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C5 PFPeA	*91*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C2 PFHxA	*93*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C4 PFHpA	*93*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C4 PFOA	*93*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C5 PFNA	*100*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C2 PFDA	*95*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C2 PFUnA	*97*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C2 PFDoA	*79*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C2 PFTeDA	*84*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C3 PFBS	*92*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
18O2 PFHxS	*94*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C4 PFOS	*91*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
13C8 FOSA	*86*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
d3-NMeFOSAA	*80*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
d5-NEtFOSAA	*85*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
M2-6:2 FTS	*108*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*
M2-8:2 FTS	*122*		*25 - 150*	*06/03/20 18:28*	*06/04/20 09:48*	*1*

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

Lab Sample ID: LCS 320-383169/2-A
Matrix: Water
Analysis Batch: 383436

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 383169

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perfluorobutanoic acid			40.0	44.2		ng/L		111	76 - 136		
Perfluoropentanoic acid (PFPeA)			40.0	40.8		ng/L		102	71 - 131		
Perfluorohexanoic acid (PFHxA)			40.0	40.9		ng/L		102	73 - 133		
Perfluoroheptanoic acid			40.0	41.8		ng/L		104	72 - 132		
Perfluorooctanoic acid (PFOA)			40.0	39.2		ng/L		98	70 - 130		
Perfluorononanoic acid (PFNA)			40.0	37.6		ng/L		94	75 - 135		
Perfluorodecanoic acid (PFDA)			40.0	39.7		ng/L		99	76 - 136		
Perfluoroundecanoic acid (PFUnA)			40.0	42.4		ng/L		106	68 - 128		
Perfluorododecanoic acid (PFDoA)			40.0	41.2		ng/L		103	71 - 131		
Perfluorotridecanoic acid (PFTriA)			40.0	45.2		ng/L		113	71 - 131		
Perfluorotetradecanoic acid (PFTeA)			40.0	41.0		ng/L		103	70 - 130		
Perfluorobutanesulfonic acid (PFBS)			35.4	36.7		ng/L		104	67 - 127		
Perfluorohexanesulfonic acid (PFHxS)			36.4	32.8		ng/L		90	59 - 119		
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	39.0		ng/L		102	76 - 136		
Perfluorooctanesulfonic acid (PFOS)			37.1	38.5		ng/L		104	70 - 130		
Perfluorodecanesulfonic acid (PFDS)			38.6	38.1		ng/L		99	71 - 131		
Perfluorooctanesulfonamide (FOSA)			40.0	41.3		ng/L		103	73 - 133		
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	42.6		ng/L		107	76 - 136		
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			40.0	38.2		ng/L		95	76 - 136		
6:2 FTS			37.9	39.0		ng/L		103	59 - 175		
8:2 FTS			38.3	40.6		ng/L		106	75 - 135		

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C4 PFBA	*88*		*25 - 150*
13C5 PFPeA	*92*		*25 - 150*
13C2 PFHxA	*95*		*25 - 150*
13C4 PFHpA	*95*		*25 - 150*
13C4 PFOA	*96*		*25 - 150*
13C5 PFNA	*103*		*25 - 150*
13C2 PFDA	*94*		*25 - 150*
13C2 PFUnA	*94*		*25 - 150*
13C2 PFDoA	*90*		*25 - 150*
13C2 PFTeDA	*101*		*25 - 150*
13C3 PFBS	*96*		*25 - 150*
18O2 PFHxS	*96*		*25 - 150*
13C4 PFOS	*93*		*25 - 150*
13C8 FOSA	*87*		*25 - 150*
d3-NMeFOSAA	*89*		*25 - 150*
d5-NEtFOSAA	*93*		*25 - 150*

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

Lab Sample ID: LCS 320-383169/2-A
Matrix: Water
Analysis Batch: 383436

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 383169

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
M2-6:2 FTS	105		25 - 150
M2-8:2 FTS	104		25 - 150

Lab Sample ID: LCSD 320-383169/3-A
Matrix: Water
Analysis Batch: 383436

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 383169

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanoic acid			40.0	44.3		ng/L		111	76 - 136	0	30
Perfluoropentanoic acid (PFPeA)			40.0	40.4		ng/L		101	71 - 131	1	30
Perfluorohexanoic acid (PFHxA)			40.0	41.5		ng/L		104	73 - 133	1	30
Perfluoroheptanoic acid			40.0	42.7		ng/L		107	72 - 132	2	30
Perfluorooctanoic acid (PFOA)			40.0	38.8		ng/L		97	70 - 130	1	30
Perfluorononanoic acid (PFNA)			40.0	40.5		ng/L		101	75 - 135	7	30
Perfluorodecanoic acid (PFDA)			40.0	45.0		ng/L		113	76 - 136	12	30
Perfluoroundecanoic acid (PFUnA)			40.0	40.2		ng/L		101	68 - 128	5	30
Perfluorododecanoic acid (PFDoA)			40.0	37.6		ng/L		94	71 - 131	9	30
Perfluorotridecanoic acid (PFTriA)			40.0	37.8		ng/L		94	71 - 131	18	30
Perfluorotetradecanoic acid (PFTeA)			40.0	48.0		ng/L		120	70 - 130	16	30
Perfluorobutanesulfonic acid (PFBS)			35.4	38.7		ng/L		109	67 - 127	5	30
Perfluorohexanesulfonic acid (PFHxS)			36.4	33.4		ng/L		92	59 - 119	2	30
Perfluoroheptanesulfonic Acid (PFHpS)			38.1	40.0		ng/L		105	76 - 136	3	30
Perfluorooctanesulfonic acid (PFOS)			37.1	38.4		ng/L		103	70 - 130	0	30
Perfluorodecanesulfonic acid (PFDS)			38.6	37.0		ng/L		96	71 - 131	3	30
Perfluorooctanesulfonamide (FOSA)			40.0	42.4		ng/L		106	73 - 133	3	30
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)			40.0	43.2		ng/L		108	76 - 136	1	30
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)			40.0	39.6		ng/L		99	76 - 136	4	30
6:2 FTS			37.9	40.5		ng/L		107	59 - 175	4	30
8:2 FTS			38.3	42.2		ng/L		110	75 - 135	4	30

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C4 PFBA	86		25 - 150
13C5 PFPeA	89		25 - 150
13C2 PFHxA	90		25 - 150
13C4 PFHpA	90		25 - 150
13C4 PFOA	93		25 - 150
13C5 PFNA	93		25 - 150
13C2 PFDA	86		25 - 150
13C2 PFUnA	94		25 - 150
13C2 PFDoA	91		25 - 150

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

Lab Sample ID: LCSD 320-383169/3-A
Matrix: Water
Analysis Batch: 383436

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 383169

Isotope Dilution	LCSD %Recovery	LCSD Qualifier	Limits
13C2 PFTeDA	85		25 - 150
13C3 PFBS	90		25 - 150
18O2 PFHxS	91		25 - 150
13C4 PFOS	92		25 - 150
13C8 FOSA	81		25 - 150
d3-NMeFOSAA	81		25 - 150
d5-NEtFOSAA	80		25 - 150
M2-6:2 FTS	99		25 - 150
M2-8:2 FTS	102		25 - 150

Qualifiers

LCMS

Qualifier	Qualifier Description
*5	Isotope dilution analyte is outside acceptance limits.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

LCMS

Prep Batch: 383169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-61340-1 - DL	CELL 7 PLCRS	Total/NA	Water	3535	
320-61340-1	CELL 7 PLCRS	Total/NA	Water	3535	
MB 320-383169/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-383169/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-383169/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

Analysis Batch: 383436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 320-383169/1-A	Method Blank	Total/NA	Water	537 (modified)	383169
LCS 320-383169/2-A	Lab Control Sample	Total/NA	Water	537 (modified)	383169
LCSD 320-383169/3-A	Lab Control Sample Dup	Total/NA	Water	537 (modified)	383169

Analysis Batch: 383454

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-61340-1	CELL 7 PLCRS	Total/NA	Water	537 (modified)	383169

Analysis Batch: 383943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-61340-1 - DL	CELL 7 PLCRS	Total/NA	Water	537 (modified)	383169

Lab Chronicle

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Client Sample ID: CELL 7 PLCRS

Date Collected: 05/28/20 12:10
Date Received: 06/02/20 09:25

Lab Sample ID: 320-61340-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535	DL		383169	06/03/20 18:29	VP	TAL SAC
Total/NA	Analysis	537 (modified)	DL	5	383943	06/05/20 15:50	SK	TAL SAC
Total/NA	Prep	3535			383169	06/03/20 18:29	VP	TAL SAC
Total/NA	Analysis	537 (modified)		1	383454	06/04/20 13:11	D1R	TAL SAC

Laboratory References:

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

Accreditation/Certification Summary

Client: Pace Analytical Services, LLC
Project/Site: CELL 7 LEACHATE EXPANDED 5/28

Job ID: 320-61340-1
SDG: 70132489

Laboratory: Eurofins TestAmerica, Sacramento

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

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	17-020	01-20-21
ANAB	Dept. of Defense ELAP	L2468	01-20-21
ANAB	Dept. of Energy	L2468.01	01-20-21
ANAB	ISO/IEC 17025	L2468	01-20-21
Arizona	State	AZ0708	08-11-20
Arkansas DEQ	State	19-042-0	06-17-20
California	State	2897	01-31-22
Colorado	State	CA0004	08-31-20
Connecticut	State	PH-0691	06-30-21
Florida	NELAP	E87570	07-01-21
Georgia	State	4040	01-30-21
Hawaii	State	<cert No.>	01-29-21
Illinois	NELAP	200060	03-17-21
Kansas	NELAP	E-10375	10-31-20
Louisiana	NELAP	01944	06-30-20
Maine	State	2018009	04-14-22
Michigan	State	9947	01-31-22
Nevada	State	CA000442020-1	07-31-20
New Hampshire	NELAP	2997	04-18-21
New Jersey	NELAP	CA005	06-30-21
New York	NELAP	11666	04-01-21
Oregon	NELAP	4040	01-29-21
Pennsylvania	NELAP	68-01272	03-31-21
Texas	NELAP	T104704399-19-13	06-01-21
US Fish & Wildlife	US Federal Programs	58448	07-31-20
USDA	US Federal Programs	P330-18-00239	07-31-21
Utah	NELAP	CA000442019-01	02-28-21
Vermont	State	VT-4040	04-16-21
Virginia	NELAP	460278	03-14-21
Washington	State	C581	05-05-20 *
West Virginia (DW)	State	9930C	12-31-20
Wyoming	State Program	8TMS-L	01-28-19 *

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

Method PFC IDA

Fluorinated Hydrocarbons by Method PFAS IDA

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	C3PFBS #	C4PFHA #	PFHxS #	PFOA #	PFOS #	PFNA #
CELL 7 PLCRS	320-61340-1	31	56	93	93	106	94	102	115

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
C3PFBS = 13C3 PFBS	25-150
C4PFHA = 13C4 PFHpA	25-150
PFHxS = 18O2 PFHxS	25-150
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150
PFNA = 13C5 PFNA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOSA #	PFDA #	d3NMFOS #	PFUnA #	PFDoA #	PFTDA #
CELL 7 PLCRS	320-61340-1	98	108	135	111	87	51

	QC LIMITS
PFOSA = 13C8 FOSA	25-150
PFDA = 13C2 PFDA	25-150
d3NMFOS = d3-NMeFOSAA	25-150
PFUnA = 13C2 PFUnA	25-150
PFDoA = 13C2 PFDoA	25-150
PFTDA = 13C2 PFTeDA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFBA #	PFPeA #	C3PFBS #	PFHxA #	C4PFHA #	PFHxS #	M262FTS #	PFOA #
	MB 320-383169/1-A	88	91	92	93	93	94	108	93
	LCS 320-383169/2-A	88	92	96	95	95	96	105	96
	LCSD 320-383169/3-A	86	89	90	90	90	91	99	93

	QC LIMITS
PFBA = 13C4 PFBA	25-150
PFPeA = 13C5 PFPeA	25-150
C3PFBS = 13C3 PFBS	25-150
PFHxA = 13C2 PFHxA	25-150
PFHxS = 18O2 PFHxS	25-150
C4PFHA = 13C4 PFHpA	25-150
M262FTS = M2-6:2 FTS	25-150
PFOA = 13C4 PFOA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFOS #	PFNA #	PFOSA #	M282FTS #	PFDA #	d3NMFOS #	d5NEFOS #	PFUnA #
	MB 320-383169/1-A	91	100	86	122	95	80	85	97
	LCS 320-383169/2-A	93	103	87	104	94	89	93	94
	LCSD 320-383169/3-A	92	93	81	102	86	81	80	94

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

Column to be used to flag recovery values

FORM II 537 (modified)

FORM II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFDoA #	PFTDA #
	MB 320-383169/1-A	79	84
	LCS 320-383169/2-A	90	101
	LCSD 320-383169/3-A	91	85

	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 II
LCMS SURROGATE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Matrix: Water Level: Low

GC Column (1): Gemini C18 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxA #	M262FTS #	M282FTS #	d5NEFOS #
CELL 7 PLCRS DL	320-61340-1 DL	80	146	195 *5	132

	QC LIMITS
PFHxA = 13C2 PFHxA	25-150
M262FTS = M2-6:2 FTS	25-150
M282FTS = M2-8:2 FTS	25-150
d5NEFOS = d5-NEtFOSAA	25-150

Column to be used to flag recovery values

FORM II 537 (modified)

FORM III
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Matrix: Water Level: Low Lab File ID: 2020.06.04_A18_PFC_A_008.d

Lab ID: LCS 320-383169/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorobutanoic acid	40.0	44.2	111	76-136	
Perfluoropentanoic acid (PFPeA)	40.0	40.8	102	71-131	
Perfluorohexanoic acid (PFHxA)	40.0	40.9	102	73-133	
Perfluoroheptanoic acid	40.0	41.8	104	72-132	
Perfluorooctanoic acid (PFOA)	40.0	39.2	98	70-130	
Perfluorononanoic acid (PFNA)	40.0	37.6	94	75-135	
Perfluorodecanoic acid (PFDA)	40.0	39.7	99	76-136	
Perfluoroundecanoic acid (PFUnA)	40.0	42.4	106	68-128	
Perfluorododecanoic acid (PFDoA)	40.0	41.2	103	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	45.2	113	71-131	
Perfluorotetradecanoic acid (PFTeA)	40.0	41.0	103	70-130	
Perfluorobutanesulfonic acid (PFBS)	35.4	36.7	104	67-127	
Perfluorohexanesulfonic acid (PFHxS)	36.4	32.8	90	59-119	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	39.0	102	76-136	
Perfluorooctanesulfonic acid (PFOS)	37.1	38.5	104	70-130	
Perfluorodecanesulfonic acid (PFDS)	38.6	38.1	99	71-131	
Perfluorooctanesulfonamide (FOSA)	40.0	41.3	103	73-133	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	42.6	107	76-136	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	38.2	95	76-136	
6:2 FTS	37.9	39.0	103	59-175	
8:2 FTS	38.3	40.6	106	75-135	
13C4 PFBA	100	87.9	88	25-150	
13C5 PFPeA	100	92.0	92	25-150	
13C2 PFHxA	100	94.8	95	25-150	
13C4 PFHpA	100	95.5	95	25-150	
13C4 PFOA	100	95.8	96	25-150	
13C5 PFNA	100	103	103	25-150	
13C2 PFDA	100	93.9	94	25-150	
13C2 PFUnA	100	93.8	94	25-150	
13C2 PFDoA	100	90.5	90	25-150	
13C2 PFTeDA	100	101	101	25-150	
13C3 PFBS	93.0	89.0	96	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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Matrix: Water Level: Low Lab File ID: 2020.06.04_A18_PFC_A_008.d

Lab ID: LCS 320-383169/2-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
18O2 PFHxS	94.6	90.5	96	25-150	
13C4 PFOS	95.6	89.1	93	25-150	
13C8 FOSA	100	87.5	87	25-150	
d3-NMeFOSAA	100	89.1	89	25-150	
d5-NEtFOSAA	100	93.0	93	25-150	
M2-6:2 FTS	95.0	100	105	25-150	
M2-8:2 FTS	95.8	99.8	104	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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Matrix: Water Level: Low Lab File ID: 2020.06.04_A18_PFC_A_009.d

Lab ID: LCSD 320-383169/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Perfluorobutanoic acid	40.0	44.3	111	0	30	76-136	
Perfluoropentanoic acid (PFPeA)	40.0	40.4	101	1	30	71-131	
Perfluorohexanoic acid (PFHxA)	40.0	41.5	104	1	30	73-133	
Perfluoroheptanoic acid	40.0	42.7	107	2	30	72-132	
Perfluorooctanoic acid (PFOA)	40.0	38.8	97	1	30	70-130	
Perfluorononanoic acid (PFNA)	40.0	40.5	101	7	30	75-135	
Perfluorodecanoic acid (PFDA)	40.0	45.0	113	12	30	76-136	
Perfluoroundecanoic acid (PFUnA)	40.0	40.2	101	5	30	68-128	
Perfluorododecanoic acid (PFDoA)	40.0	37.6	94	9	30	71-131	
Perfluorotridecanoic acid (PFTriA)	40.0	37.8	94	18	30	71-131	
Perfluorotetradecanoic acid (PFTeA)	40.0	48.0	120	16	30	70-130	
Perfluorobutanesulfonic acid (PFBS)	35.4	38.7	109	5	30	67-127	
Perfluorohexanesulfonic acid (PFHxS)	36.4	33.4	92	2	30	59-119	
Perfluoroheptanesulfonic Acid (PFHpS)	38.1	40.0	105	3	30	76-136	
Perfluorooctanesulfonic acid (PFOS)	37.1	38.4	103	0	30	70-130	
Perfluorodecanesulfonic acid (PFDS)	38.6	37.0	96	3	30	71-131	
Perfluorooctanesulfonamide (FOSA)	40.0	42.4	106	3	30	73-133	
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	40.0	43.2	108	1	30	76-136	
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	40.0	39.6	99	4	30	76-136	
6:2 FTS	37.9	40.5	107	4	30	59-175	
8:2 FTS	38.3	42.2	110	4	30	75-135	
13C4 PFBA	100	86.3	86			25-150	
13C5 PFPeA	100	88.7	89			25-150	
13C2 PFHxA	100	90.3	90			25-150	
13C4 PFHpA	100	89.9	90			25-150	
13C4 PFOA	100	93.3	93			25-150	
13C5 PFNA	100	92.9	93			25-150	
13C2 PFDA	100	86.2	86			25-150	
13C2 PFUnA	100	94.0	94			25-150	
13C2 PFDoA	100	91.0	91			25-150	
13C2 PFTeDA	100	84.7	85			25-150	
13C3 PFBS	93.0	84.2	90			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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Matrix: Water Level: Low Lab File ID: 2020.06.04_A18_PFC_A_009.d

Lab ID: LCSD 320-383169/3-A Client ID:

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
18O2 PFHxS	94.6	86.5	91			25-150	
13C4 PFOS	95.6	88.1	92			25-150	
13C8 FOSA	100	80.8	81			25-150	
d3-NMeFOSAA	100	80.9	81			25-150	
d5-NEtFOSAA	100	80.1	80			25-150	
M2-6:2 FTS	95.0	94.1	99			25-150	
M2-8:2 FTS	95.8	97.5	102			25-150	

Column to be used to flag recovery and RPD values

FORM III 537 (modified)

FORM IV
LCMS METHOD BLANK SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab File ID: 2020.06.04_A18_PFC_A_007.d Lab Sample ID: MB 320-383169/1-A

Matrix: Water Date Extracted: 06/03/2020 18:28

Instrument ID: A18 Date Analyzed: 06/04/2020 09:48

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-383169/2-A	2020.06.04_A18_PFC_A_008.d	06/04/2020 09:58
	LCSD 320-383169/3-A	2020.06.04_A18_PFC_A_009.d	06/04/2020 10:07
CELL 7 PLCRS	320-61340-1	2020.06.04_A18_PFC_AA_024.d	06/04/2020 13:11
CELL 7 PLCRS DL	320-61340-1 DL	2020.06.05_A15_PFC_A_015.d	06/05/2020 15:50

FORM VIII
LCMS INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Sample No.: IC 320-383313/5 Date Analyzed: 06/04/2020 12:24

Instrument ID: A15 GC Column: Gemini C18 3x50 ID: 3(mm)

Lab File ID (Standard): 2020.06.04_A15_PFC_ Heated Purge: (Y/N) N

Calibration ID: 50360

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		6096629	4.05				
UPPER LIMIT		9144944	4.25				
LOWER LIMIT		3048315	3.85				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-383313/9		6358610	4.04				
ICV 320-383313/10		5679046	4.05				
CCV 320-383943/3 CCVIS		6810881	4.06				

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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Sample No.: CCV 320-383943/3 Date Analyzed: 06/05/2020 14:28

Instrument ID: A15 GC Column: Gemini C18 3x50 ID: 3(mm)

Lab File ID (Standard): 2020.06.05_A15_PFC_ Heated Purge: (Y/N) N

Calibration ID: 50360

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		6810881	4.06				
UPPER LIMIT		10216322	4.26				
LOWER LIMIT		3405441	3.86				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-383943/1		7414006	4.05				
CCVL 320-383943/2		6904693	4.07				
320-61340-1 DL	CELL 7 PLCRS DL	2002450*3	4.06				
CCV 320-383943/15		6162411	4.06				

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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Sample No.: IC 320-383200/5 Date Analyzed: 06/03/2020 21:16

Instrument ID: A18 GC Column: Gemini C18 3x50 ID: 3(mm)

Lab File ID (Standard): 2020.06.03_A18_PFC_ Heated Purge: (Y/N) N

Calibration ID: 50353

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		8276555	4.13				
UPPER LIMIT		12414833	4.33				
LOWER LIMIT		4138278	3.93				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICB 320-383200/10		8964680	4.13				
ICV 320-383200/11		8113456	4.13				
CCV 320-383436/4 CCVIS		9074725	4.10				

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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Sample No.: CCV 320-383436/4 Date Analyzed: 06/04/2020 09:38

Instrument ID: A18 GC Column: Gemini C18 3x50 ID: 3(mm)

Lab File ID (Standard): 2020.06.04_A18_PFC_ Heated Purge: (Y/N) N

Calibration ID: 50353

		13PFOA					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		9074725	4.10				
UPPER LIMIT		13612088	4.30				
LOWER LIMIT		4537363	3.90				
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCB 320-383436/2		9023688	4.10				
CCVL 320-383436/3		8768866	4.11				
MB 320-383169/1-A		9082937	4.11				
LCS 320-383169/2-A		8886538	4.10				
LCSD 320-383169/3-A		9356060	4.10				
CCV 320-383436/12		8071088	4.10				
CCV 320-383454/1		9364824	4.09				
320-61340-1	CELL 7 PLCRS	7661534	4.10				
CCV 320-383454/12		8528915	4.10				

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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Client Sample ID: CELL 7 PLCRS Lab Sample ID: 320-61340-1

Matrix: Water Lab File ID: 2020.06.04_A18_PFC_AA_024.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 12:10

Extraction Method: 3535 Date Extracted: 06/03/2020 18:29

Sample wt/vol: 280.9(mL) Date Analyzed: 06/04/2020 13:11

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383454 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	260	B	1.8	0.31
2706-90-3	Perfluoropentanoic acid (PFPeA)	140		1.8	0.44
375-85-9	Perfluoroheptanoic acid	26		1.8	0.22
335-67-1	Perfluorooctanoic acid (PFOA)	50		1.8	0.76
375-95-1	Perfluorononanoic acid (PFNA)	5.0		1.8	0.24
335-76-2	Perfluorodecanoic acid (PFDA)	3.2		1.8	0.28
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		1.8	0.98
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		1.8	0.49
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		1.8	1.2
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		1.8	0.26
375-73-5	Perfluorobutanesulfonic acid (PFBS)	160		1.8	0.18
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	8.6	B	1.8	0.15
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	0.26	J	1.8	0.17
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	16		1.8	0.48
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		1.8	0.28
754-91-6	Perfluorooctanesulfonamide (FOSA)	2.2	B	1.8	0.31
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		18	2.8

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Client Sample ID: CELL 7 PLCRS Lab Sample ID: 320-61340-1

Matrix: Water Lab File ID: 2020.06.04_A18_PFC_AA_024.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 12:10

Extraction Method: 3535 Date Extracted: 06/03/2020 18:29

Sample wt/vol: 280.9(mL) Date Analyzed: 06/04/2020 13:11

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383454 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	31		25-150
STL01893	13C5 PFPeA	56		25-150
STL01892	13C4 PFHpA	93		25-150
STL00990	13C4 PFOA	94		25-150
STL00995	13C5 PFNA	115		25-150
STL00996	13C2 PFDA	108		25-150
STL00997	13C2 PFUnA	111		25-150
STL00998	13C2 PFDoA	87		25-150
STL02116	13C2 PFTeDA	51		25-150
STL02337	13C3 PFBS	93		25-150
STL00994	18O2 PFHxS	106		25-150
STL00991	13C4 PFOS	102		25-150
STL01056	13C8 FOSA	98		25-150
STL02118	d3-NMeFOSAA	135		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d
Lims ID: 320-61340-A-1-A
Client ID: CELL 7 PLCRS
Sample Type: Client
Inject. Date: 04-Jun-2020 13:11:08 ALS Bottle#: 16 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: 320-61340-a-1-a
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 08:13:50 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1005

First Level Reviewer: ruangyotsakuld Date: 05-Jun-2020 08:13:50
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_037.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutanoic acid										M
212.90 > 169.00	2.565	2.563	0.002	1.000	7172408	7.21			133	M
D 1 13C4 PFBA										
217.00 > 172.00	2.565	2.563	0.002	0.626	2919473	0.7639		30.6	1603	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.930	2.927	0.003	1.000	7297749	3.91			23.0	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.930	2.927	0.003	0.715	4839944	1.41		56.5	1073	
D 9 13C3 PFBS										
301.90 > 80.00	2.973	2.971	0.002	0.725	5824973	2.17		93.5	62.7	
6 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.973	2.971	0.002	1.000	10919102	4.47	Target=2.24		39.4	M
298.90 > 99.00	2.973	2.971	0.002	1.000	5005965		2.18(1.12-3.37)		181	
D 11 13C2 PFHxA										
315.00 > 270.00	3.298	3.307	-0.009	0.805	5673368	1.66		66.5	3021	
10 Perfluorohexanoic acid										EM
313.00 > 269.00	3.298	3.307	-0.009	1.000	21225072	10.1	Target=12.08		194	EM
313.00 > 119.00	3.298	3.307	-0.009	1.000	1788310		11.87(6.04-18.12)		318	
D 18 13C4 PFHpA										
367.00 > 322.00	3.701	3.706	-0.005	0.903	7067046	2.33		93.3	3718	
16 Perfluoroheptanoic acid										M
363.00 > 319.00	3.711	3.706	0.005	1.003	2044507	0.7338	Target=3.28		38.7	M
363.00 > 169.00	3.711	3.706	0.005	1.003	625860		3.27(1.64-4.92)		159	
D 17 18O2 PFHxS										
403.00 > 84.00	3.711	3.716	-0.005	0.905	3211110	2.51		106	3293	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.711	3.716	-0.005	1.000	377053	0.2412	Target=2.91		4.7	M
399.00 > 99.00	3.711	3.716	-0.005	1.000	149158		2.53(1.45-4.36)		27.4	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
21 6:2 FTS										
427.00 > 407.00	4.083	4.072	0.011	1.000	460457	0.2907			479	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.083	4.072	0.011	0.996	1878156	5.35		225	463	
D 25 13C4 PFOA										
417.00 > 372.00	4.099	4.096	0.003	1.000	7146119	2.35		94.2	5049	
24 Perfluoroheptanesulfonic acid										M
449.00 > 80.00	4.091	4.096	-0.005	0.917	6080	0.007254	Target=3.24		1.1	M
449.00 > 99.00	4.091	4.096	-0.005	0.917	2389		2.54(1.62-4.86)		1.3	
* 23 13C2 PFOA										
415.00 > 370.00	4.099	4.096	0.003		7661534	2.50			5050	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.099	4.096	0.003	1.000	4071356	1.41	Target=2.48		183	M
413.00 > 169.00	4.099	4.096	0.003	1.000	1837801		2.22(1.24-3.73)		1666	
D 27 13C4 PFOS										
503.00 > 80.00	4.463	4.459	0.004	1.089	1323089	2.44		102	499	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.463	4.459	0.004	1.000	255416	0.4574	Target=2.46		84.5	M
499.00 > 99.00	4.463	4.459	0.004	1.000	91950		2.78(1.23-3.69)		56.6	M
D 30 13C5 PFNA										
468.00 > 423.00	4.471	4.467	0.004	1.091	7078923	2.86		115	5548	
31 Perfluorononanoic acid										
463.00 > 419.00	4.471	4.467	0.004	1.000	379582	0.1394	Target=6.64		44.0	
463.00 > 169.00	4.471	4.467	0.004	1.000	57338		6.62(3.32-9.97)		81.0	
D 33 13C8 FOSA										
506.00 > 78.00	4.803	4.800	0.003	1.172	2951461	2.45		98.0	2575	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.803	4.800	0.003	1.000	66208	0.0611			55.1	
D 39 13C2 PFDA										
515.00 > 470.00	4.821	4.817	0.004	1.176	7195134	2.69		108	7036	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.821	4.817	0.004	1.000	234095	0.0909	Target=7.71		44.9	
513.00 > 169.00	4.821	4.817	0.004	1.000	28670		8.17(3.85-11.56)		66.7	
36 8:2 FTS										
527.00 > 507.00	4.829	4.817	0.012	1.002	79467	0.0347			838	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.821	4.826	-0.005	1.176	3568540	8.04		336	1585	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.990	4.975	0.015	1.217	3340415	3.37		135	2093	
41 NMeFOSAA										
570.00 > 419.00	4.990	4.986	0.004	1.000	31942	0.0338			40.2	
D 43 13C2 PFUnA										
565.00 > 520.00	5.138	5.137	0.001	1.254	6939733	2.78		111	7740	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.148	5.137	0.011	1.002	14472	0.007039	Target=7.06		7.7	
563.00 > 169.00	5.138	5.137	0.001	1.000	2339		6.19(3.53-10.59)		8.9	

Report Date: 05-Jun-2020 08:13:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_037.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.138	5.137	0.001	1.254	4079200	4.03		161	2244	
46 NEtFOSA										M
584.00 > 419.00	5.148	5.146	0.002	1.002	18989	0.0166			78.0	M
D 56 13C2 PFDoA										
615.00 > 570.00	5.426	5.414	0.012	1.324	5729496	2.17		86.8	6675	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.901	5.901	0.0	1.440	2825349	1.28		51.2	5527	

QC Flag Legend

Processing Flags
E - Exceeded Maximum Amount
Review Flags
M - Manually Integrated

Report Date: 05-Jun-2020 08:13:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d

Injection Date: 04-Jun-2020 13:11:08 Instrument ID: A18

Lims ID: 320-61340-A-1-A Lab Sample ID: 320-61340-1

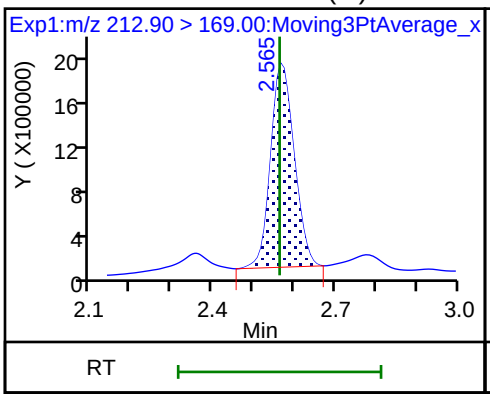
Client ID: CELL 7 PLCRS

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 16 Worklist Smp#: 10

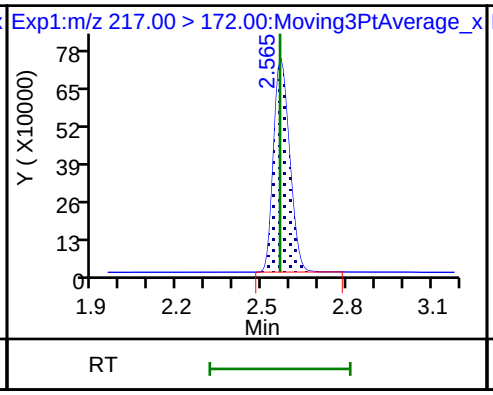
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

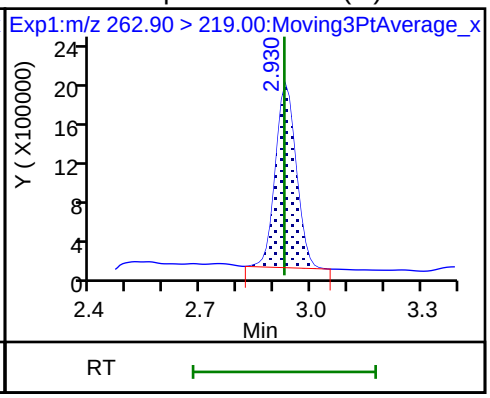
2 Perfluorobutanoic acid (M)



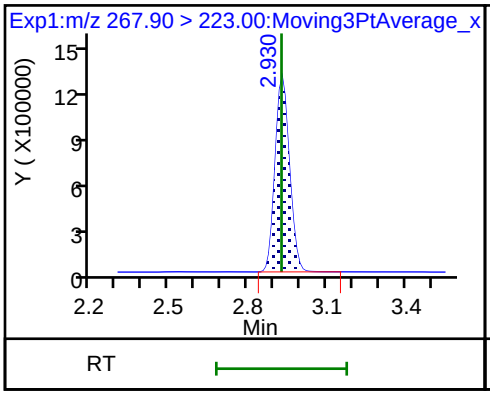
D 1 13C4 PFBA



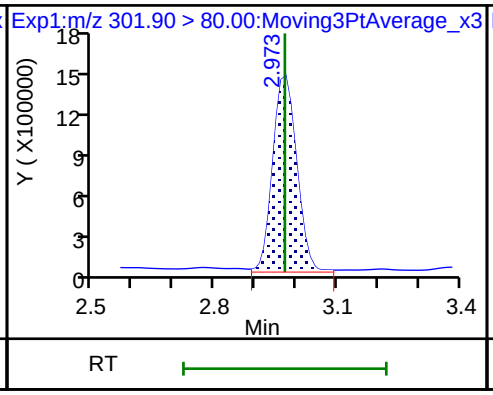
5 Perfluoropentanoic acid (M)



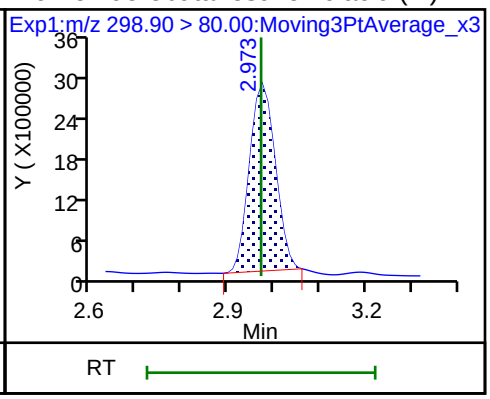
D 4 13C5 PFPeA



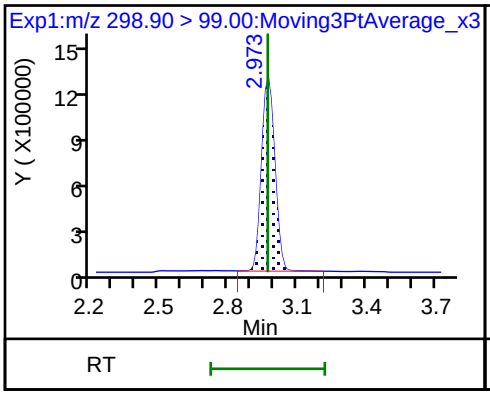
D 9 13C3 PFBS



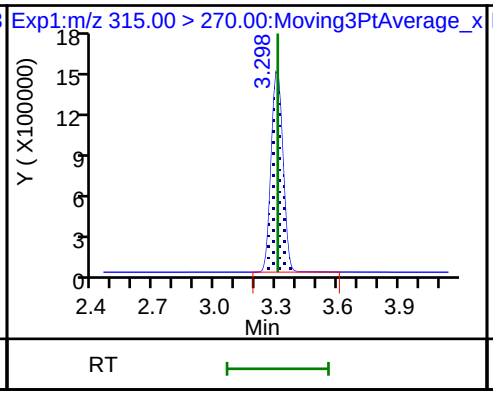
6 Perfluorobutanesulfonic acid (M)



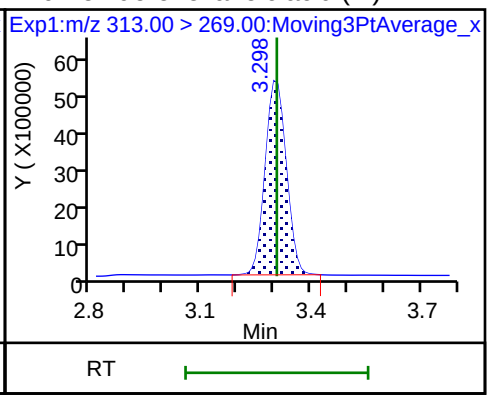
6 Perfluorobutanesulfonic acid



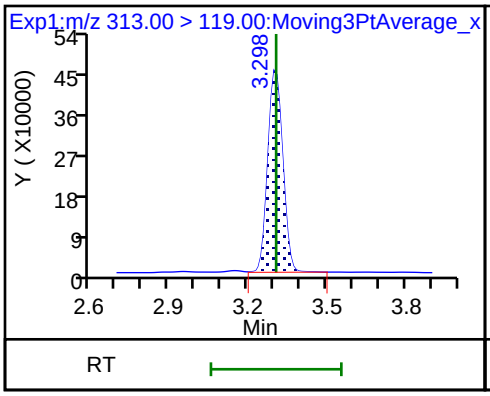
D 11 13C2 PFHxA



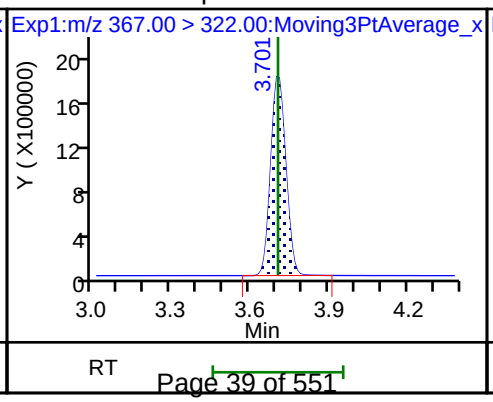
10 Perfluorohexanoic acid (M)



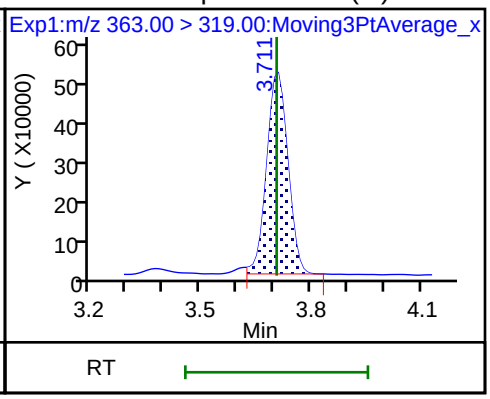
10 Perfluorohexanoic acid



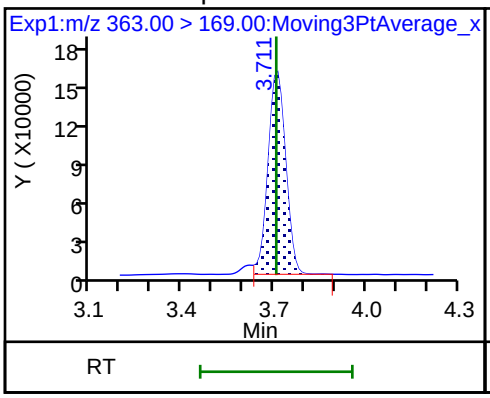
D 18 13C4 PFHpA



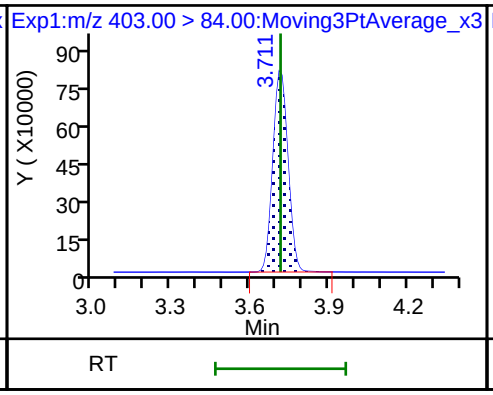
16 Perfluoroheptanoic acid (M)



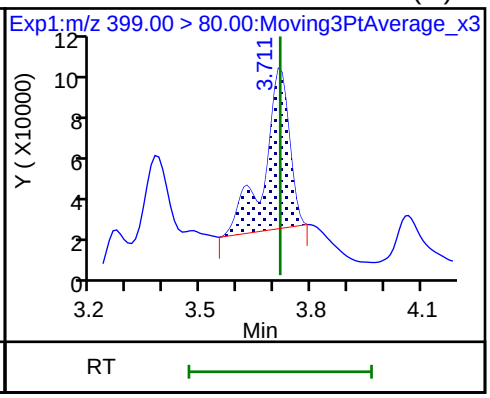
16 Perfluoroheptanoic acid



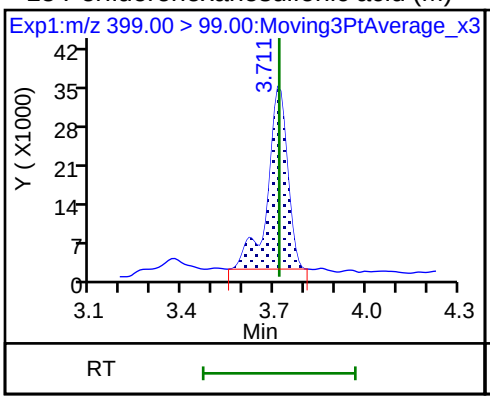
D 17 18O2 PFHxS



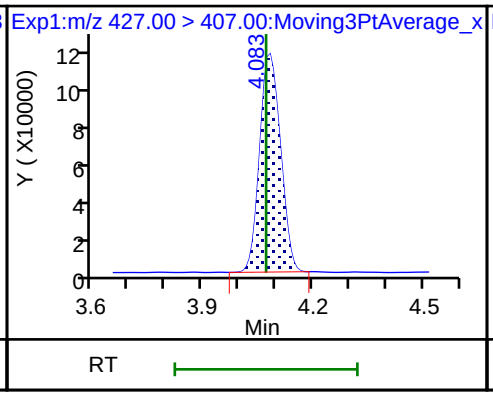
15 Perfluorohexanesulfonic acid (M)



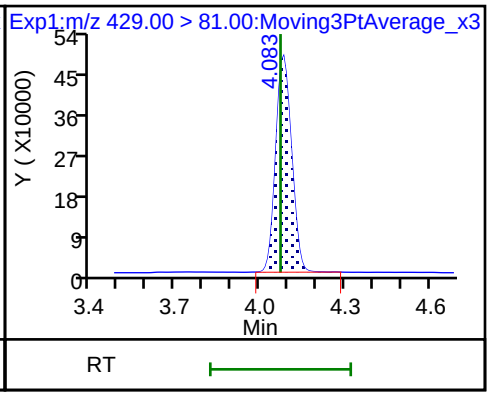
15 Perfluorohexanesulfonic acid (M)



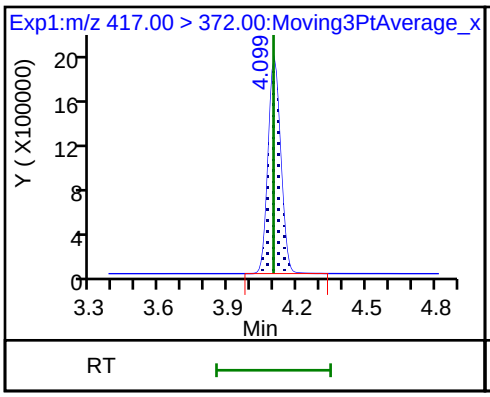
21 6:2 FTS



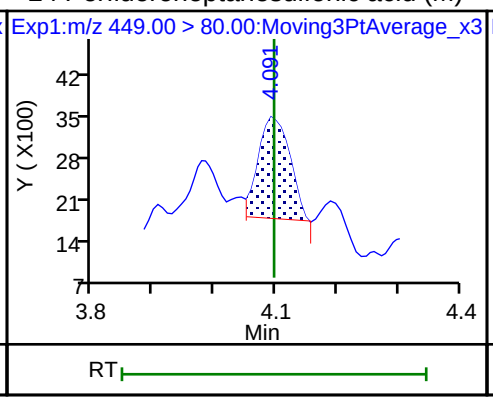
D 20 M2-6:2 FTS



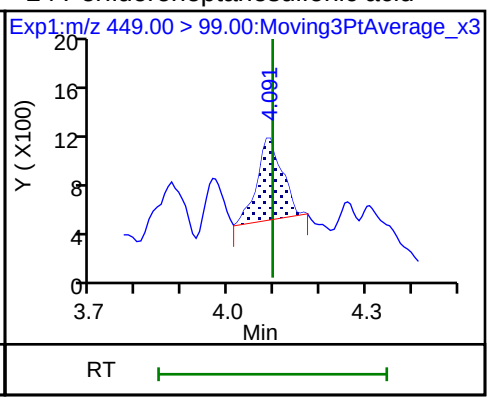
D 25 13C4 PFOA



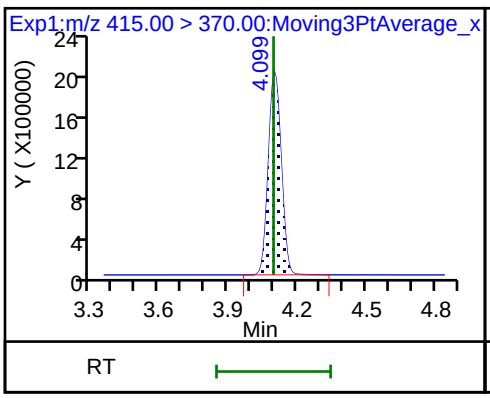
24 Perfluoroheptanesulfonic acid (M)



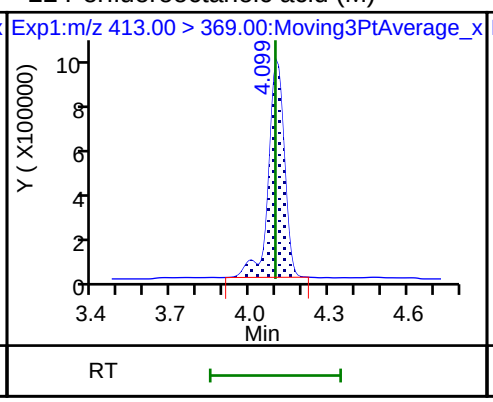
24 Perfluoroheptanesulfonic acid



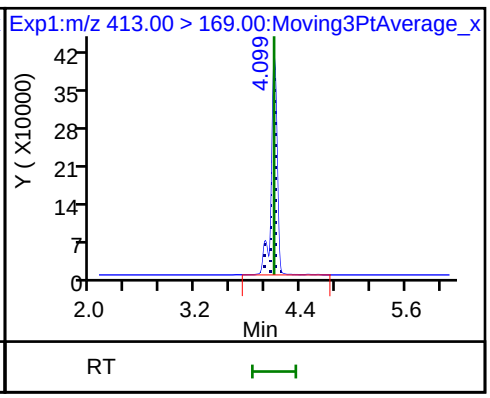
* 23 13C2 PFOA



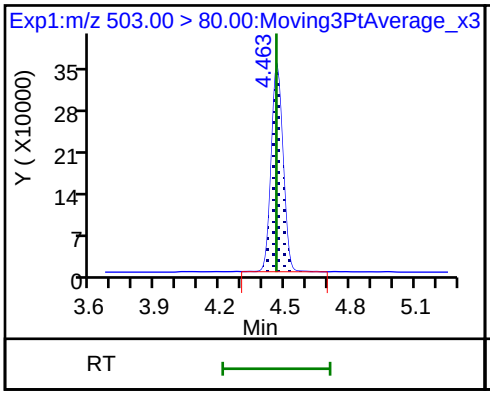
22 Perfluorooctanoic acid (M)



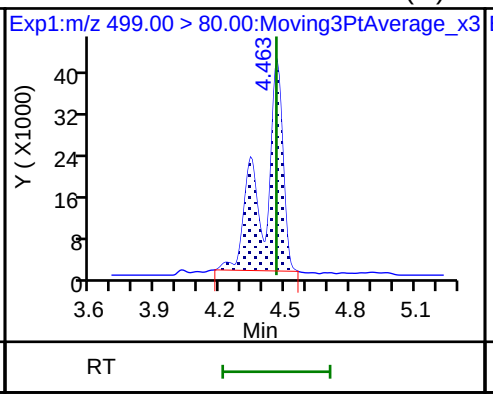
22 Perfluorooctanoic acid



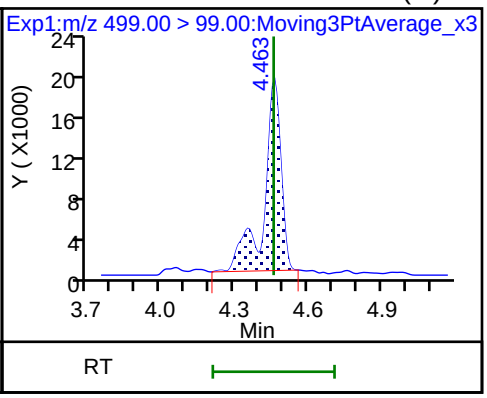
D 27 13C4 PFOS



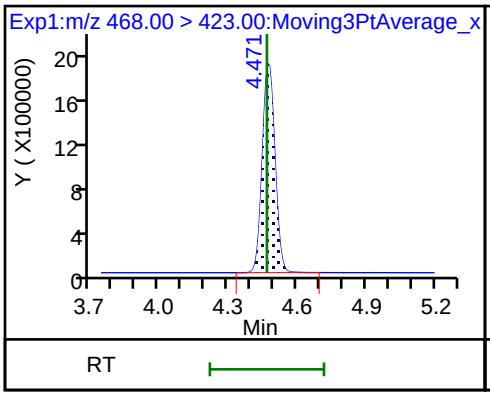
29 Perfluorooctanesulfonic acid (M)



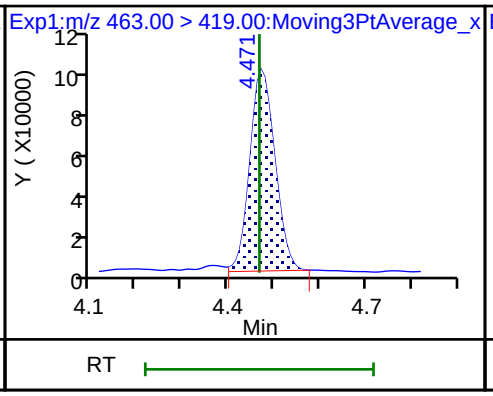
29 Perfluorooctanesulfonic acid (M)



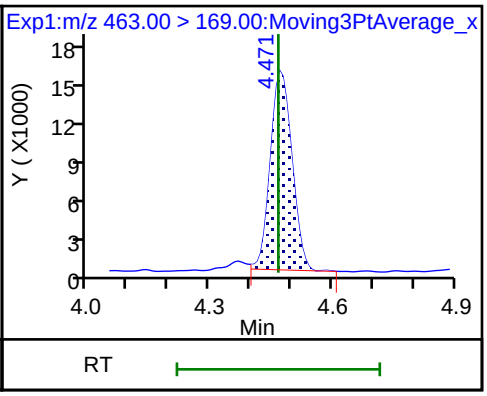
D 30 13C5 PFNA



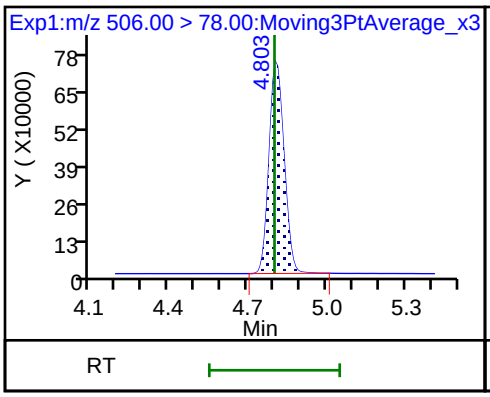
31 Perfluorononanoic acid



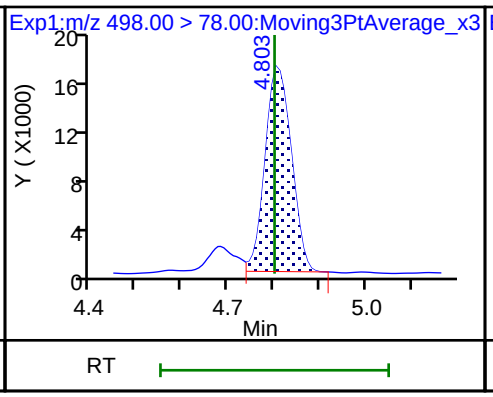
31 Perfluorononanoic acid



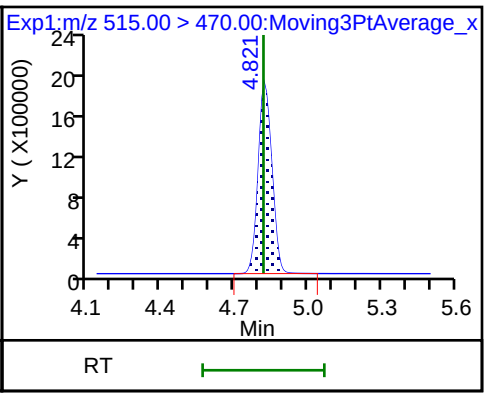
D 33 13C8 FOSA



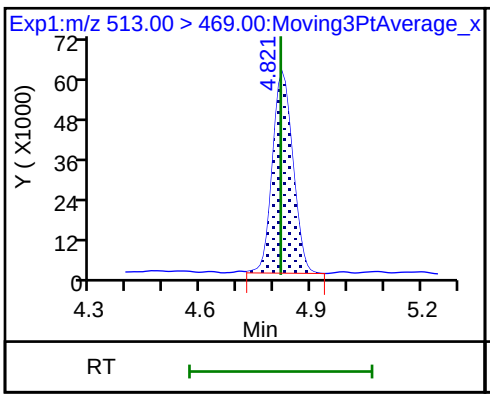
34 Perfluorooctanesulfonamide



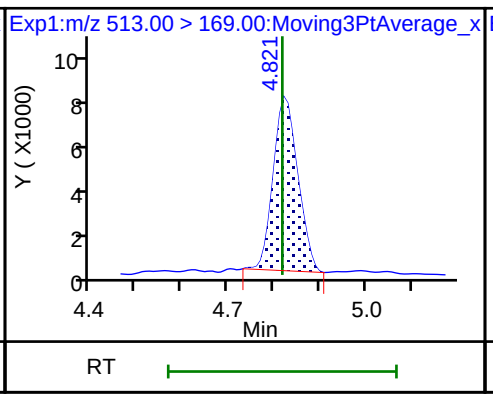
D 39 13C2 PFDA



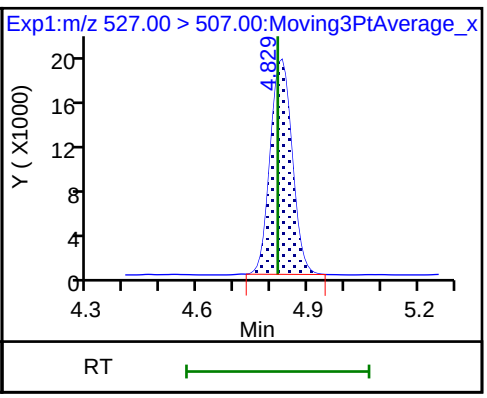
37 Perfluorodecanoic acid



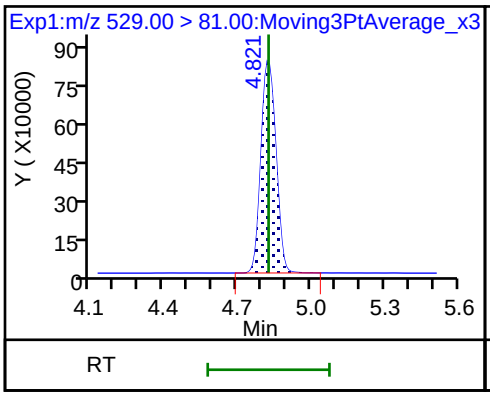
37 Perfluorodecanoic acid



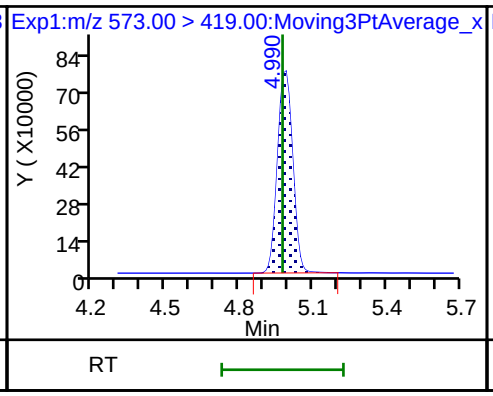
36 8:2 FTS



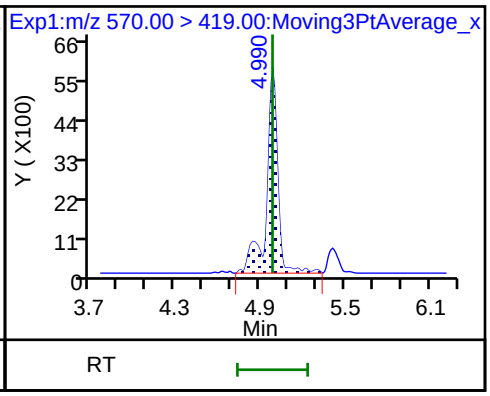
D 38 M2-8:2 FTS



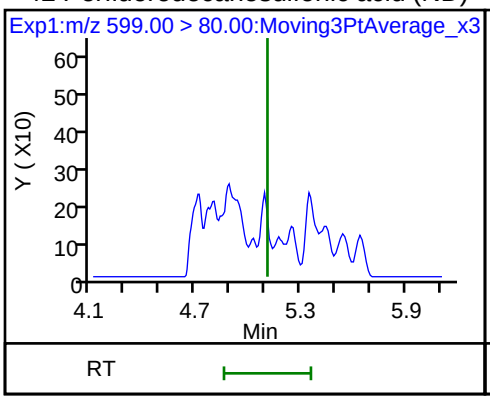
D 40 d3-NMeFOSAA



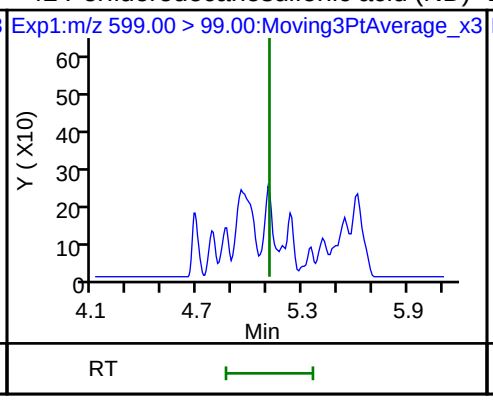
41 NMeFOSAA



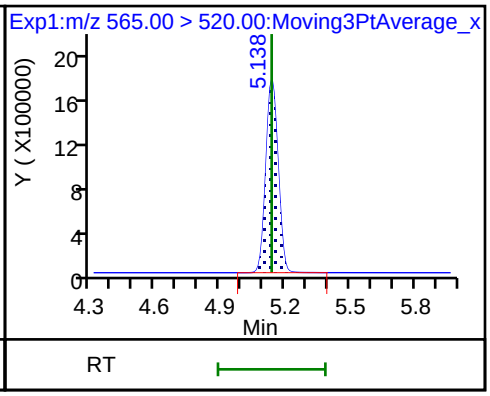
42 Perfluorodecanesulfonic acid (ND)



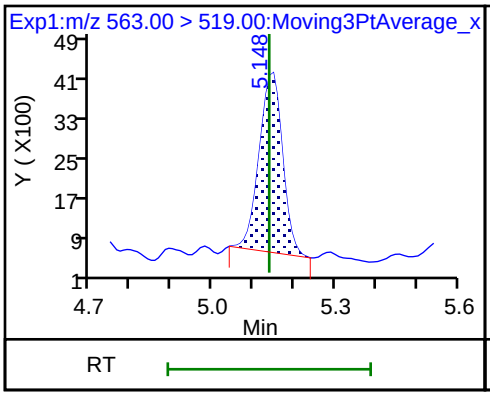
42 Perfluorodecanesulfonic acid (ND)



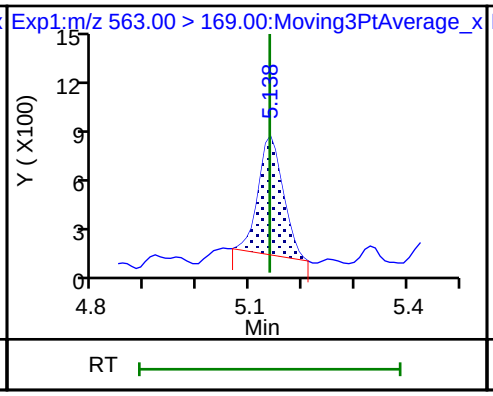
D 43 13C2 PFUnA



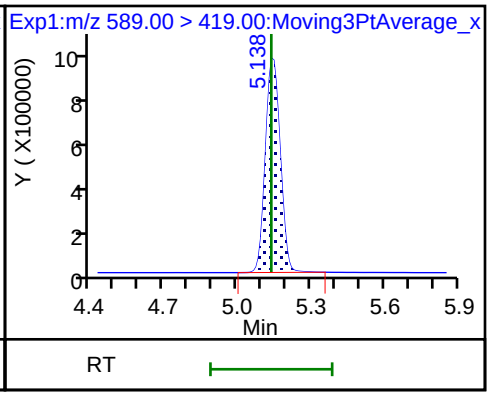
45 Perfluoroundecanoic acid



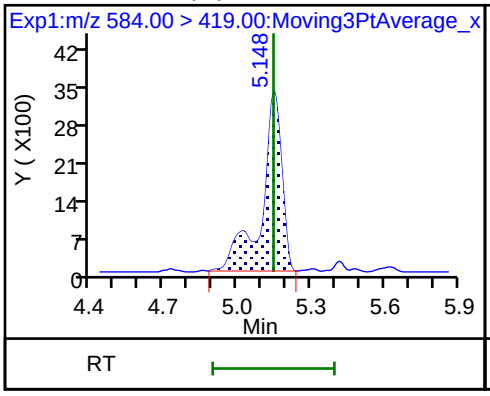
45 Perfluoroundecanoic acid



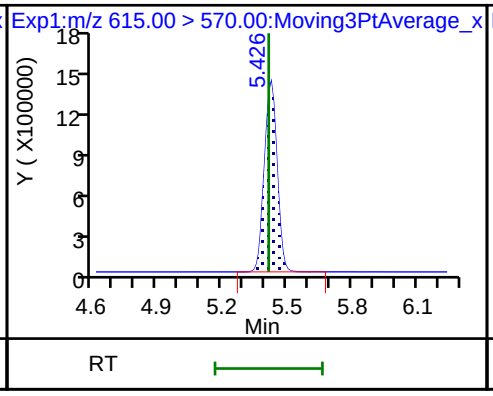
D 44 d5-NEtFOSAA



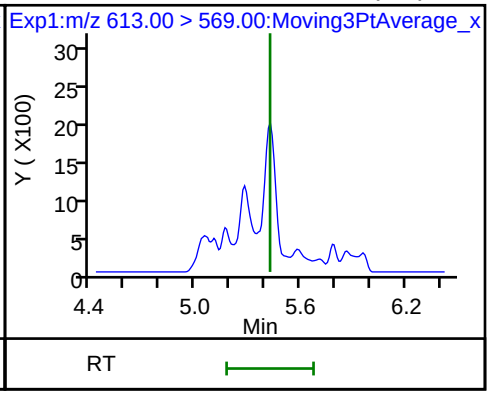
46 NEtFOSA (M)



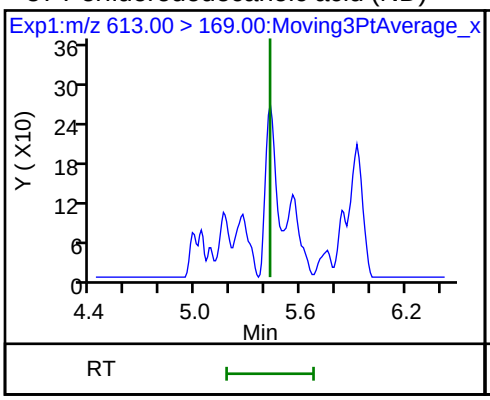
D 56 13C2 PFDoA



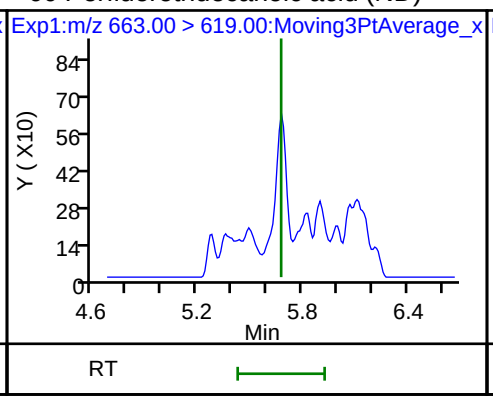
57 Perfluorododecanoic acid (ND)



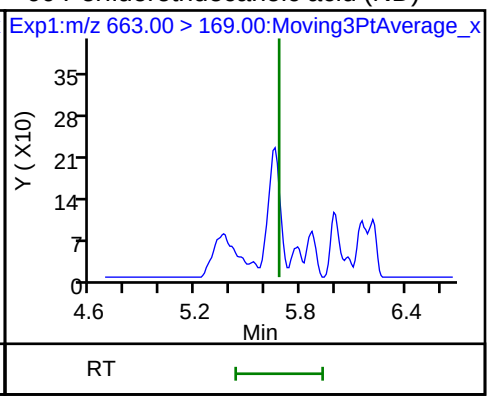
57 Perfluorododecanoic acid (ND)



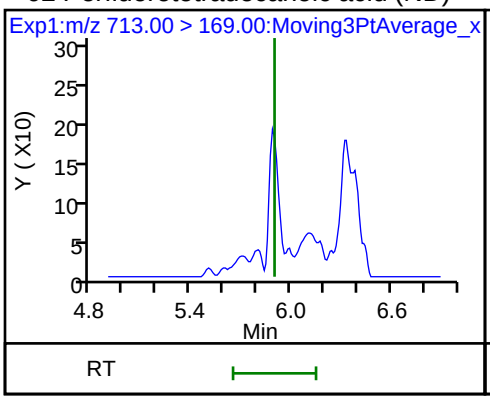
60 Perfluorotridecanoic acid (ND)



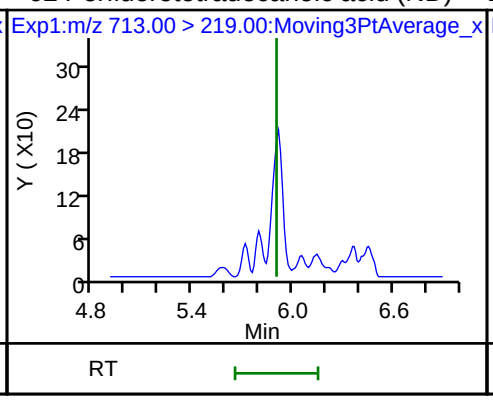
60 Perfluorotridecanoic acid (ND)



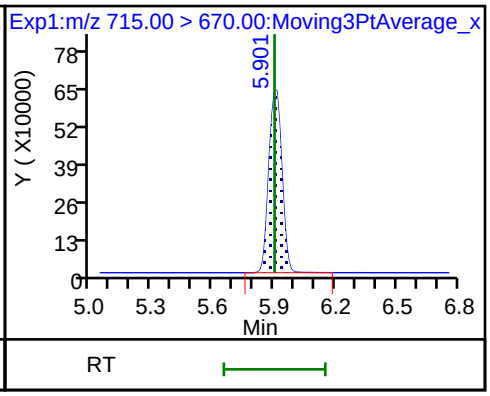
62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



D 61 13C2 PFTeDA



Eurofins TestAmerica, Sacramento

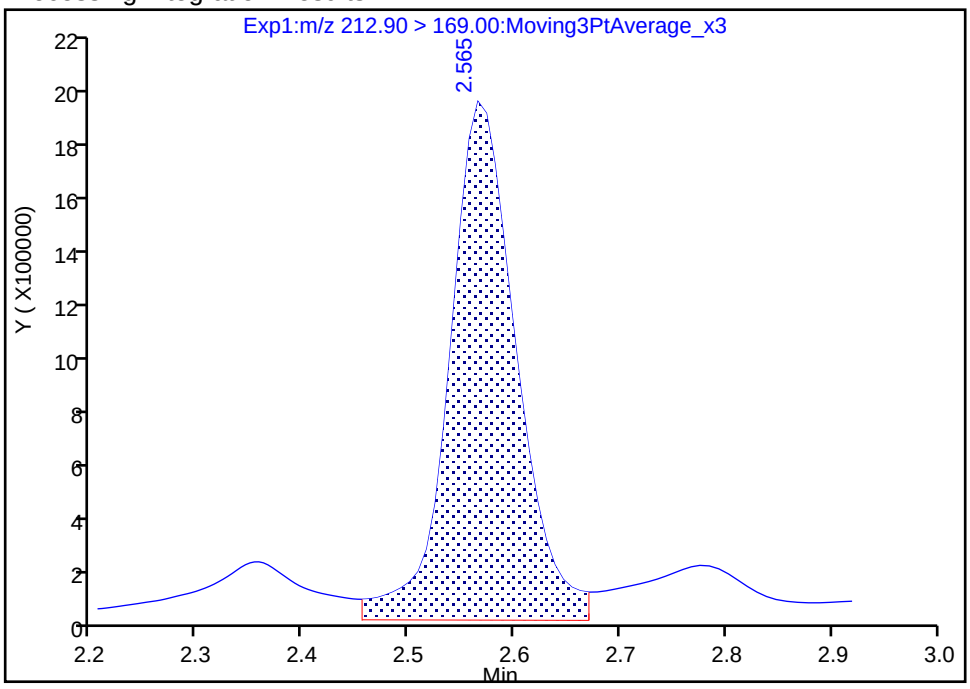
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d				
Injection Date:	04-Jun-2020 13:11:08	Instrument ID:	A18		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	16	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

2 Perfluorobutanoic acid, CAS: 375-22-4

Signal: 1

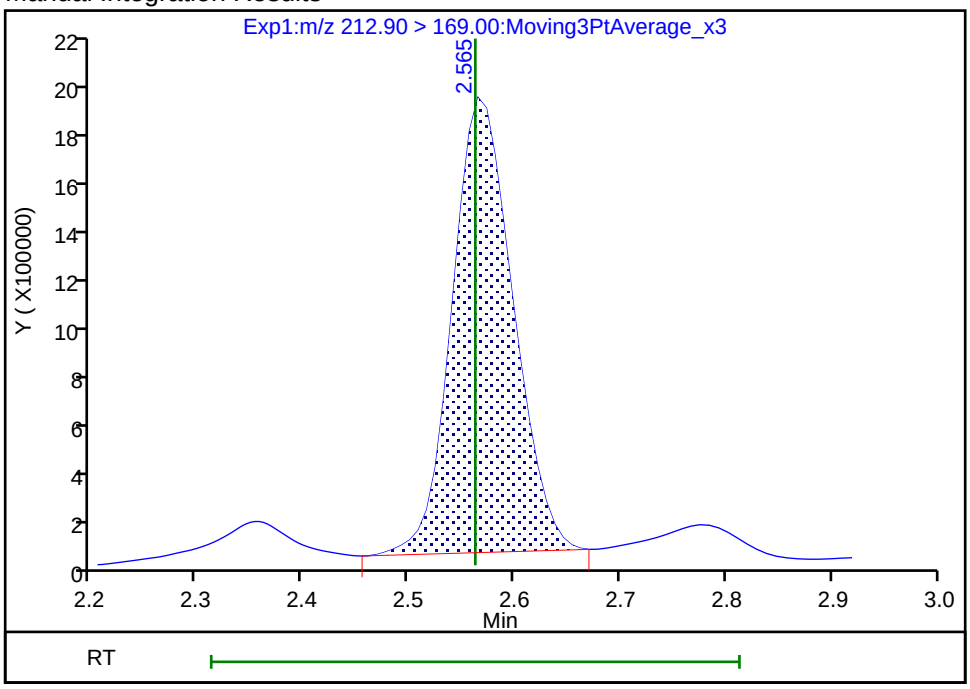
Processing Integration Results

RT: 2.57
Area: 8313615
Amount: 8.358652
Amount Units: ng/ml



Manual Integration Results

RT: 2.57
Area: 7172408
Amount: 7.211263
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 05-Jun-2020 08:11:35
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

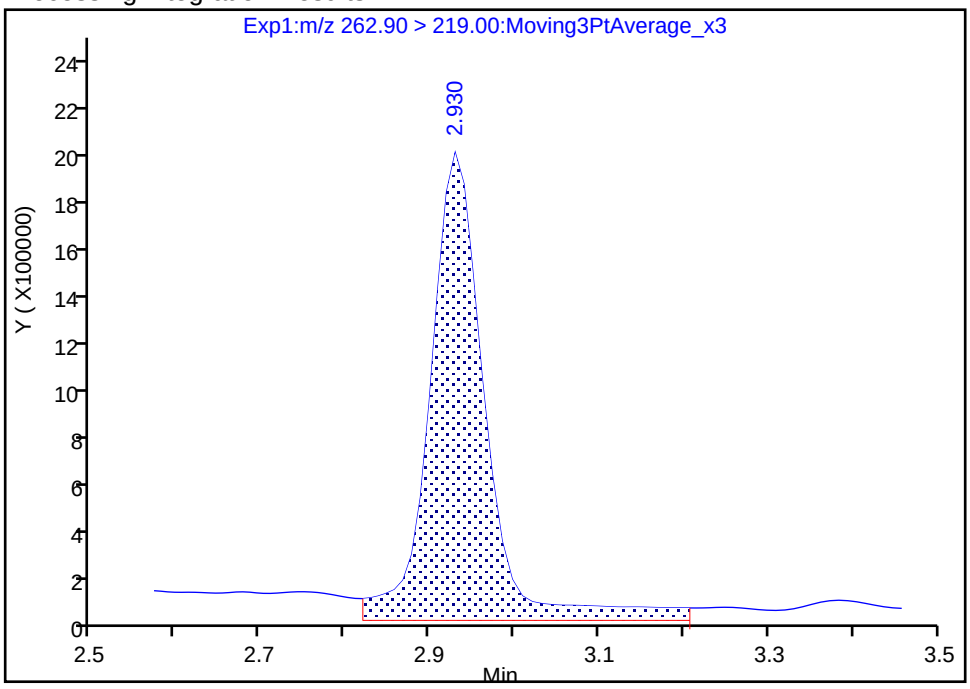
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d				
Injection Date:	04-Jun-2020 13:11:08	Instrument ID:	A18		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	16	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

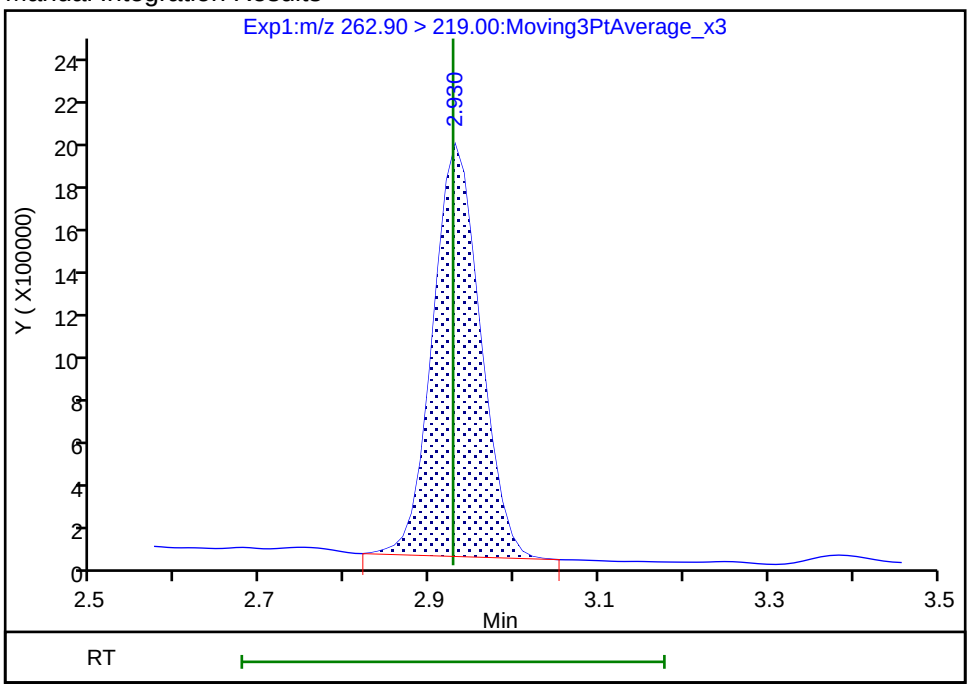
Processing Integration Results

RT: 2.93
Area: 8891954
Amount: 4.769667
Amount Units: ng/ml



Manual Integration Results

RT: 2.93
Area: 7297749
Amount: 3.914531
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 05-Jun-2020 08:11:41
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

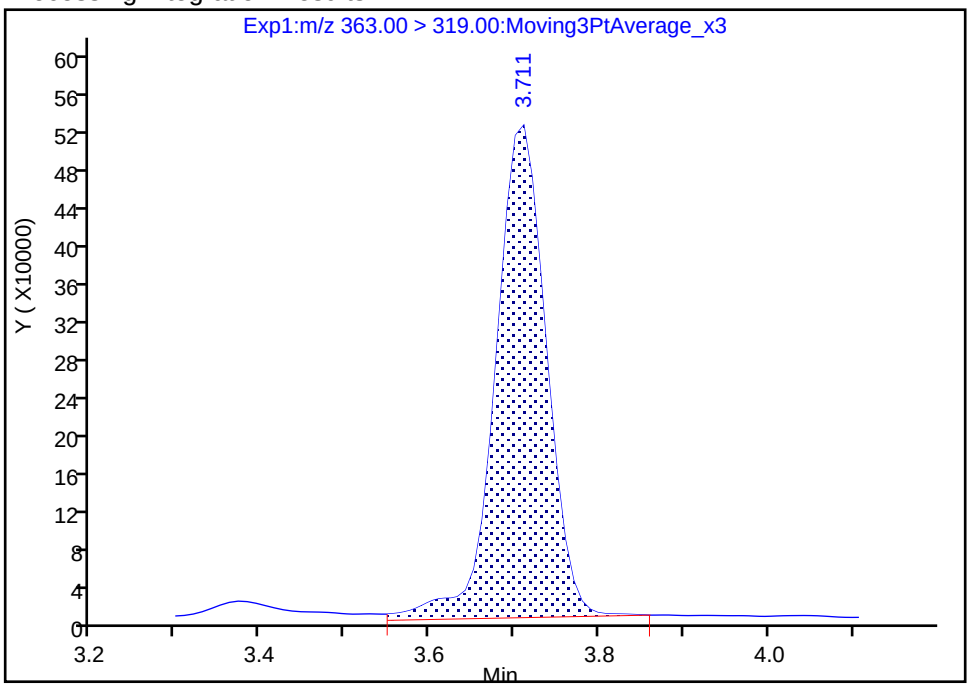
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d				
Injection Date:	04-Jun-2020 13:11:08	Instrument ID:	A18		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	16	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

16 Perfluoroheptanoic acid, CAS: 375-85-9

Signal: 1

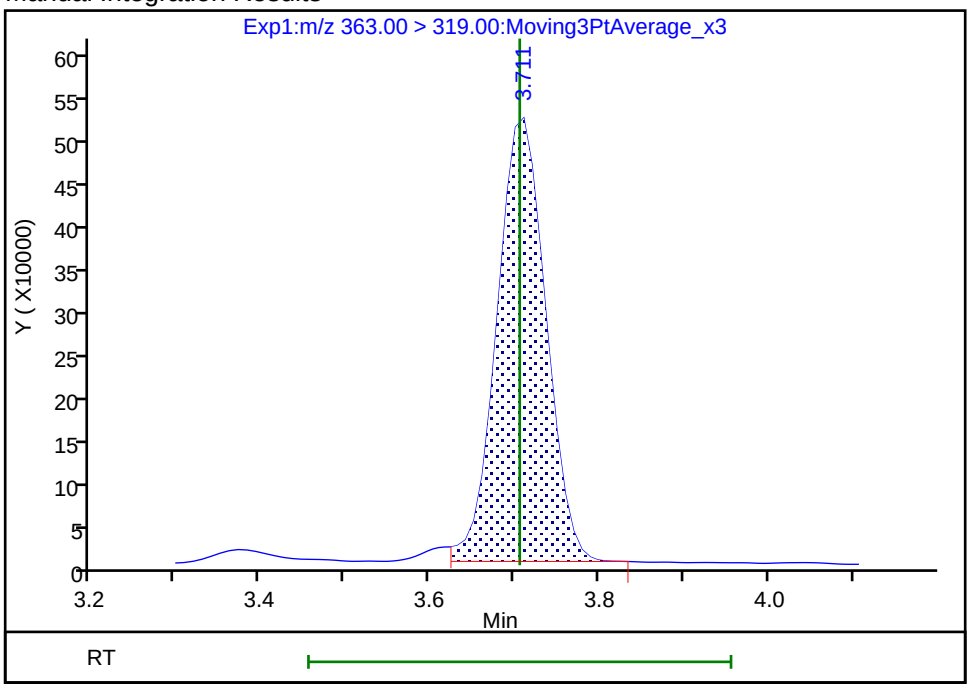
Processing Integration Results

RT: 3.71
Area: 2149661
Amount: 0.771539
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 2044507
Amount: 0.733798
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 05-Jun-2020 08:12:10
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

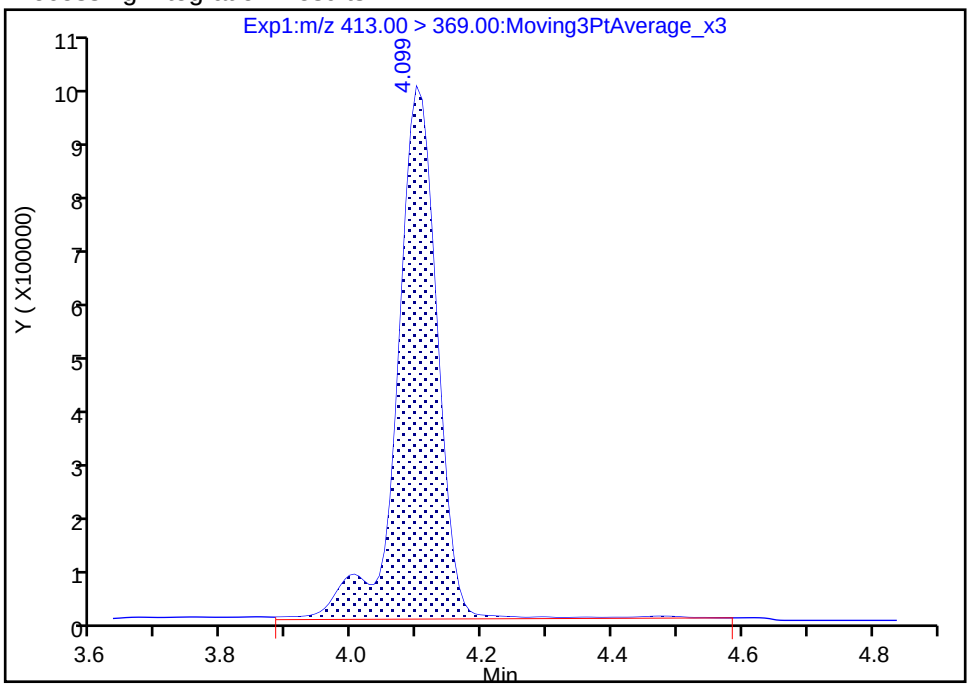
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d				
Injection Date:	04-Jun-2020 13:11:08	Instrument ID:	A18		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	16	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

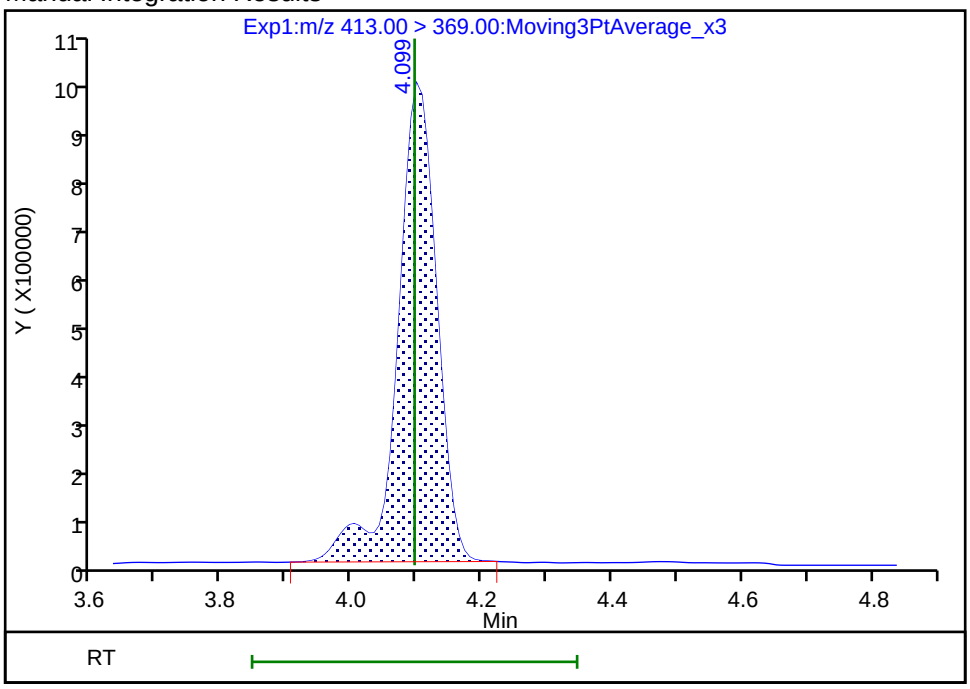
Processing Integration Results

RT: 4.10
Area: 4211589
Amount: 1.455124
Amount Units: ng/ml



Manual Integration Results

RT: 4.10
Area: 4071356
Amount: 1.406673
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 05-Jun-2020 08:12:47
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

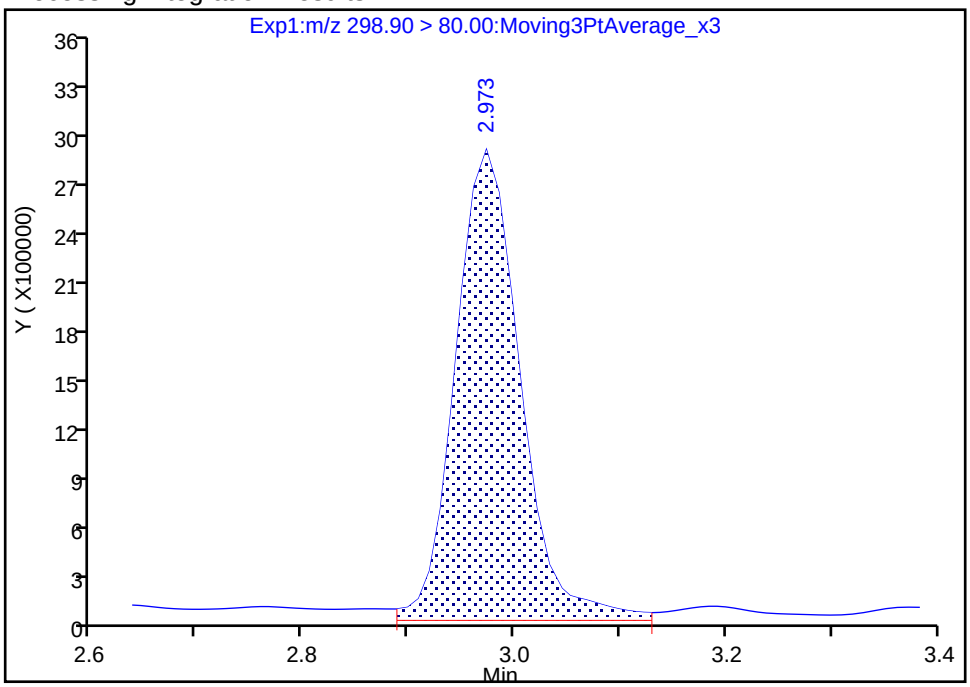
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d				
Injection Date:	04-Jun-2020 13:11:08	Instrument ID:	A18		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	16	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

6 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

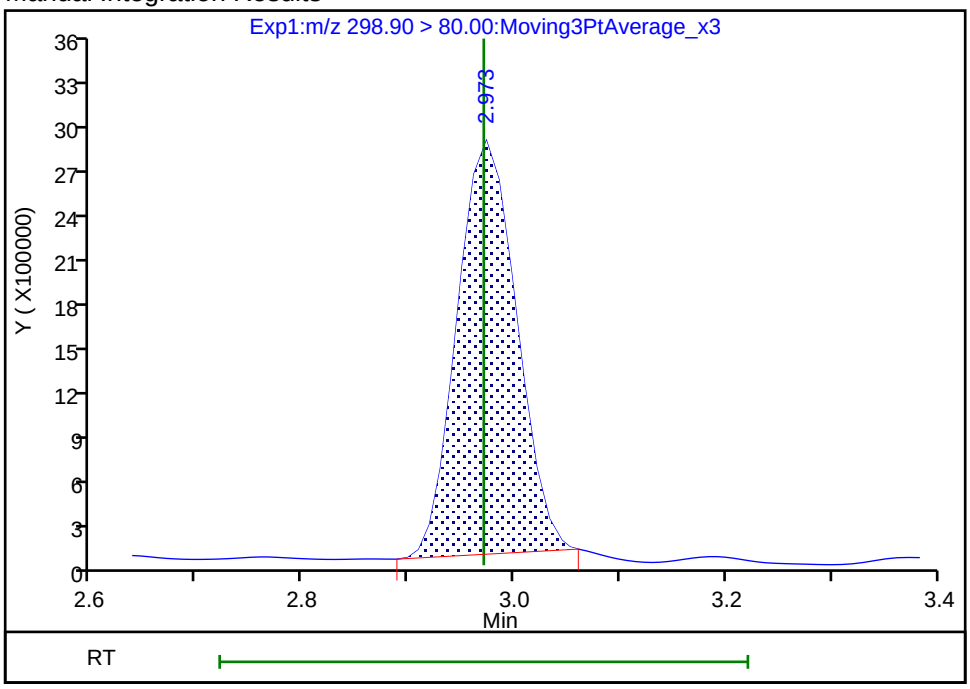
Processing Integration Results

RT: 2.97
Area: 12333983
Amount: 5.048687
Amount Units: ng/ml



Manual Integration Results

RT: 2.97
Area: 10919102
Amount: 4.469532
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 05-Jun-2020 08:11:47
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

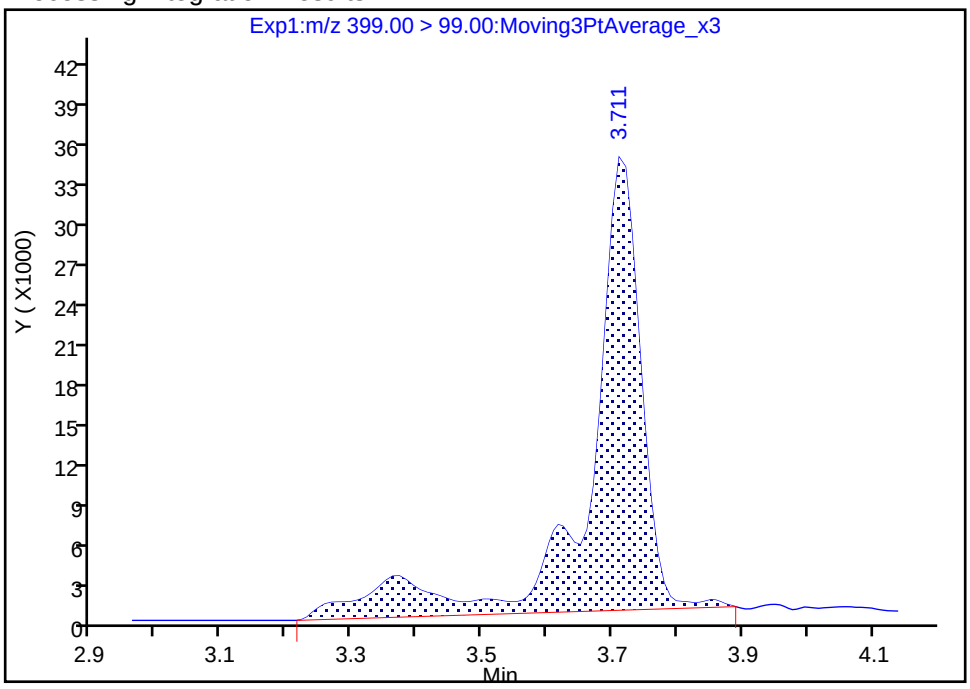
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d				
Injection Date:	04-Jun-2020 13:11:08	Instrument ID:	A18		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	16	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

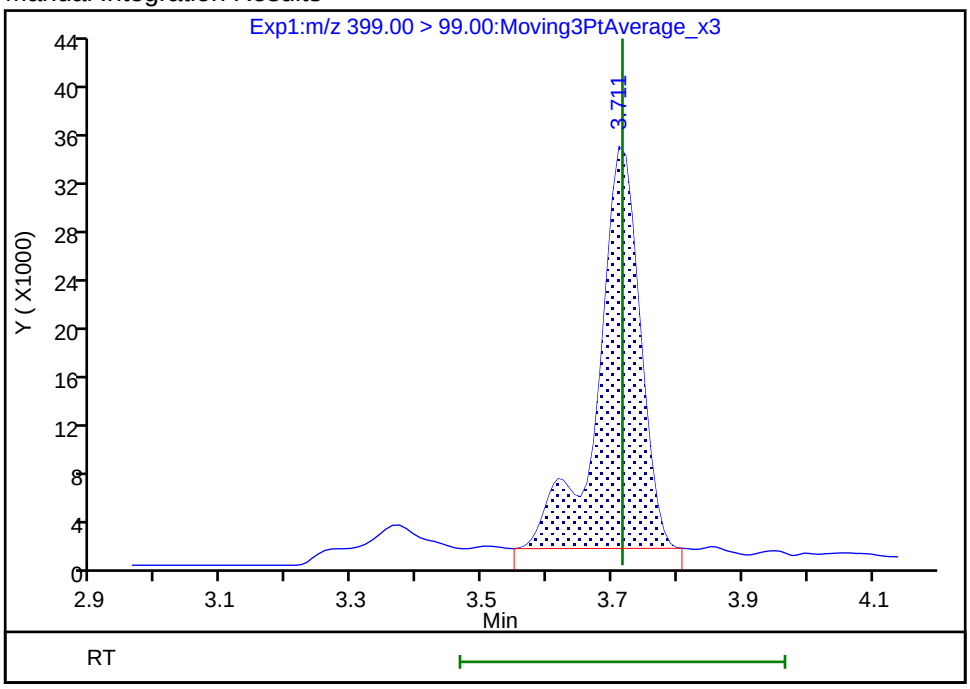
Processing Integration Results

RT: 3.71
Area: 190692
Amount: 0.540312
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 149158
Amount: 0.241219
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 05-Jun-2020 08:12:17

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

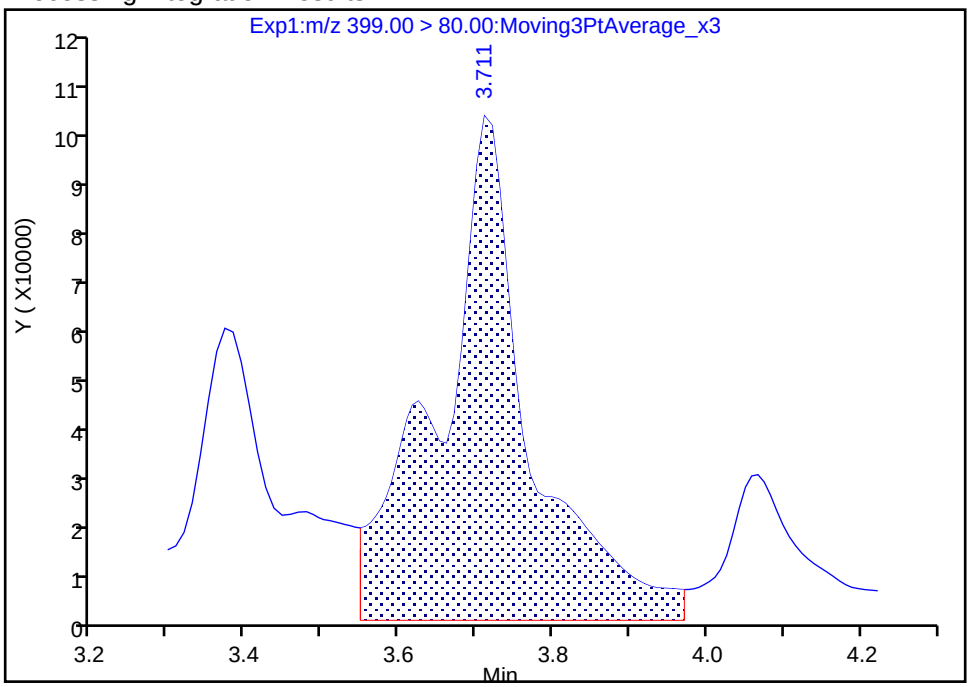
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d				
Injection Date:	04-Jun-2020 13:11:08	Instrument ID:	A18		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	16	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

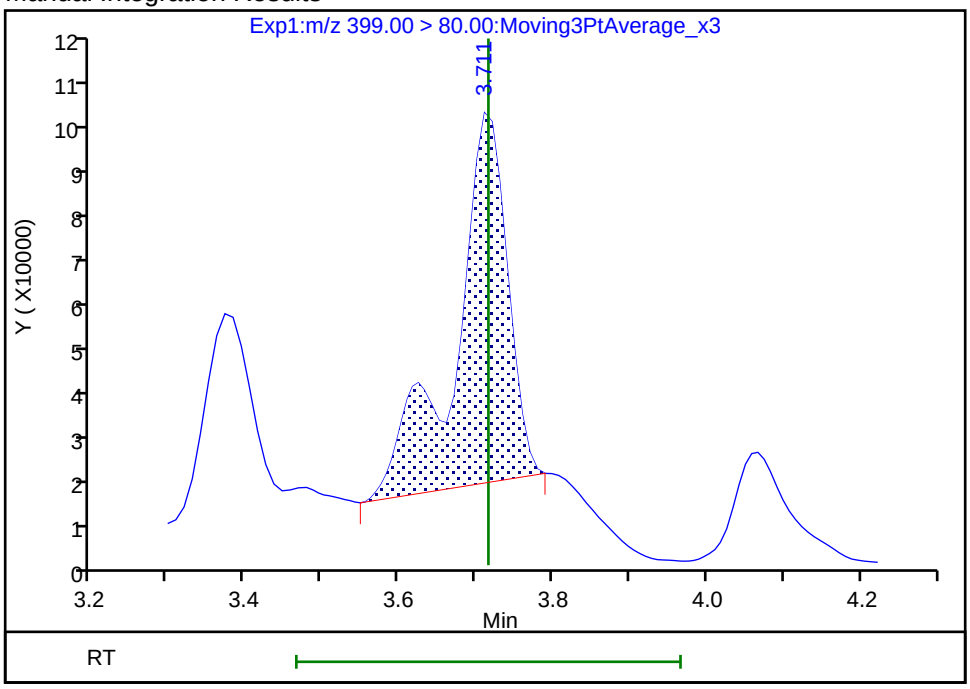
Processing Integration Results

RT: 3.71
Area: 844572
Amount: 0.540312
Amount Units: ng/ml



Manual Integration Results

RT: 3.71
Area: 377053
Amount: 0.241219
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 05-Jun-2020 08:12:21
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

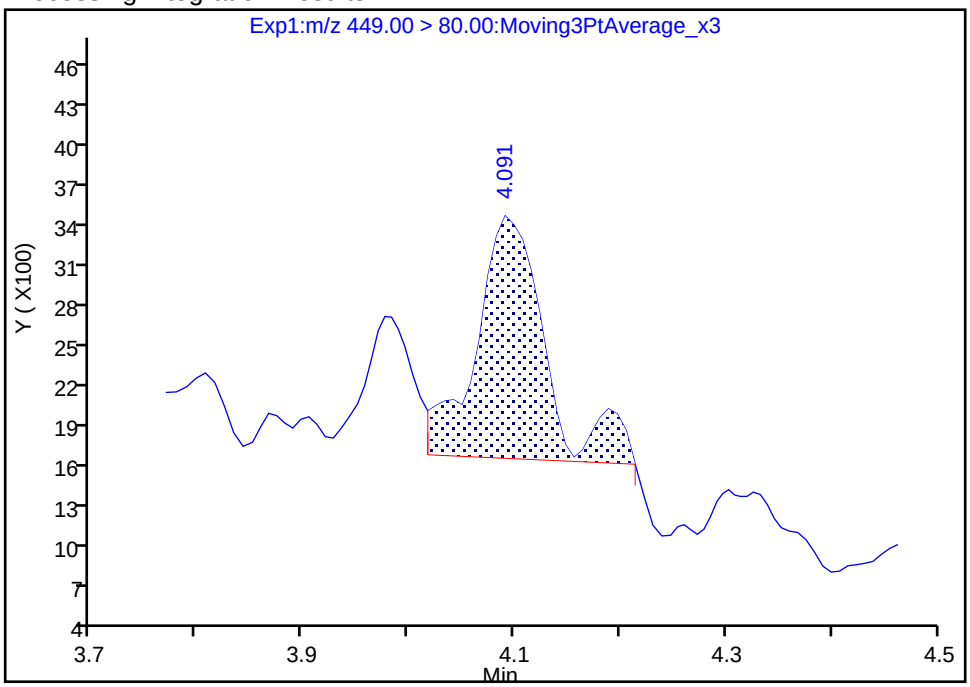
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d				
Injection Date:	04-Jun-2020 13:11:08	Instrument ID:	A18		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	16	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

24 Perfluoroheptanesulfonic acid, CAS: 375-92-8

Signal: 1

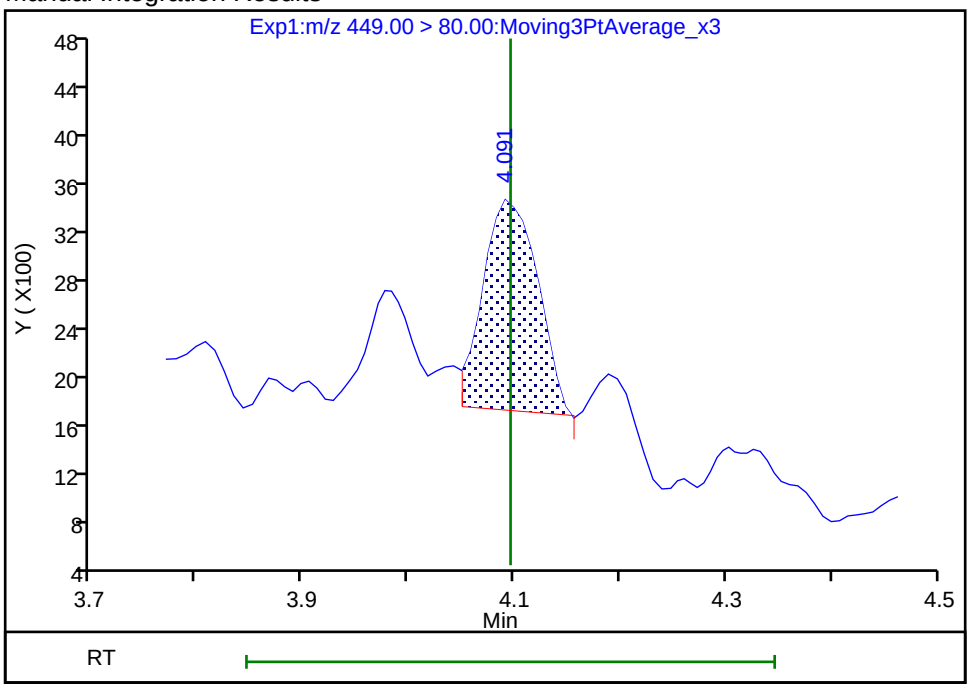
Processing Integration Results

RT: 4.09
Area: 8057
Amount: 0.009613
Amount Units: ng/ml



Manual Integration Results

RT: 4.09
Area: 6080
Amount: 0.007254
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 05-Jun-2020 08:12:36
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

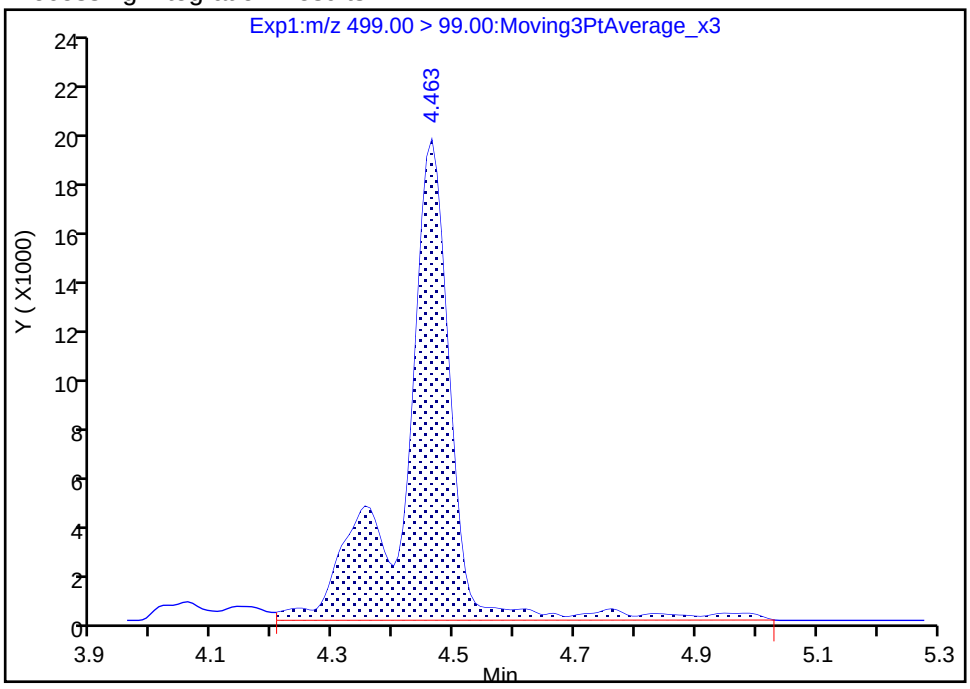
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d				
Injection Date:	04-Jun-2020 13:11:08	Instrument ID:	A18		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	16	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

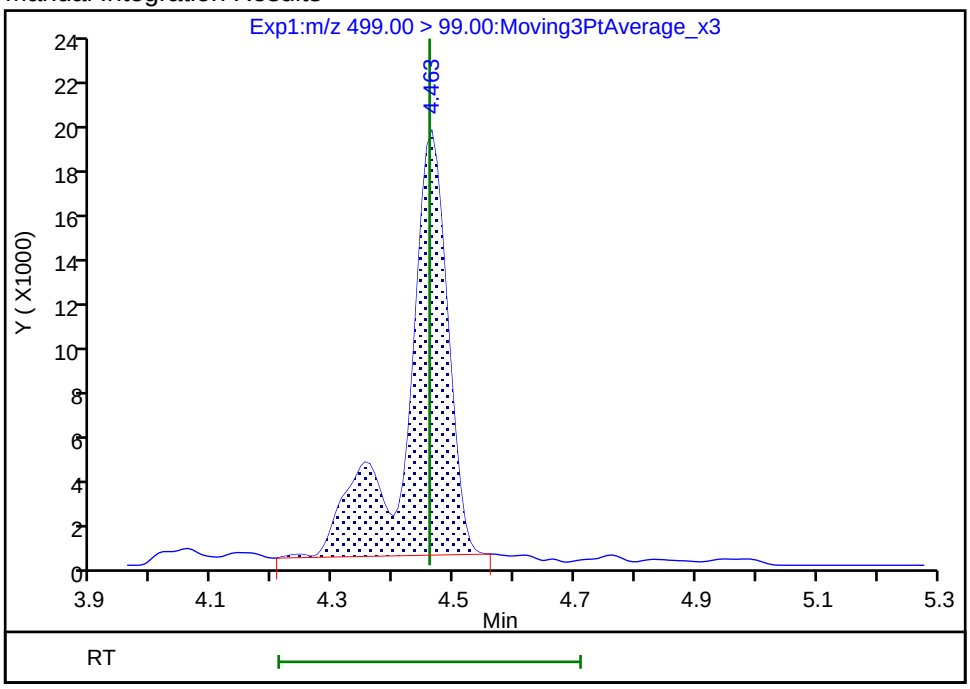
Processing Integration Results

RT: 4.46
Area: 108032
Amount: 0.497698
Amount Units: ng/ml



Manual Integration Results

RT: 4.46
Area: 91950
Amount: 0.457446
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 05-Jun-2020 08:13:22
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

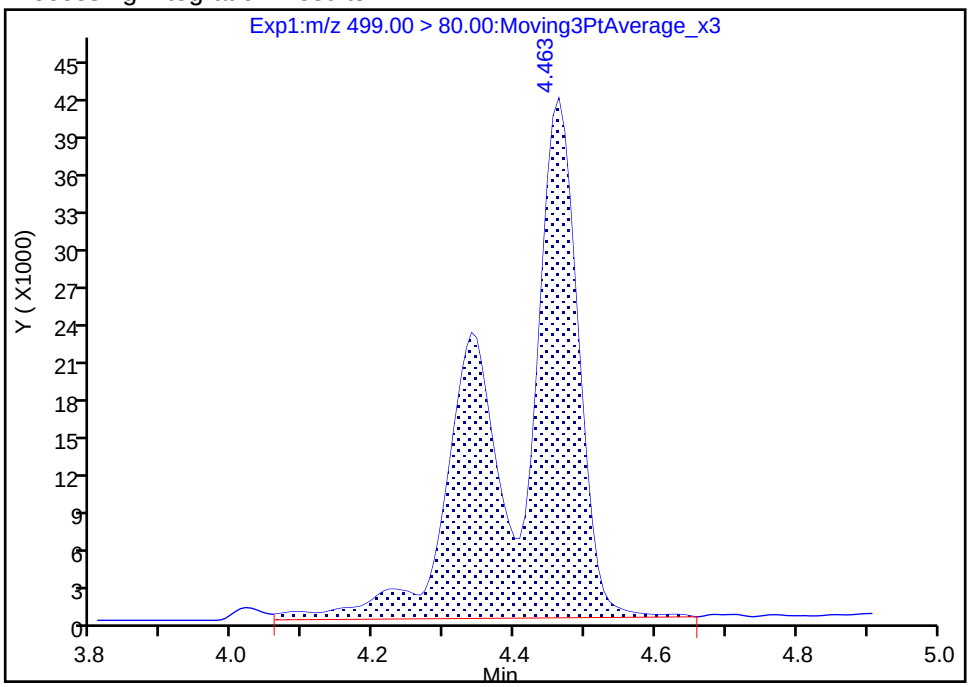
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_024.d				
Injection Date:	04-Jun-2020 13:11:08	Instrument ID:	A18		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	16	Worklist Smp#:	10
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00 mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

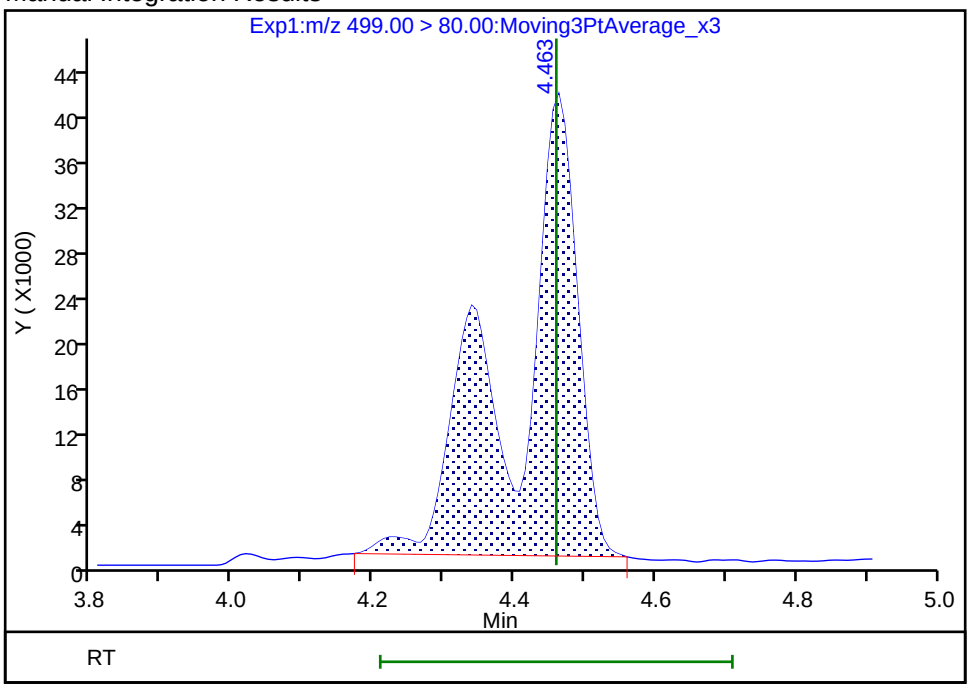
Processing Integration Results

RT: 4.46
Area: 277891
Amount: 0.497698
Amount Units: ng/ml



Manual Integration Results

RT: 4.46
Area: 255416
Amount: 0.457446
Amount Units: ng/ml



Reviewer: ruangyotsakuld, 05-Jun-2020 08:13:26

Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Client Sample ID: CELL 7 PLCRS DL Lab Sample ID: 320-61340-1 DL

Matrix: Water Lab File ID: 2020.06.05_A15_PFC_A_015.d

Analysis Method: 537 (modified) Date Collected: 05/28/2020 12:10

Extraction Method: 3535 Date Extracted: 06/03/2020 18:29

Sample wt/vol: 280.9(mL) Date Analyzed: 06/05/2020 15:50

Con. Extract Vol.: 10.00(mL) Dilution Factor: 5

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383943 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
307-24-4	Perfluorohexanoic acid (PFHxA)	370		8.9	2.6
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		89	8.5
27619-97-2	6:2 FTS	10	J	89	8.9
39108-34-4	8:2 FTS	ND		89	8.9

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00993	13C2 PFHxA	80		25-150
STL02117	d5-NEtFOSAA	132		25-150
STL02279	M2-6:2 FTS	146		25-150
STL02280	M2-8:2 FTS	195	*5	25-150

Eurofins TestAmerica, Sacramento

Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_015.d
Lims ID: 320-61340-A-1-A
Client ID: CELL 7 PLCRS
Sample Type: Client
Inject. Date: 05-Jun-2020 15:50:35 ALS Bottle#: 9 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 5.0000
Sample Info: 320-61340-a-1-a 5X
Misc. Info.: Plate: 5 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 09:53:55 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1027

First Level Reviewer: koucharis Date: 08-Jun-2020 09:53:55
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_006.d

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	2.541	2.544	-0.003	0.625	1476701	0.2329		46.6	1739	
2 Perfluorobutanoic acid										M
212.90 > 169.00	2.541	2.552	-0.011	1.000	3748554	1.37			70.4	M
D 4 13C5 PFPeA										
267.90 > 223.00	2.898	2.903	-0.005	0.713	1986416	0.3508		70.2	1054	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.898	2.903	-0.005	1.000	2971240	0.7424			20.6	
D 9 13C3 PFBS										
301.90 > 80.00	2.929	2.934	-0.005	0.721	1485785	0.3784		81.4	61.8	
6 Perfluorobutanesulfonic acid										M
298.90 > 80.00	2.929	2.944	-0.015	1.000	2694977	0.8652	Target=2.10		30.7	M
298.90 > 99.00	2.929	2.944	-0.015	1.000	1260373		2.14(1.05-3.15)		90.6	
D 11 13C2 PFHxA										
315.00 > 270.00	3.267	3.276	-0.009	0.804	2188554	0.3977		79.5	4215	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.267	3.276	-0.009	1.000	8640944	2.11	Target=15.51		218	
313.00 > 119.00	3.267	3.276	-0.009	1.000	533798		16.19(7.76-23.27)		258	
D 18 13C4 PFHpA										
367.00 > 322.00	3.668	3.667	0.001	0.903	1947033	0.4460		89.2	6194	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
16 Perfluoroheptanoic acid										M
363.00 > 319.00	3.668	3.667	0.001	1.000	536081	0.1362	Target=4.00		25.0	M
363.00 > 169.00	3.668	3.667	0.001	1.000	139559		3.84(2.00-6.00)		141	M
D 17 18O2 PFHxS										
403.00 > 84.00	3.678	3.677	0.001	0.905	775716	0.4108		86.8	3668	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.678	3.677	0.001	1.000	96176	0.0522	Target=2.83		6.4	M
399.00 > 99.00	3.678	3.677	0.001	1.000	34520		2.79(1.41-4.24)		24.0	M
D 20 M2-6:2 FTS										
429.00 > 81.00	4.048	4.032	0.016	0.996	400665	0.6947		146	446	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.048	4.032	0.016	1.000	95937	0.0579			371	
D 25 13C4 PFOA										
417.00 > 372.00	4.064	4.056	0.008	1.000	1852171	0.4692		93.8	6743	
* 23 13C2 PFOA										
415.00 > 370.00	4.064	4.056	0.008		2002450	0.5000			6560	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.064	4.056	0.008	1.000	1056819	0.2700	Target=2.99		58.9	M
413.00 > 169.00	4.064	4.056	0.008	1.000	380288		2.78(1.50-4.49)		710	M
D 27 13C4 PFOS										
503.00 > 80.00	4.420	4.405	0.015	1.088	531780	0.3628		75.9	415	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.427	4.405	0.022	1.002	102085	0.0927	Target=5.21		93.4	M
499.00 > 99.00	4.420	4.405	0.015	1.000	18978		5.38(2.60-7.81)		38.1	M
D 30 13C5 PFNA										
468.00 > 423.00	4.435	4.421	0.014	1.091	1447878	0.4792		95.8	4381	
31 Perfluorononanoic acid										
463.00 > 419.00	4.435	4.421	0.014	1.000	81991	0.0279	Target=7.46		12.6	
463.00 > 169.00	4.435	4.421	0.014	1.000	10899		7.52(3.73-11.19)		40.6	
D 33 13C8 FOSA										
506.00 > 78.00	4.774	4.752	0.022	1.175	1122689	0.3852		77.0	3399	
34 Perfluorooctanesulfonamide										M
498.00 > 78.00	4.774	4.752	0.022	1.000	21834	0.0111			52.0	M
37 Perfluorodecanoic acid										RM
513.00 > 469.00	4.774	4.752	0.022	1.000	43759	0.0169	Target=8.94		11.1	RM
513.00 > 169.00	4.774	4.752	0.022	1.000	2863		15.28(4.47-13.41)		23.6	M
D 39 13C2 PFDA										
515.00 > 470.00	4.774	4.752	0.022	1.175	1339838	0.4652		93.0	4268	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.774	4.752	0.022	1.000	15778	0.007200			175	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 38 M2-8:2 FTS										
529.00 > 81.00	4.774	4.752	0.022	1.175	643405	0.9358		195	1822	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.932	4.907	0.025	1.214	638404	0.5938		119	1553	
41 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.932	4.907	0.025	1.000	4037	0.004333			15.0	M
D 43 13C2 PFUnA										
565.00 > 520.00	5.081	5.057	0.024	1.250	1101239	0.4484		89.7	4825	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.090	5.066	0.024	1.252	721674	0.6593		132	1605	
46 N-ethylperfluorooctanesulfonamid										M
584.00 > 419.00	5.090	5.075	0.015	1.000	2793	0.002738			14.8	M
D 56 13C2 PFDoA										
615.00 > 570.00	5.364	5.331	0.033	1.320	778239	0.3577		71.5	5177	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.844	5.830	0.014	1.438	333838	0.2347		46.9	3267	

QC Flag Legend

Processing Flags

R - Failed Signal Ratio Test

Review Flags

M - Manually Integrated

Report Date: 08-Jun-2020 09:53:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_015.d

Injection Date: 05-Jun-2020 15:50:35 Instrument ID: A15

Lims ID: 320-61340-A-1-A Lab Sample ID: 320-61340-1

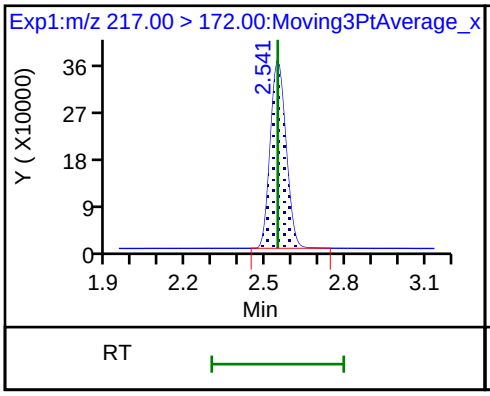
Client ID: CELL 7 PLCRS

Operator ID: SACINSTA15 ALS Bottle#: 9 Worklist Smp#: 12

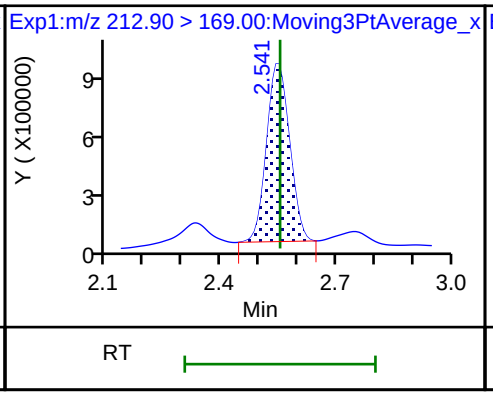
Injection Vol: 20.0 ul Dil. Factor: 5.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

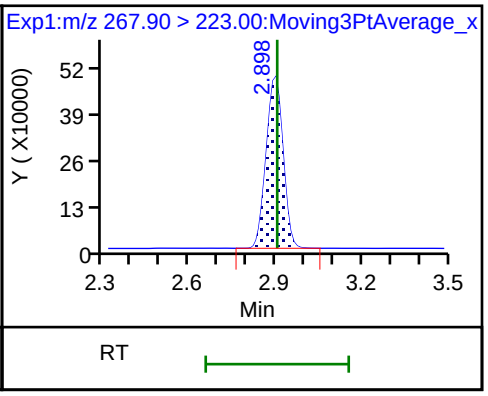
D 1 13C4 PFBA



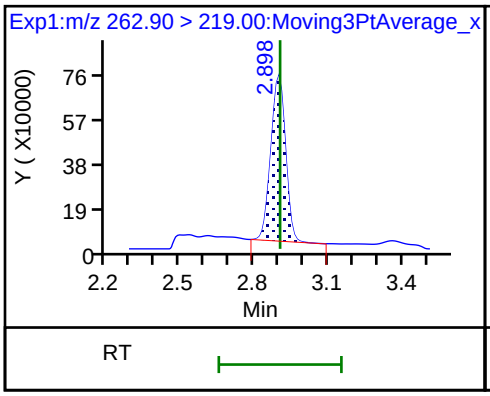
2 Perfluorobutanoic acid (M)



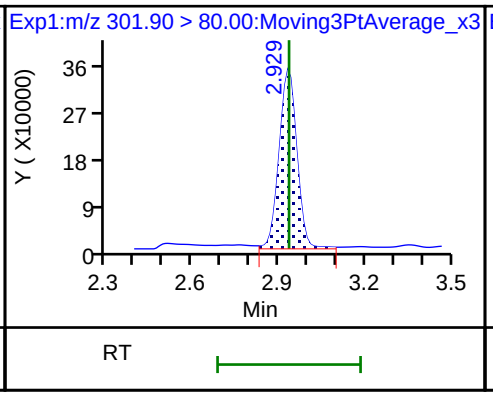
D 4 13C5 PFPeA



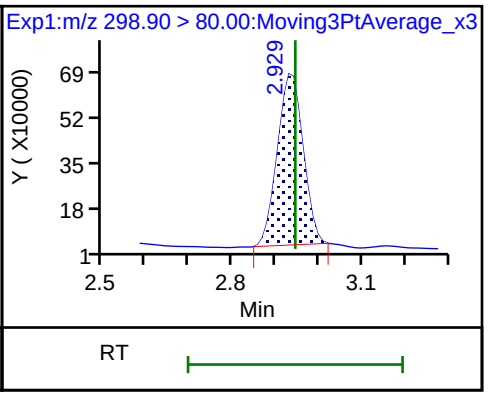
5 Perfluoropentanoic acid



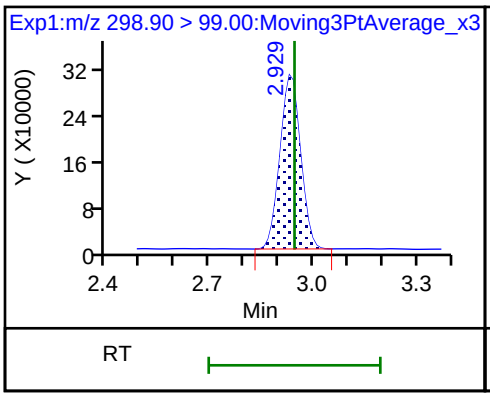
D 9 13C3 PFBS



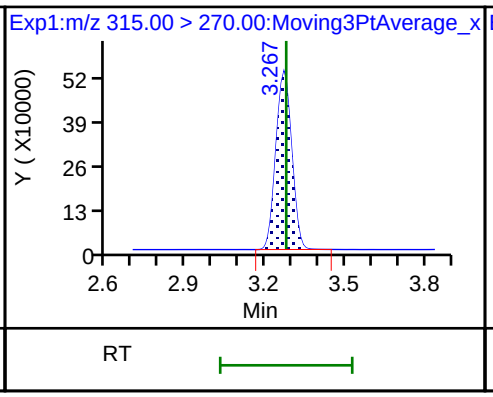
6 Perfluorobutanesulfonic acid (M)



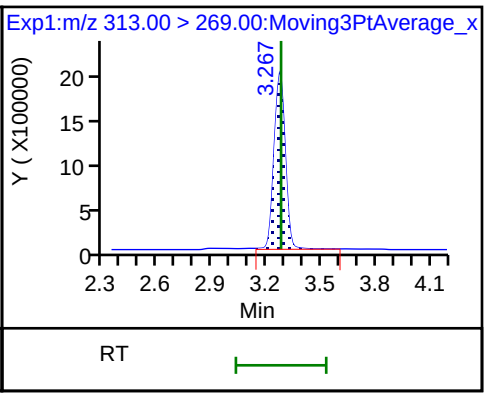
6 Perfluorobutanesulfonic acid



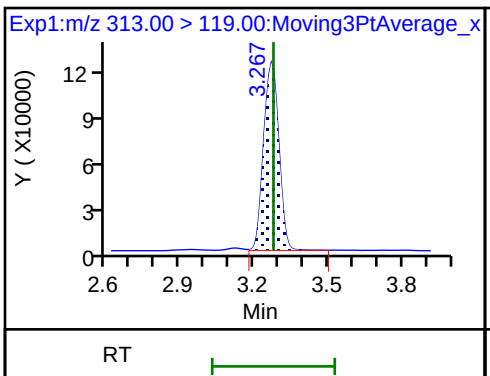
D 11 13C2 PFHxA



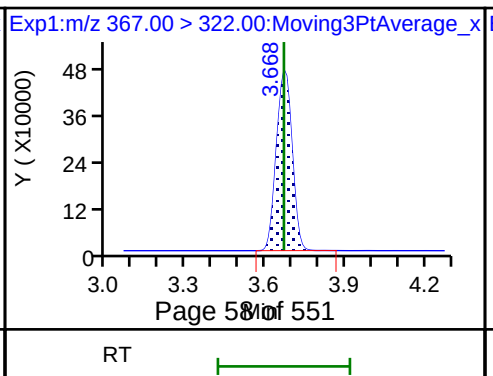
10 Perfluorohexanoic acid



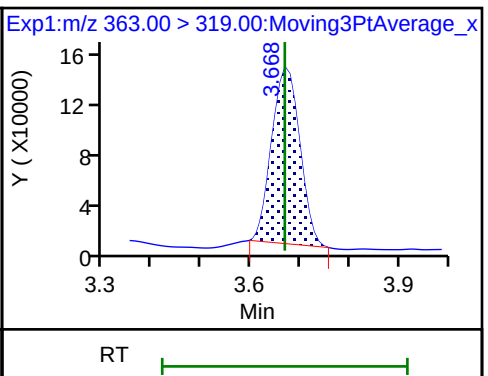
10 Perfluorohexanoic acid



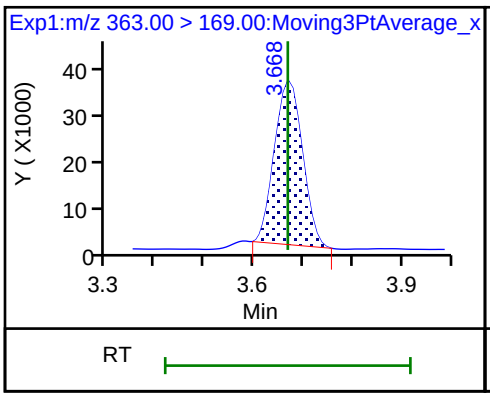
D 18 13C4 PFHpA



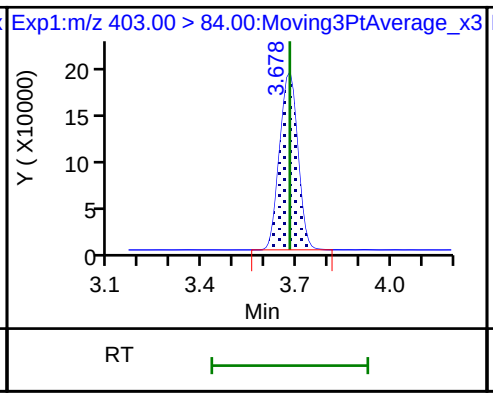
16 Perfluoroheptanoic acid (M)



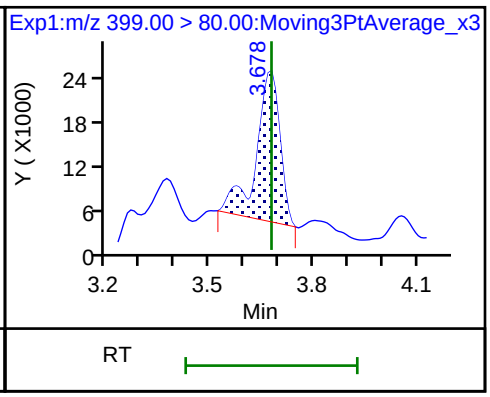
16 Perfluoroheptanoic acid (M)



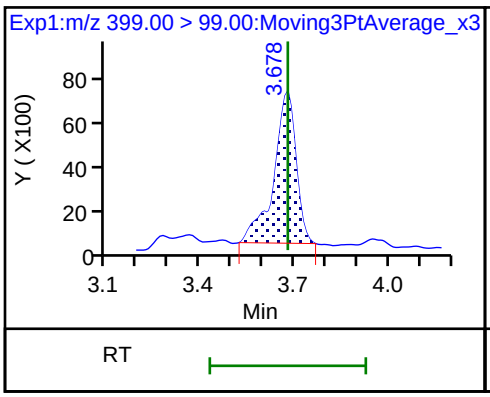
D 17 18O2 PFHxS



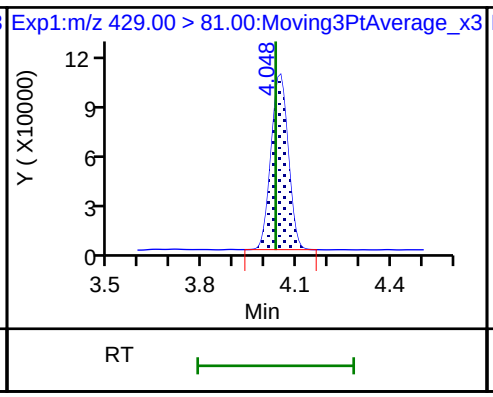
15 Perfluorohexanesulfonic acid (M)



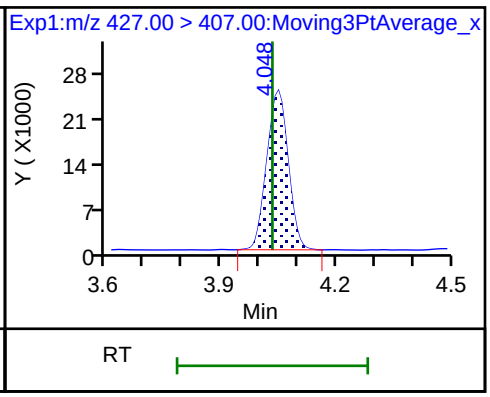
15 Perfluorohexanesulfonic acid (M)



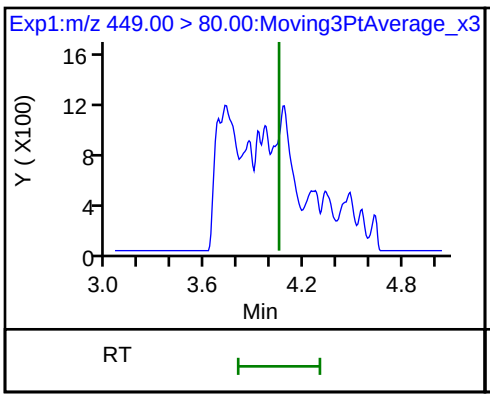
D 20 M2-6:2 FTS



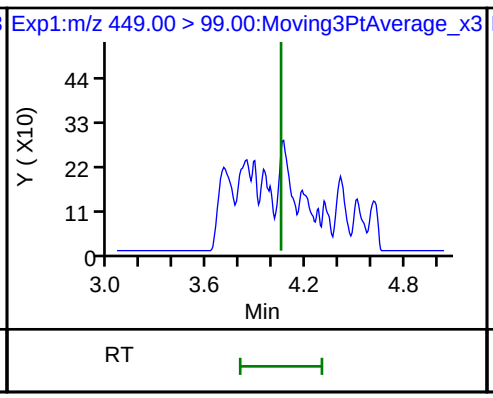
21 1H,1H,2H,2H-perfluorooctanesulfo



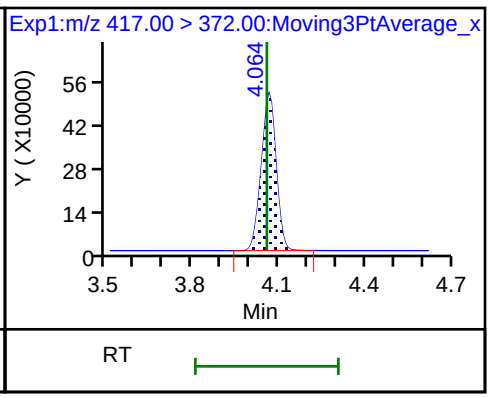
24 Perfluoroheptanesulfonic acid (ND)



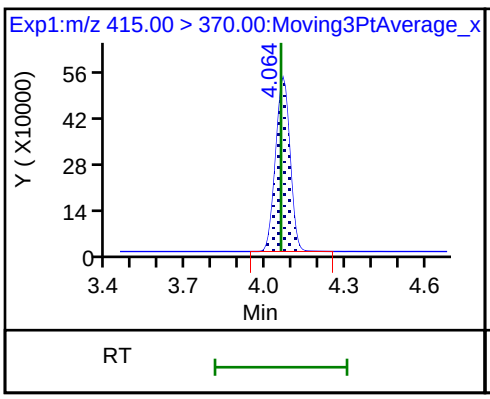
24 Perfluoroheptanesulfonic acid (ND)



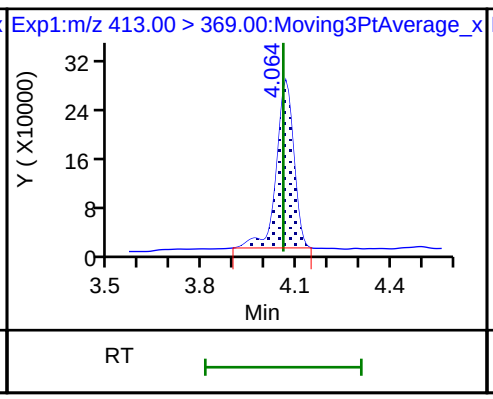
D 25 13C4 PFOA



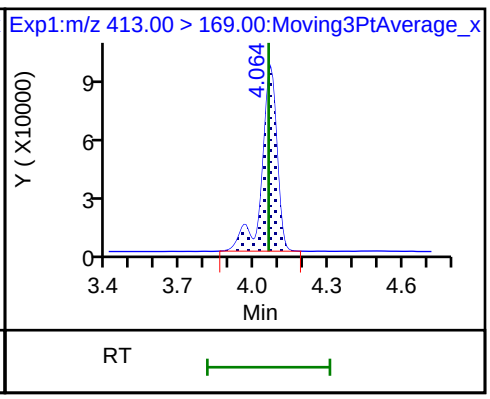
* 23 13C2 PFOA



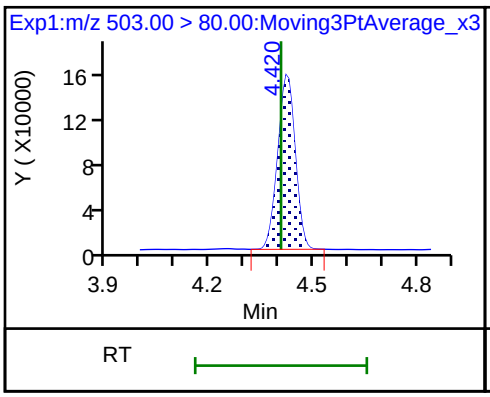
22 Perfluorooctanoic acid (M)



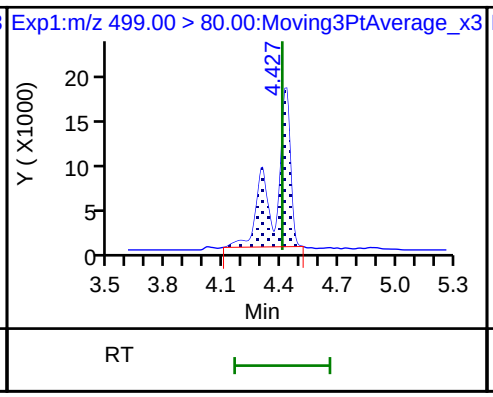
22 Perfluorooctanoic acid (M)



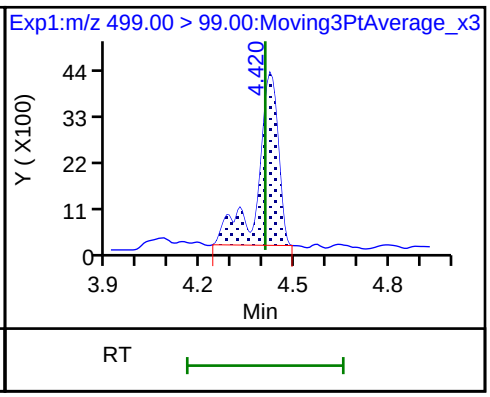
D 27 13C4 PFOS



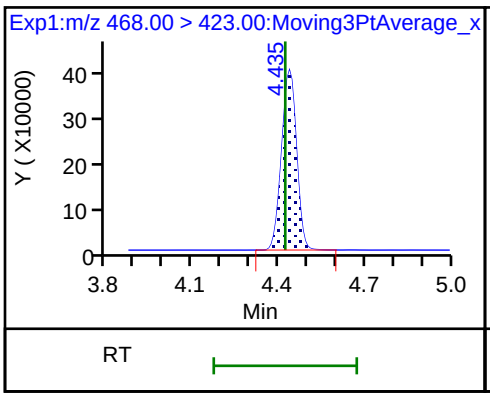
29 Perfluorooctanesulfonic acid (M)



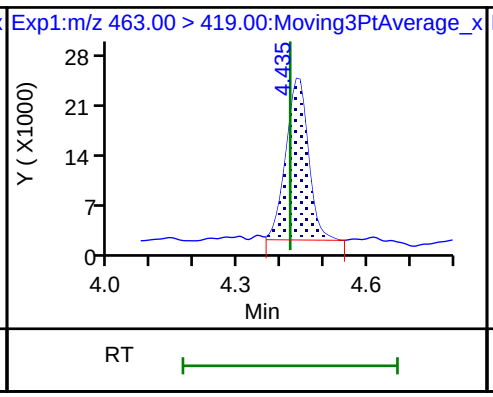
29 Perfluorooctanesulfonic acid (M)



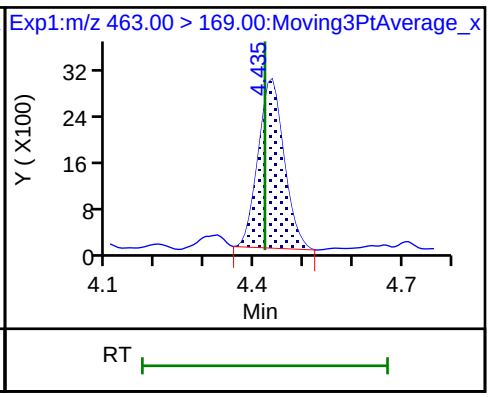
D 30 13C5 PFNA



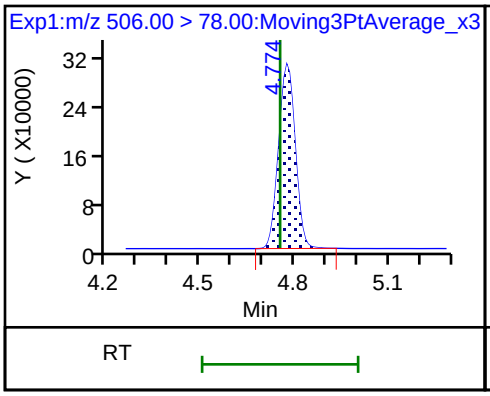
31 Perfluorononanoic acid



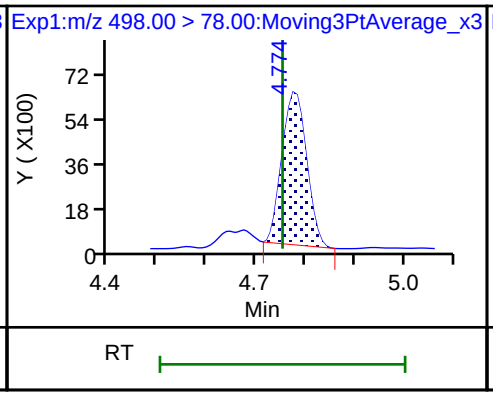
31 Perfluorononanoic acid



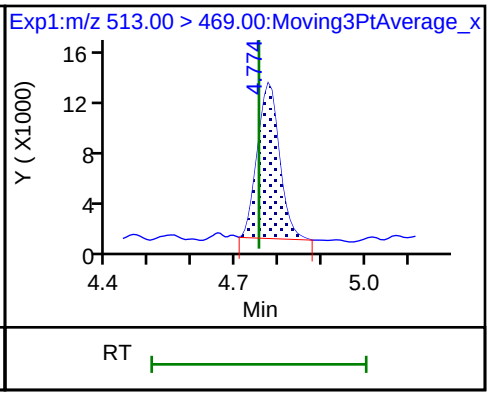
D 33 13C8 FOSA



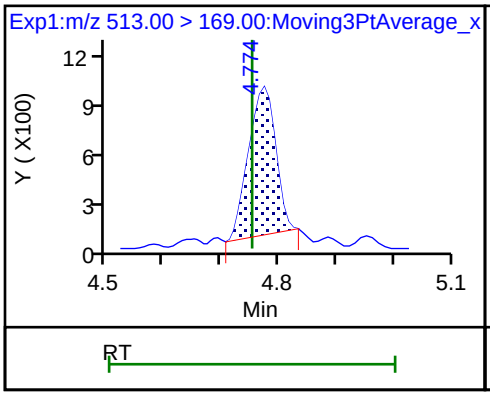
34 Perfluorooctanesulfonamide (M)



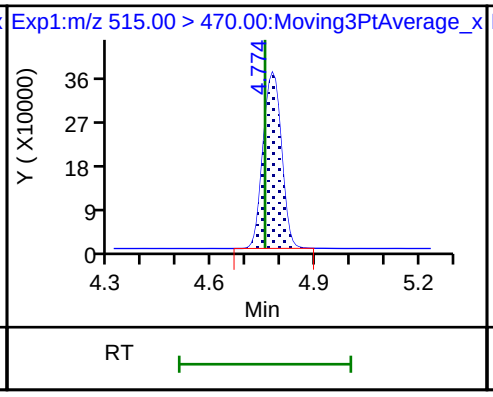
37 Perfluorodecanoic acid (M)



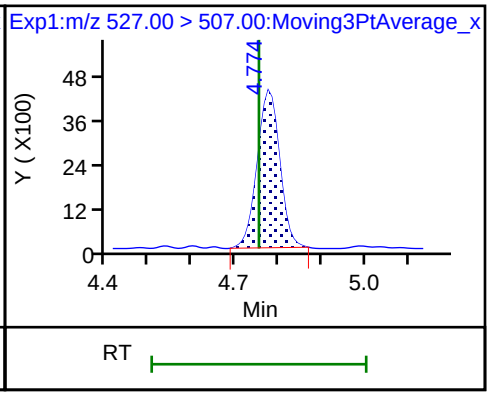
37 Perfluorodecanoic acid (M)



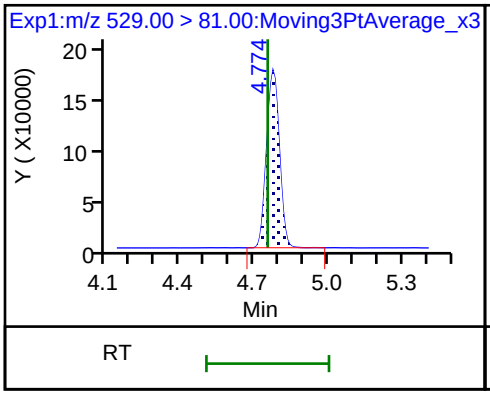
D 39 13C2 PFDA



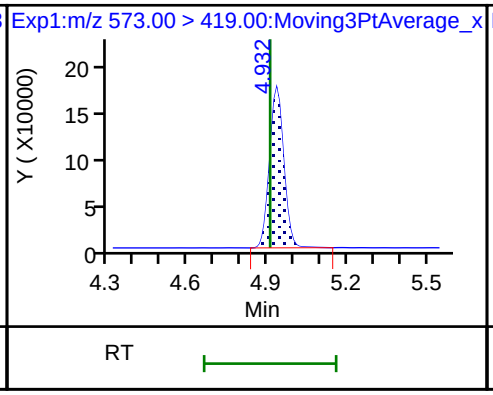
36 1H,1H,2H,2H-perfluorodecanesulfo



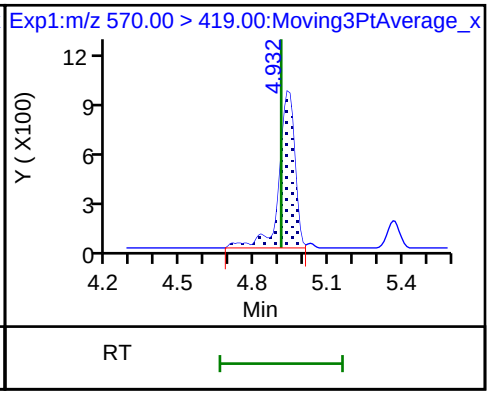
D 38 M2-8:2 FTS



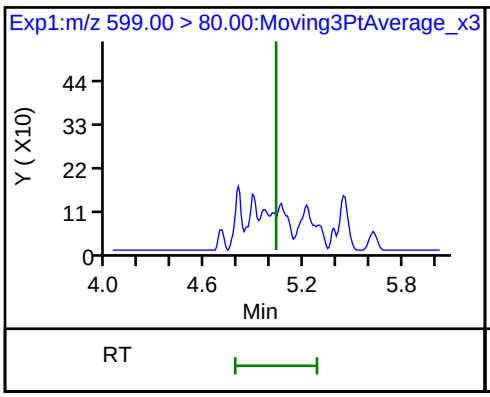
D 40 d3-NMeFOSAA



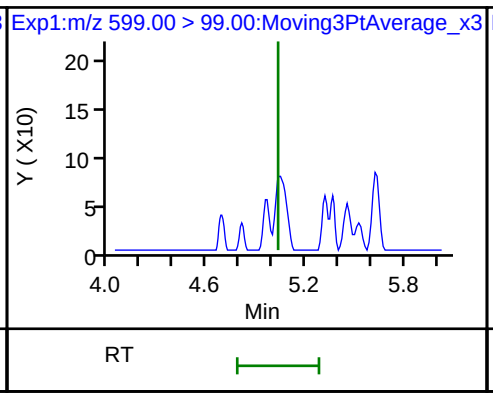
41 N-methylperfluorooctanesulfonami (M)



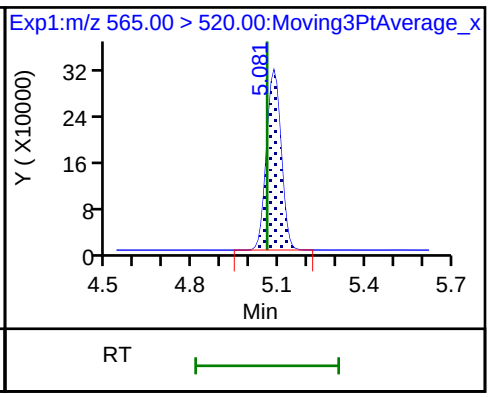
42 Perfluorodecanesulfonic acid (ND)



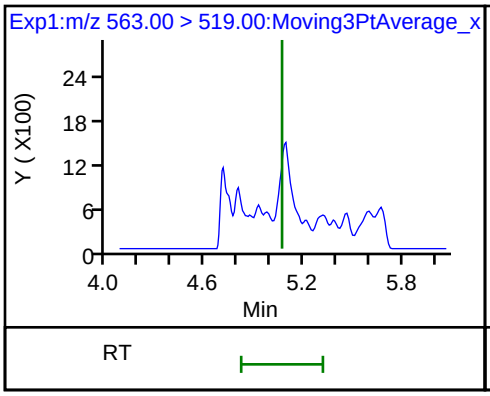
42 Perfluorodecanesulfonic acid (ND)



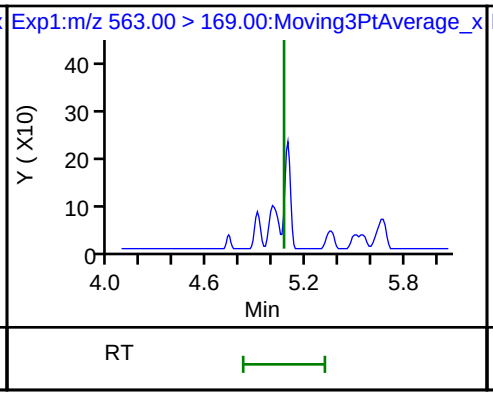
D 43 13C2 PFUnA



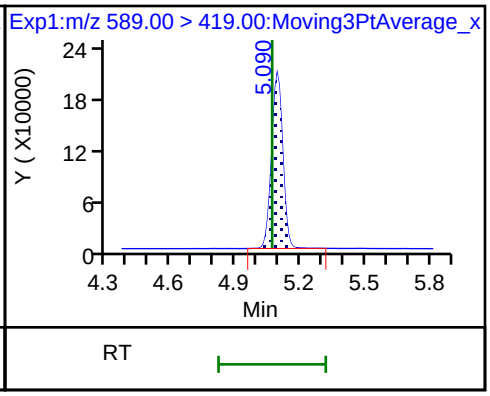
45 Perfluoroundecanoic acid (ND)



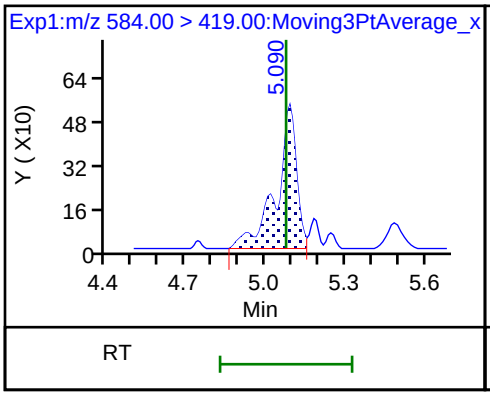
45 Perfluoroundecanoic acid (ND)



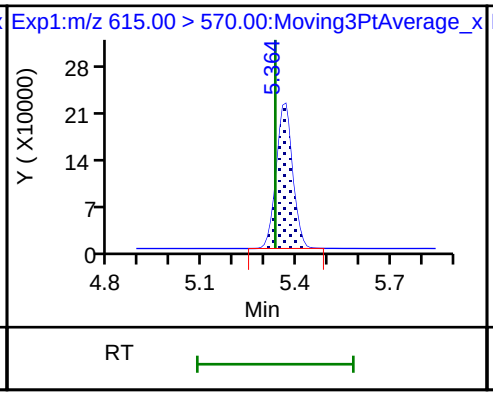
D 44 d5-NEtFOSAA



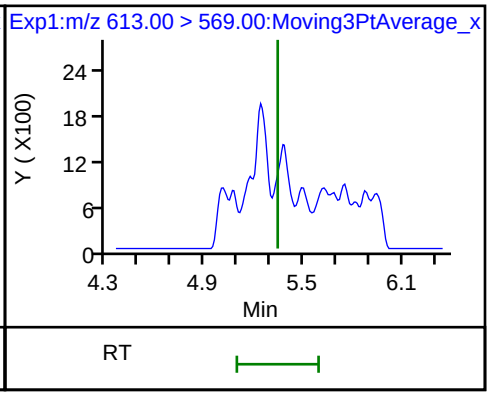
46 N-ethylperfluorooctanesulfonamid (ND)



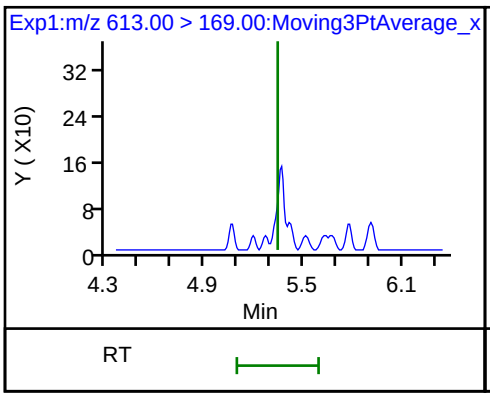
D 56 13C2 PFDoA



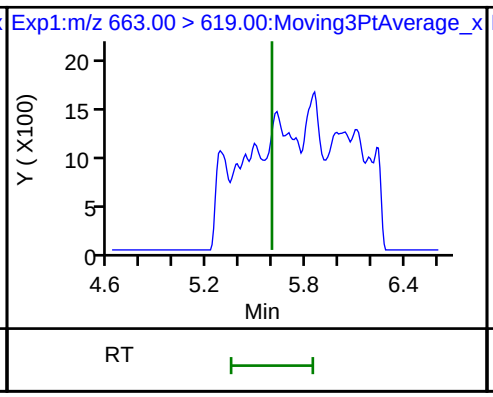
57 Perfluorododecanoic acid (ND)



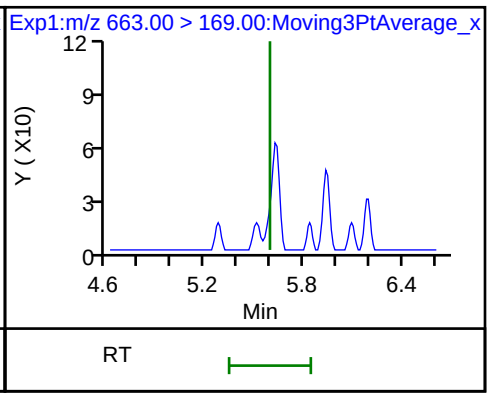
57 Perfluorododecanoic acid (ND)



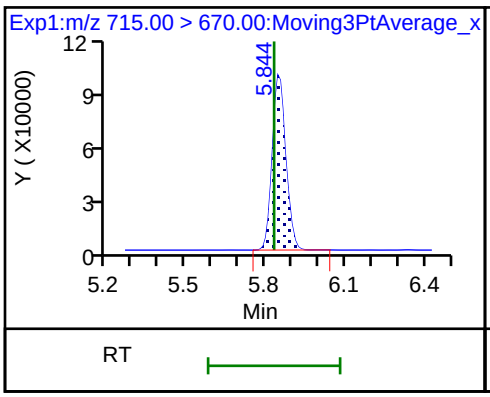
60 Perfluorotridecanoic acid (ND)



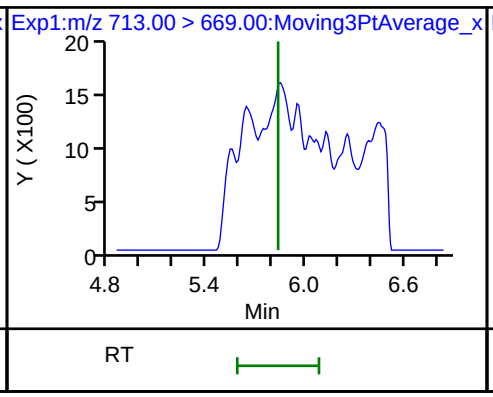
60 Perfluorotridecanoic acid (ND)



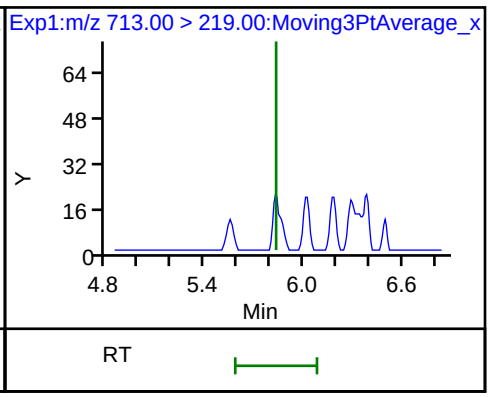
D 61 13C2 PFTeDA



62 Perfluorotetradecanoic acid (ND)



62 Perfluorotetradecanoic acid (ND)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

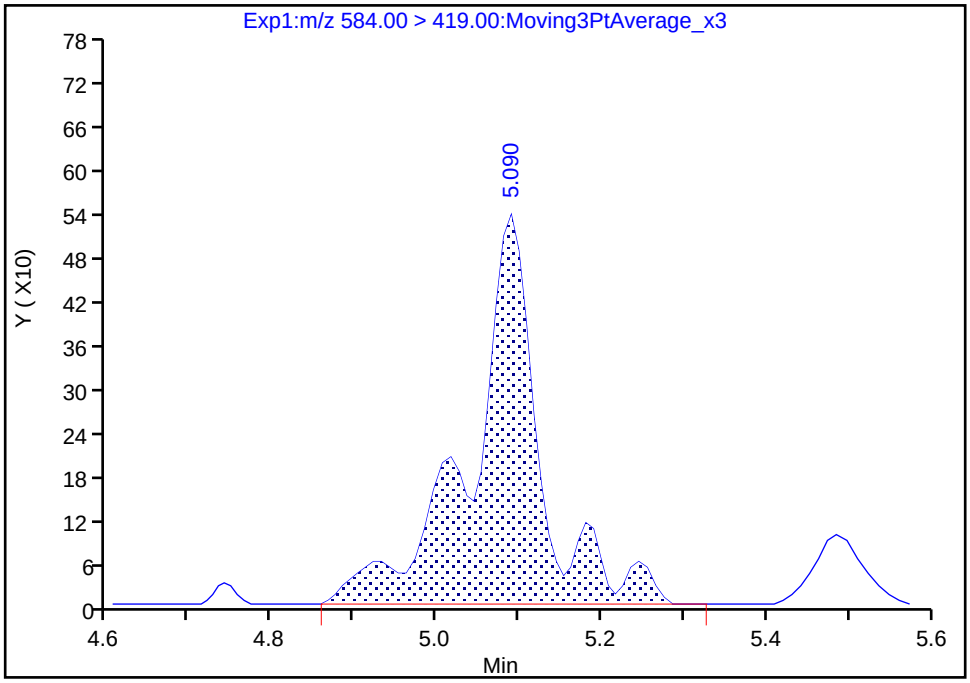
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_015.d				
Injection Date:	05-Jun-2020 15:50:35	Instrument ID:	A15		
Lims ID:	320-61340-A-1-A	Lab Sample ID:	320-61340-1		
Client ID:	CELL 7 PLCRS				
Operator ID:	SACINSTA15	ALS Bottle#:	9	Worklist Smp#:	12
Injection Vol:	20.0 ul	Dil. Factor:	5.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

46 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

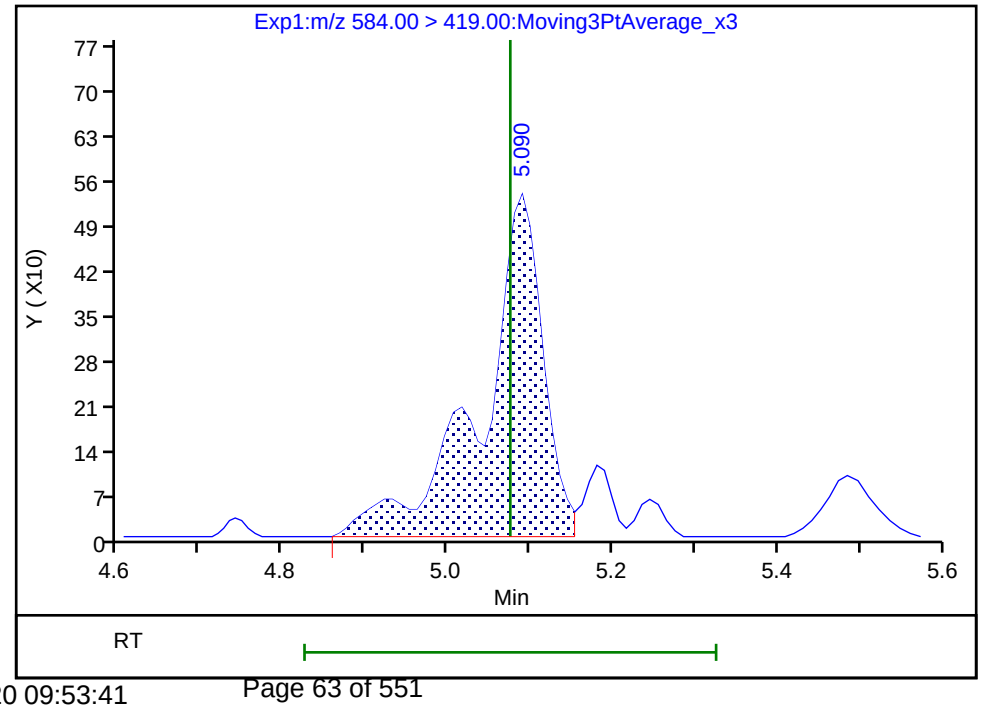
Processing Integration Results

RT: 5.09
Area: 3175
Amount: 0.003113
Amount Units: ng/ml



Manual Integration Results

RT: 5.09
Area: 2793
Amount: 0.002738
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 09:53:41

Audit Action: Manually Integrated Audit Reason: Baseline

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383313

SDG No.: 70132489

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-383313/2	2020.06.04_A15_PFC_ICAL_A_004.d
Level 2	IC 320-383313/3	2020.06.04_A15_PFC_ICAL_A_005.d
Level 3	IC 320-383313/4	2020.06.04_A15_PFC_ICAL_A_006.d
Level 4	IC 320-383313/5	2020.06.04_A15_PFC_ICAL_A_007.d
Level 5	IC 320-383313/6	2020.06.04_A15_PFC_ICAL_A_008.d
Level 6	IC 320-383313/7	2020.06.04_A15_PFC_ICAL_A_009.d
Level 7	IC 320-383313/8	2020.06.04_A15_PFC_ICAL_A_010.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid (PFBA)	0.8709 0.9638	0.8756 0.9761	0.8923	0.9495	0.9535	AveID		0.9260				4.8		35.0			
Perfluoropentanoic acid (PFPeA)	1.1935 0.9805	1.0291 0.9794	0.9557	0.9561	0.9575	AveID		1.0074				8.5		35.0			
Perfluorobutanesulfonic acid (PFBS)	0.9442 1.0308	0.9591 1.0073	0.9404	0.9551	0.9872	AveID		0.9749				3.5		35.0			
4:2 FTS	2.1261 2.3790	2.1158 2.3896	2.1001	2.3393	2.3370	AveID		2.2553				5.9		35.0			
Perfluorohexanoic acid (PFHxA)	1.0361 0.9239	0.9374 0.9063	0.9339	0.9094	0.9154	AveID		0.9375				4.8		35.0			
Perfluoropentanesulfonic acid (PFPeS)	0.6728 0.7572	0.6977 0.7690	0.7357	0.7331	0.7690	AveID		0.7335				5.0		50.0			
HFPO-DA (GenX)	0.8363 0.9180	0.8377 0.9640	0.8904	0.9761	0.9715	AveID		0.9134				6.6		35.0			
Perfluoroheptanoic acid (PFHpA)	0.9402 1.0071	1.0140 0.9875	1.0193	1.0603	1.0476	AveID		1.0109				3.9		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3787 1.0411	1.1774 1.1082	1.0205	1.0479	1.0872	AveID		1.1230				11.1		35.0			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	7.0906 7.4945	6.9361 7.4829	7.3347	7.6829	7.2987	AveID		7.3315				3.5		50.0			
6:2 FTS	1.9168 2.0403	1.8359 2.0535	1.9744	1.9724	1.9653	AveID		1.9655				3.8		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.0350 1.1369	1.0389 1.1116	1.1007	1.1037	1.1090	AveID		1.0908				3.5		50.0			
Perfluorooctanoic acid (PFOA)	1.3300 0.9552	1.0422 0.9903	0.9441	1.0873	1.0468	AveID		1.0566				12.4		35.0			
Perfluorooctanesulfonic acid (PFOS)	1.0345 1.0164	0.9501 1.0272	0.9413	0.9621	0.9943	AveID		0.9894				3.9		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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383313

SDG No.: 70132489

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorononanoic acid (PFNA)	1.0070 0.9970	0.9689 1.1717	0.9062	1.0041	1.0445	AveID		1.0142				8.0		35.0			
F-53B Major	2.5643 2.8578	2.4781 2.9156	2.6470	2.8157	2.8278	AveID		2.7295				6.1		50.0			
Perfluorononanesulfonic acid (PFNS)	0.6926 0.8230	0.8292 0.7965	0.7900	0.8304	0.8292	AveID		0.7987				6.2		50.0			
Perfluorooctanesulfonamide (FOSA)	0.8734 0.9115	0.8529 0.9151	0.8451	0.8620	0.8884	AveID		0.8783				3.2		35.0			
Perfluorodecanoic acid (PFDA)	0.9806 0.9594	0.9904 0.8981	1.0773	0.9900	0.8646	AveID		0.9658				7.2		35.0			
8:2 FTS	1.5717 1.6585	1.5796 1.6044	1.5858	1.6560	1.7645	AveID		1.6315				4.2		35.0			
NMeFOSAA	0.6647 0.8178	0.6551 0.8261	0.6973	0.7051	0.7419	AveID		0.7297				9.5		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.7146 0.7106	0.6635 0.7028	0.6740	0.7185	0.7222	AveID		0.7009				3.3		50.0			
Perfluoroundecanoic acid (PFUnA)	+++++ 0.7407	0.5590 0.7786	0.6999	0.8139	0.7363	AveID		0.7214				12.3		35.0			
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0.6911 0.8091	0.6465 0.8067	0.6488	0.6728	0.6718	AveID		0.7067				10.0		35.0			
F-53B Minor	2.3252 2.7430	2.4822 2.7287	2.5151	2.6237	2.6379	AveID		2.5794				5.8		50.0			
NMeFOSE	0.9299 1.2166	1.0272 1.1436	1.0039	1.0896	0.9154	AveID		1.0466				10.6		35.0			
NMeFOSA	0.8625 0.9665	0.8265 0.9400	0.8937	1.0539	1.0480	AveID		0.9416				9.3		35.0			
Perfluorododecanoic acid (PFDoA)	0.9549 1.0627	0.9712 0.9170	0.9189	0.9247	1.1214	AveID		0.9816				8.1		35.0			
10:2 FTS	1.2583 1.3448	1.1866 1.3995	1.1615	1.2581	1.3977	AveID		1.2866				7.5		50.0			
NEtFOSE	0.8493 1.0165	1.0035 1.0726	1.1133	1.0827	1.0283	AveID		1.0238				8.4		35.0			
NEtFOSA	0.8404 0.9794	0.9305 0.9951	1.0494	1.1064	1.1130	AveID		1.0020				9.7		35.0			
Perfluorododecanesulfonic acid (PFDoS)	0.2128 0.2682	0.2151 0.2627	0.2292	0.2549	0.2614	AveID		0.2435				9.7		50.0			
Perfluorotridecanoic acid (PFTriA)	0.9632 0.8869	0.6535 0.7192	0.7268	0.7200	0.8540	AveID		0.7891				14.3		50.0			
Perfluorotetradecanoic acid (PFTeA)	1.0766 0.8658	0.9453 0.9086	0.9730	1.2321	0.9990	AveID		1.0001				12.2		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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383313

SDG No.: 70132489

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.6718 0.8308	1.1889 +++++	0.9296	1.0061	0.7831	L2ID	0.0198	0.8516							0.9900		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.5144 0.4468	0.4255 0.5655	0.4712	0.5788	0.4418	AveID		0.4920				12.5		50.0			
13C4 PFBA	1.5056 1.6894	1.5938 1.6858	1.5660	1.4987	1.5412	Ave		1.5829				5.0		50.0			
13C5 PFPeA	1.3557 1.4858	1.4665 1.4473	1.3736	1.3803	1.3893	Ave		1.4141				3.6		50.0			
13C3 PFBS	0.9649 1.0732	0.9689 1.0039	0.9498	0.9474	0.9543	Ave		0.9803				4.6		50.0			
M2-4:2 FTS	0.1242 0.1431	0.1327 0.1361	0.1301	0.1248	0.1223	Ave		0.1305				5.7		50.0			
13C2 PFHxA	1.2966 1.4269	1.3915 1.4278	1.3796	1.3376	1.3580	Ave		1.3740				3.5		50.0			
13C3 HFPO-DA	0.2995 0.3418	0.3170 0.3328	0.3136	0.2895	0.3073	Ave		0.3145				5.8		50.0			
13C4 PFHpA	1.0774 1.1133	1.1345 1.1553	1.0411	1.0519	1.0565	Ave		1.0900				4.1		50.0			
18O2 PFHxS	0.4489 0.5074	0.4721 0.4897	0.4643	0.4594	0.4587	Ave		0.4715				4.3		50.0			
M2-6:2 FTS	0.1445 0.1436	0.1541 0.1354	0.1485	0.1431	0.1388	Ave		0.1440				4.3		50.0			
13C4 PFOA	1.0019 0.9950	0.9939 0.9564	1.0065	0.9619	0.9837	Ave		0.9856				2.0		50.0			
13C4 PFOS	0.3468 0.3964	0.3616 0.3861	0.3553	0.3507	0.3647	Ave		0.3660				5.1		50.0			
13C5 PFNA	0.7726 0.8019	0.7550 0.6887	0.7825	0.7655	0.7144	Ave		0.7544				5.3		50.0			
13C8 FOSA	0.7152 0.7610	0.7534 0.6990	0.7291	0.7260	0.7110	Ave		0.7278				3.1		50.0			
13C2 PFDA	0.6921 0.7541	0.7120 0.6605	0.6957	0.7407	0.7790	Ave		0.7192				5.7		50.0			
M2-8:2 FTS	0.1723 0.1787	0.1872 0.1603	0.1786	0.1693	0.1552	Ave		0.1717				6.5		50.0			
d3-NMeFOSAA	0.2596 0.2856	0.2646 0.2946	0.2555	0.2590	0.2603	Ave		0.2685				5.7		50.0			
13C2 PFUnA	0.6198 0.6266	0.6602 0.5575	0.6278	0.6073	0.5931	Ave		0.6132				5.2		50.0			
d5-NEtFOSAA	0.2669 0.2825	0.2854 0.2747	0.2729	0.2614	0.2695	Ave		0.2733				3.1		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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383313

SDG No.: 70132489

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
d7-N-MeFOSE-M	0.1789 0.1744	0.1839 0.1942	0.1785	0.1864	0.1870	Ave		0.1833				3.6		50.0			
d-N-MeFOSA-M	0.2071 0.2676	0.2203 0.2676	0.2128	0.2114	0.2231	Ave		0.2300				11.4		50.0			
13C2 PFDoA	0.5299 0.5251	0.5770 0.5287	0.5628	0.5885	0.4906	Ave		0.5432				6.3		50.0			
d9-N-EtFOSE-M	0.2246 0.2470	0.2188 0.2507	0.1994	0.2137	0.2177	Ave		0.2246				8.2		50.0			
d-N-EtFOSA-M	0.2089 0.2722	0.2257 0.2713	0.2137	0.2130	0.2292	Ave		0.2334				11.6		50.0			
13C2 PFTeDA	0.3193 0.4061	0.3482 0.3870	0.3702	0.3099	0.3450	Ave		0.3551				9.8		50.0			
13C2 PFHxDA	0.2952 0.3274	0.3293 0.2561	0.2776	0.2429	0.3323	Ave		0.2944				12.5		50.0			
13C8 PFOA	0.6239 0.6266	0.6190 0.6105	0.6248	0.5361	0.5939	Ave		0.6050				5.4		50.0			
13C8 PFOS	0.1212 0.1367	0.1254 0.1252	0.1206	0.1166	0.1255	Ave		0.1244				5.1		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
RESPONSE AND CONCENTRATION

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383313

SDG No.: 70132489

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-383313/2	2020.06.04_A15_PFC_ICAL_A_004.d
Level 2	IC 320-383313/3	2020.06.04_A15_PFC_ICAL_A_005.d
Level 3	IC 320-383313/4	2020.06.04_A15_PFC_ICAL_A_006.d
Level 4	IC 320-383313/5	2020.06.04_A15_PFC_ICAL_A_007.d
Level 5	IC 320-383313/6	2020.06.04_A15_PFC_ICAL_A_008.d
Level 6	IC 320-383313/7	2020.06.04_A15_PFC_ICAL_A_009.d
Level 7	IC 320-383313/8	2020.06.04_A15_PFC_ICAL_A_010.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid (PFBA)		AveID	84034 17523720	162849 34571646	843031	3470137	8607524	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	103688 15678192	176111 29781182	792080	3218181	7792020	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	51611 10524971	95864 18781556	476364	1950584	4878139	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	15810 3421017	30594 6380089	153907	665002	1563862	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	86092 14187904	152223 27188259	777330	2966517	7282094	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	39024 8202928	73997 15215091	395420	1588606	4032245	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	16050 3377071	30986 6739451	168499	689188	1748448	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid (PFHpA)		AveID	64911 12066452	134247 23968023	640244	2719950	6482928	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	36094 5172852	59028 10374885	260169	1068371	2657927	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)		AveID	148456 30115737	275714 57185309	1480984	6190367	14689211	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	16828 2989847	31305 5537814	167725	652691	1514283	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	21900 4617036	41734 8584960	224605	898706	2255726	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanoic acid (PFOA)		AveID	85389 10227799	120876 19898971	573324	2550630	6031818	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	21338 4023416	37206 7733680	187236	763648	1971399	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	49862 8604297	85362 16953333	427845	1874281	4370924	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383313

SDG No.: 70132489

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
F-53B Major		AveID	53119 11361857	97462 22044857	528793	2244602	5630815	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorononanesulfonic acid (PFNS)		AveID	14777 3370318	33593 6203149	162570	681848	1700810	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorooctanesulfonamide (FOSA)		AveID	40033 7465140	74988 13439661	371735	1526209	3700238	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanoic acid (PFDA)		AveID	43490 7786365	82296 12463138	452204	1788273	3945087	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	16627 3056319	33061 5175859	163721	654827	1536987	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
NMeFOSAA		AveID	11058 2513798	20230 5113067	107484	445393	1131231	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	15310 2922028	26992 5496367	139279	592449	1487380	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluoroundecanoic acid (PFUnA)		AveID	+++++ 4994985	43073 9119579	265127	1205393	2558072	+++++ 5.00	0.0500 10.0	0.250	1.00	2.50
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)		AveID	11820 2459976	21533 4655395	106821	428790	1060515	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	48683 11022366	98667 20853238	507842	2113979	5308994	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
NMeFOSE		AveID	10662 2283757	22047 4664590	108107	495182	1002590	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NMeFOSA		AveID	11445 2783078	21251 5283834	114727	543254	1369719	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)		AveID	32430 6005489	65400 10185088	312046	1327041	3222984	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	13395 2493812	24991 4543056	120671	500599	1225099	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
NEtFOSE		AveID	12226 2702114	25624 5649039	133940	564377	1311216	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NEtFOSA		AveID	11250 2868640	24512 5671182	135323	574700	1494414	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanesulfonic acid (PFDoS)		AveID	4578 1107494	8788 2062682	47563	211017	540600	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	32713 5012084	44007 7988248	246788	1033363	2454288	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	22029 3783988	38411 7387808	217351	931047	2018998	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	31624 2927071	45682 +++++	155680	595962	1524467	0.0250 5.00	0.0500 +++++	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	9731 1574210	16349 3042541	78914	342848	859961	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383313

SDG No.: 70132489

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFBA	13PF OA	Ave	9648681 9090663	9299542 8854156	9448270	9136872	9027703	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	8688019 7995197	8556695 7601881	8287569	8414937	8137666	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	5750434 5370688	5257827 4903914	5329078	5371544	5198591	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	743608 718991	722978 667497	732852	710696	669176	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PF OA	Ave	8309413 7678162	8119512 7499391	8323323	8154944	7954661	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	1919188 1839459	1849556 1747744	1892293	1765106	1799762	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	6904259 5990467	6619945 6067869	6280993	6413151	6188566	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	2721638 2582641	2605903 2433067	2650257	2649716	2541523	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	879787 734246	854355 675627	851271	829038	772132	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	6420434 5354025	5799255 5023412	6072440	5864633	5761918	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	2124805 2039057	2017066 1938926	2049165	2044276	2042488	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	4951399 4315211	4405249 3617340	4721149	4666713	4184898	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	4583532 4095028	4396116 3671593	4398715	4426342	4164895	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	4435130 4057879	4154723 3469185	4197427	4515884	4562785	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	1057870 921429	1046506 806507	1032421	988595	871076	2.40 2.40	2.40 2.40	2.40	2.40	2.40
d3-NMeFOSAA	13PF OA	Ave	1663604 1536928	1544095 1547401	1541416	1579238	1524709	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	3972161 3371659	3852340 2928045	3787817	3702710	3474271	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	1710239 1520185	1665421 1442788	1646406	1593419	1578577	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d7-N-MeFOSE-M	13PF OA	Ave	5733079 4693030	5365729 5098711	5384514	5680746	5476298	12.5 12.5	12.5 12.5	12.5	12.5	12.5
d-N-MeFOSA-M	13PF OA	Ave	1327001 1439720	1285651 1405336	1283749	1288669	1307025	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDoA	13PF OA	Ave	3396149 2825569	3366889 2776822	3395718	3587872	2873956	2.50 2.50	2.50 2.50	2.50	2.50	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383313

SDG No.: 70132489

Instrument ID: A15 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/04/2020 11:56 Calibration End Date: 06/04/2020 12:51 Calibration ID: 50360

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
d9-N-EtFOSE-M	13PF OA	Ave	7197559 6645712	6383659 6583228	6015322	6515560	6375503	12.5 12.5	12.5 12.5	12.5	12.5	12.5
d-N-EtFOSA-M	13PF OA	Ave	1338610 1464448	1317134 1424762	1289555	1298529	1342737	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	2046106 2185293	2031772 2032789	2233755	1889089	2021036	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	1891570 1761696	1921227 1345151	1674702	1480897	1946691	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOA	13PF OA	Ave	3914452 3300754	3536219 3139164	3690520	3199649	3405935	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C8 PFOS	13PF OA	Ave	742567 703067	699275 628417	695576	679528	702645	2.39 2.39	2.39 2.39	2.39	2.39	2.39

Curve Type Legend:

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

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Lims ID: IC L1 Full
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 04-Jun-2020 11:56:53 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 1 (21)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:05 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 12:26:16
Ratio Calibration: Average of Initial Calibration

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	2.552	2.549	0.003	0.629	9648681	2.38		95.1	20607	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.552	2.551	0.001	1.000	84034	0.0235		94.1	22.4	
D 4 13C5 PFPeA										
267.90 > 223.00	2.903	2.895	0.008	0.716	8688019	2.40		95.9	17247	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.903	2.898	0.005	1.000	103688	0.0296		118	8.1	M
D 9 13C3 PFBS										
301.90 > 80.00	2.934	2.930	0.004	0.723	5750434	2.29		98.4	16170	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.934	2.930	0.004	1.000	51611	0.0214	Target=2.14	96.9	26.6	
298.90 > 99.00	2.934	2.930	0.004	1.000	24292		2.12(1.07-3.21)	96.9	17.1	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.228	3.226	0.002	0.796	743608	2.22		95.2	1657	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.228	3.227	0.001	1.000	15810	0.0220		94.3	444	
D 11 13C2 PFHxA										
315.00 > 270.00	3.276	3.267	0.009	0.808	8309413	2.36		94.4	14961	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.276	3.267	0.009	1.000	86092	0.0276	Target=15.73	111	42.2	
313.00 > 119.00	3.276	3.267	0.009	1.000	4904		17.56(7.86-23.59)	111	12.8	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.286	3.285	0.001	1.120	39024	0.0215	Target=2.69	91.7	287	
349.00 > 99.00	3.286	3.285	0.001	1.120	13293		2.94(1.35-4.04)	91.7	76.4	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.392	3.386	0.006	0.836	1919188	2.38		95.2	7863	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.392	3.386	0.006	1.000	16050	0.0229		91.6	318	
D 18 13C4 PFHpA										
367.00 > 322.00	3.667	3.661	0.006	0.904	6904259	2.47		98.8	15097	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.667	3.662	0.005	1.000	64911	0.0233	Target=3.80	93.0	25.4	
363.00 > 169.00	3.667	3.662	0.005	1.000	18763		3.46(1.90-5.71)	93.0	87.2	
D 17 18O2 PFHxS										
403.00 > 84.00	3.667	3.667	0.0	0.904	2721638	2.25		95.2	6937	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.677	3.670	0.007	1.003	36094	0.0279	Target=2.99	123	298	M
399.00 > 99.00	3.677	3.670	0.007	1.003	10219		3.53(1.50-4.49)	123	31.8	M
19 DONA										
377.00 > 251.00	3.716	3.709	0.007	0.844	148456	0.0228	Target=2.14	96.7	571	
377.00 > 85.00	3.716	3.709	0.007	0.844	66658		2.23(1.07-3.21)	96.7	254	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.031	4.030	0.001	0.994	879787	2.38		100	4456	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.031	4.032	-0.001	1.000	16828	0.0231		97.5	208	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.048	4.046	0.002	0.919	21900	0.0226	Target=3.77	94.9	329	
449.00 > 99.00	4.048	4.046	0.002	0.919	5570		3.93(1.89-5.66)	94.9	51.7	
$ 26 13C8 PFOA										
421.00 > 376.00	4.048	4.046	0.002	0.998	3914452	2.52		103	12719	
D 25 13C4 PFOA										
417.00 > 372.00	4.056	4.051	0.005	1.000	6420434	2.54		102	16054	
* 23 13C2 PFOA										
415.00 > 370.00	4.056	4.051	0.005		6408477	2.50			14141	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.056	4.052	0.004	1.000	85389	0.0315	Target=2.88	126	6.3	M
413.00 > 169.00	4.056	4.052	0.004	1.000	25450		3.36(1.44-4.31)	126	98.4	M
$ 28 13C8 PFOS										
507.00 > 99.00	4.404	4.400	0.004	1.086	742567	2.33		97.4	5123	
D 27 13C4 PFOS										
503.00 > 80.00	4.404	4.402	0.002	1.086	2124805	2.27		94.8	7192	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.404	4.403	0.001	1.000	21338	0.0243	Target=4.89	105	123	
499.00 > 99.00	4.404	4.403	0.001	1.000	4776		4.47(2.44-7.33)	105	33.7	M
31 Perfluorononanoic acid										
463.00 > 419.00	4.420	4.417	0.003	1.000	49862	0.0248	Target=7.00	99.3	8.7	
463.00 > 169.00	4.420	4.417	0.003	1.000	6140		8.12(3.50-10.51)	99.3	32.3	
D 30 13C5 PFNA										
468.00 > 423.00	4.420	4.417	0.003	1.090	4951399	2.56		102	11348	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.598	4.592	0.006	1.044	53119	0.0219		93.9	300	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.736	4.732	0.004	1.075	14777	0.0208	Target=2.77	86.7	38.9	
549.00 > 99.00	4.736	4.732	0.004	1.075	6064		2.44(1.38-4.15)	86.7	87.4	
D 33 13C8 FOSA										
506.00 > 78.00	4.751	4.747	0.004	1.171	4583532	2.46		98.3	7891	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.751	4.749	0.002	1.000	40033	0.0249		99.4	336	
37 Perfluorodecanoic acid										M
513.00 > 469.00	4.751	4.752	-0.001	1.000	43490	0.0254	Target=10.36	102	13.4	M
513.00 > 169.00	4.751	4.752	-0.001	1.000	4761		9.13(5.18-15.54)	102	47.1	
D 39 13C2 PFDA										
515.00 > 470.00	4.751	4.754	-0.003	1.171	4435130	2.41		96.2	10146	
36 1H,1H,2H,2H-perfluorodecanesulfo										M
527.00 > 507.00	4.759	4.755	0.004	1.000	16627	0.0231		96.3	147	M
D 38 M2-8:2 FTS										
529.00 > 81.00	4.759	4.755	0.004	1.173	1057870	2.40		100	4957	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.915	4.912	0.003	1.212	1663604	2.42		96.7	2242	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.915	4.915	0.0	1.000	11058	0.0228		91.1	14.8	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.038	5.037	0.001	1.144	15310	0.0246	Target=2.97	102	96.0	
599.00 > 99.00	5.038	5.037	0.001	1.144	4366		3.51(1.49-4.46)	102	50.6	
45 Perfluoroundecanoic acid										M
563.00 > 519.00	5.065	5.060	0.005	1.000	20441	0.0178	Target=7.56	71.3	13.1	M
563.00 > 169.00	5.056	5.060	-0.004	0.998	3958		5.16(3.78-11.34)	71.3	47.3	M
D 43 13C2 PFUnA										
565.00 > 520.00	5.065	5.062	0.003	1.249	3972161	2.53		101	14429	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.074	5.071	0.003	1.251	1710239	2.44		97.6	2464	
46 N-ethylperfluorooctanesulfonamid										M
584.00 > 419.00	5.074	5.075	-0.001	1.000	11820	0.0244		97.8	34.9	M
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.192	5.191	0.001	1.179	48683	0.0212		90.1	292	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.201	5.198	0.003	1.282	5733079	12.2		97.6	4421	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.209	5.209	0.0	1.002	10662	0.0222		88.8	29.6	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.218	5.215	0.003	1.287	1327001	2.25		90.0	239	
50 NMeFOSA										M
512.00 > 169.00	5.218	5.220	-0.002	1.000	11445	0.0229		91.6	123	M
57 Perfluorododecanoic acid										M
613.00 > 569.00	5.339	5.338	0.001	1.000	32430	0.0243	Target=7.18	97.3	6.2	M
613.00 > 169.00	5.348	5.338	0.010	1.002	5236		6.19(3.59-10.76)	97.3	40.5	
D 56 13C2 PFDoA										
615.00 > 570.00	5.339	5.339	0.0	1.316	3396149	2.44		97.6	8568	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.366	5.362	0.004	1.128	13395	0.0236		97.8	168	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.366	5.364	0.002	1.323	7197559	12.5		100	4997	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.374	5.376	-0.002	1.001	12226	0.0207		83.0	35.4	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.393	5.387	0.006	1.330	1338610	2.24		89.5	678	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.393	5.395	-0.002	1.000	11250	0.0210		83.9	89.9	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.566	5.562	0.004	1.264	4578	0.0212	Target=0.79	87.4	65.6	
699.00 > 99.00	5.566	5.562	0.004	1.264	6603		0.69(0.39-1.18)	87.4	190	
60 Perfluorotridecanoic acid										M
663.00 > 619.00	5.604	5.601	0.003	1.050	32713	0.0305	Target=6.63	122	5.7	M
663.00 > 169.00	5.604	5.601	0.003	1.050	4553		7.18(3.32-9.95)	122	54.0	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.839	5.835	0.004	1.440	2046106	2.25		89.9	9962	
62 Perfluorotetradecanoic acid										M
713.00 > 669.00	5.839	5.838	0.001	1.000	22029	0.0269	Target=8.46	108	6.3	M
713.00 > 219.00	5.830	5.838	-0.008	0.998	2823		7.80(4.23-12.69)	108	96.7	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.254	6.257	-0.003	1.542	1891570	2.51		100	4928	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.263	6.258	0.005	1.001	31624	0.0258	Target=7.92	103	4.2	
813.00 > 169.00	6.263	6.258	0.005	1.001	4041		7.83(3.96-11.88)	103	77.6	
65 Perfluorooctadecanoic acid										M
913.00 > 869.00	6.663	6.655	0.008	1.065	9731	0.0261	Target=10.24	105	1.8	M
913.00 > 169.00	6.656	6.655	0.001	1.064	863		11.28(5.12-15.36)	105	22.7	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

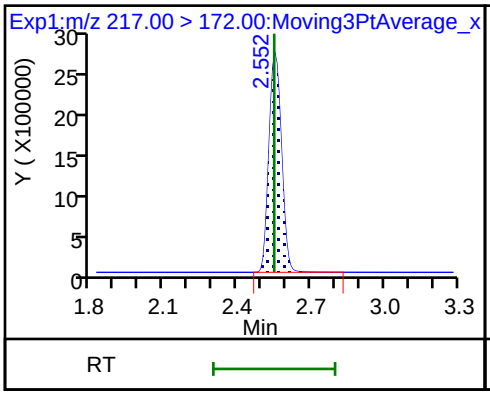
LCPFC_LL1_00021 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:07 Chrom Revision: 2.3 03-Jun-2020 23:27:16

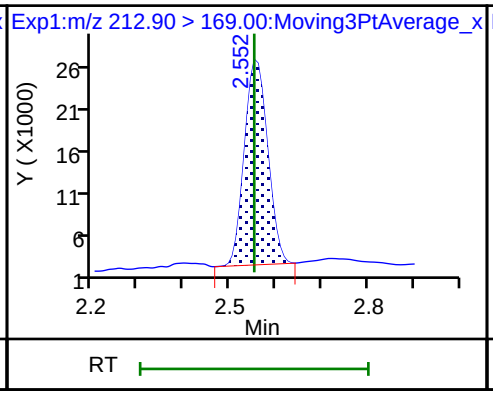
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL

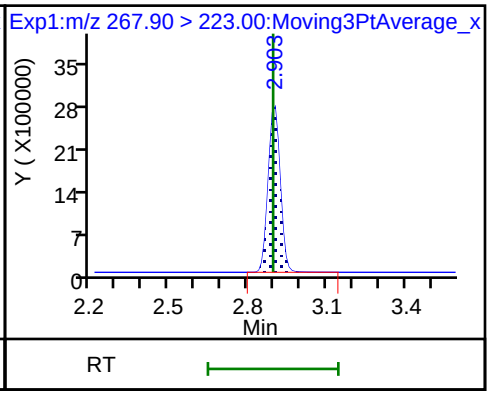
D 1 13C4 PFBA



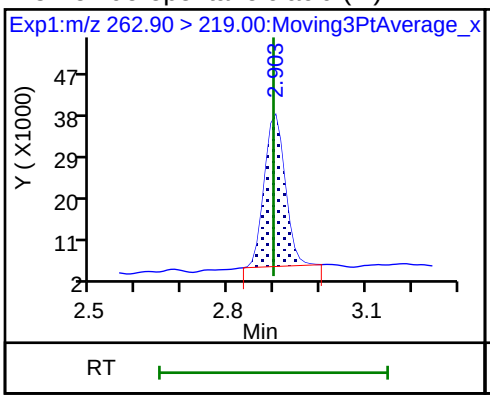
2 Perfluorobutanoic acid



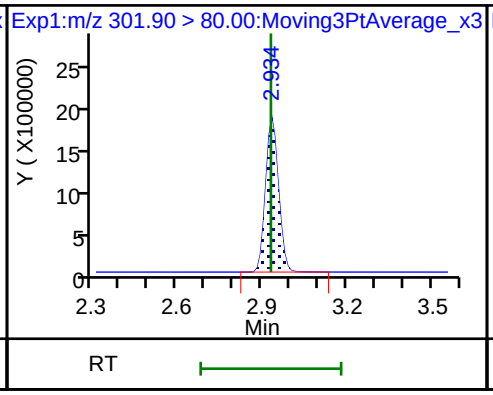
D 4 13C5 PFPeA



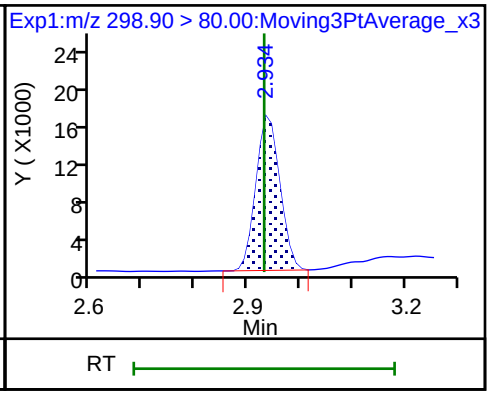
5 Perfluoropentanoic acid (M)



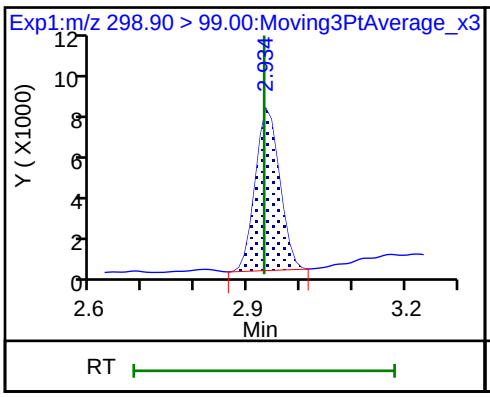
D 9 13C3 PFBS



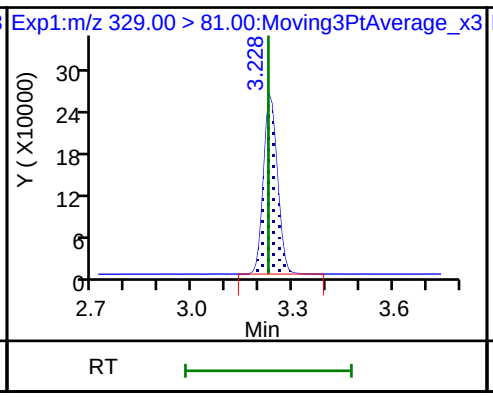
6 Perfluorobutanesulfonic acid



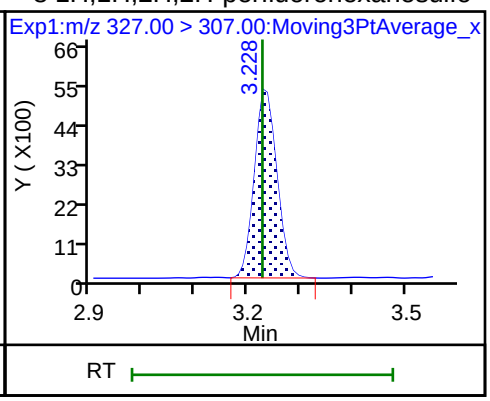
6 Perfluorobutanesulfonic acid



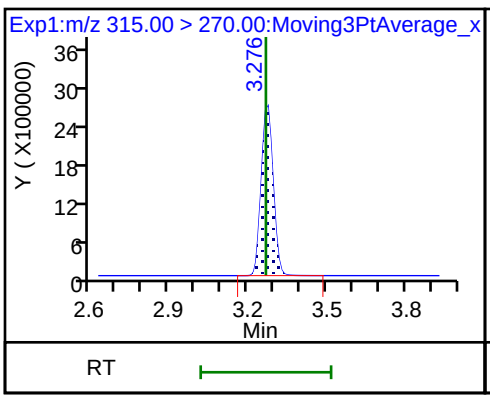
D 7 M2-4:2 FTS



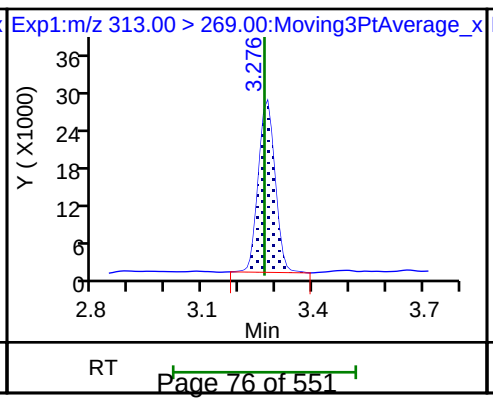
8 1H,1H,2H,2H-perfluorohexanesulfo



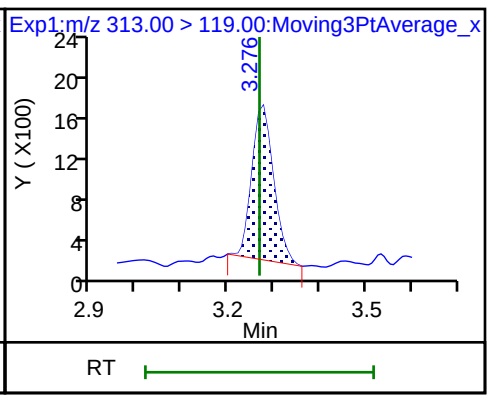
D 11 13C2 PFHxA



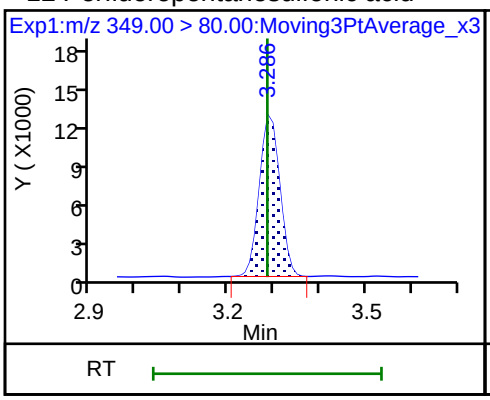
10 Perfluorohexanoic acid



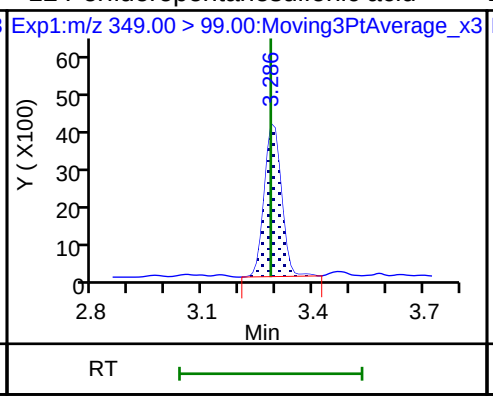
10 Perfluorohexanoic acid



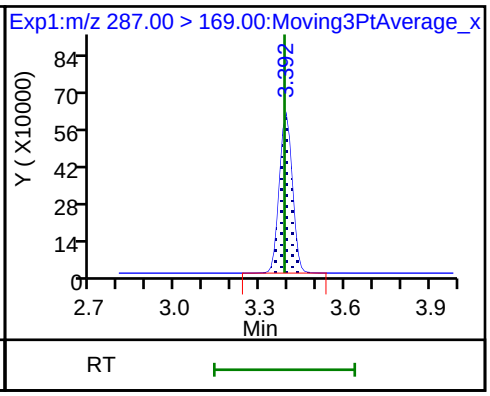
12 Perfluoropentanesulfonic acid



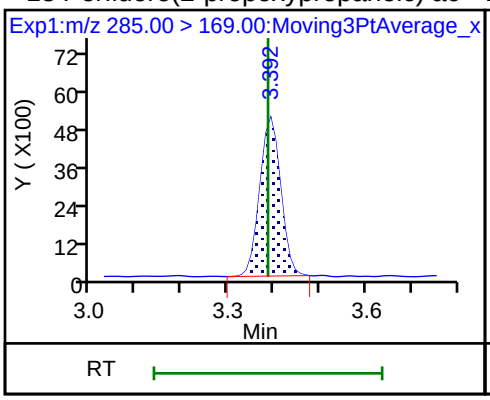
12 Perfluoropentanesulfonic acid



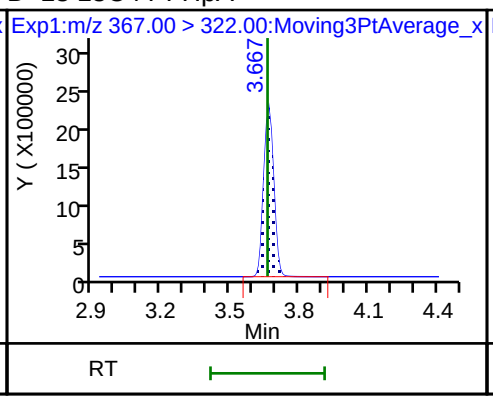
D 14 13C3 HFPO-DA



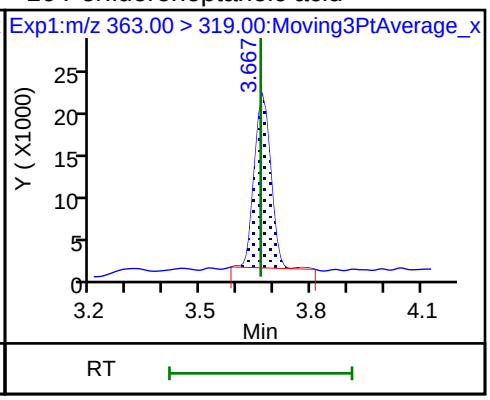
13 Perfluoro(2-propoxypropanoic) ac



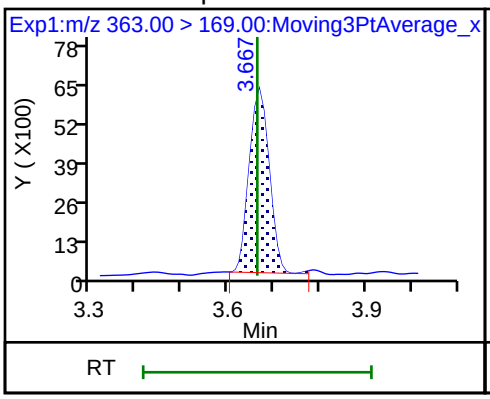
D 18 13C4 PFHpA



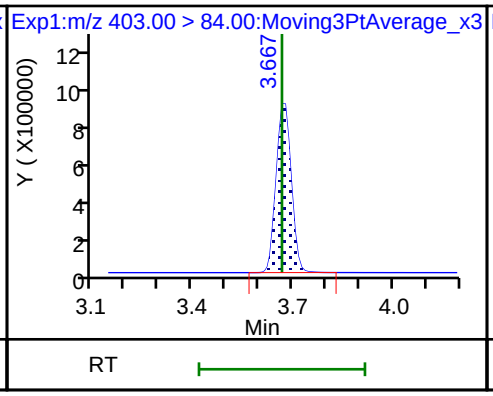
16 Perfluoroheptanoic acid



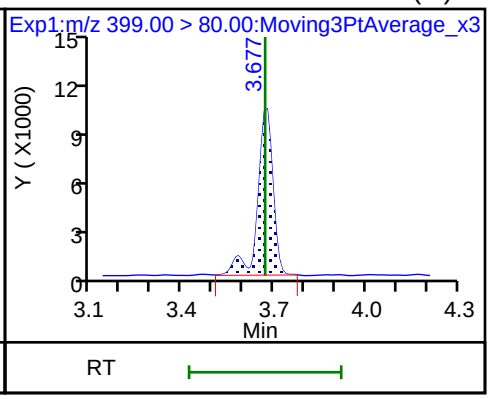
16 Perfluoroheptanoic acid



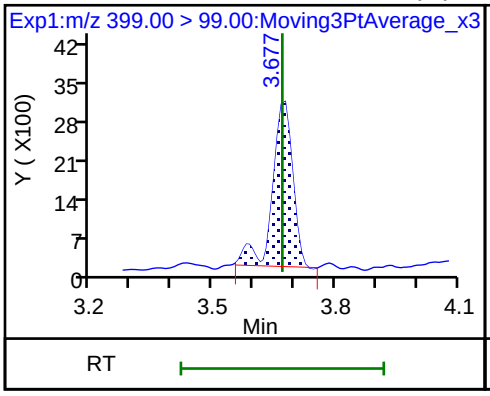
D 17 18O2 PFHxS



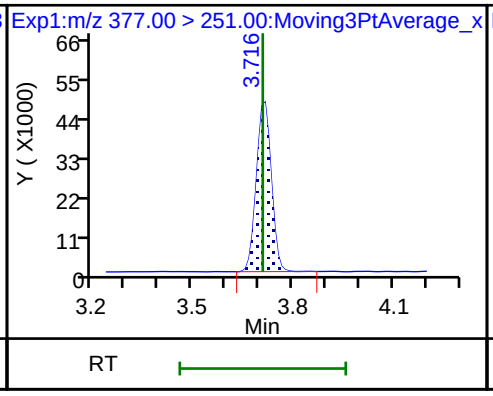
15 Perfluorohexanesulfonic acid (M)



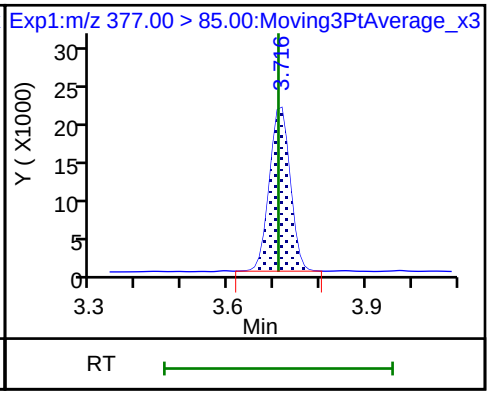
15 Perfluorohexanesulfonic acid (M)



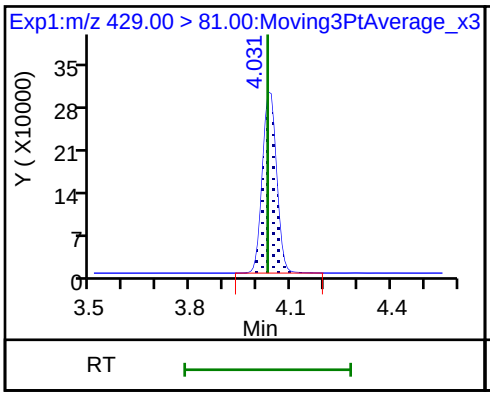
19 DONA



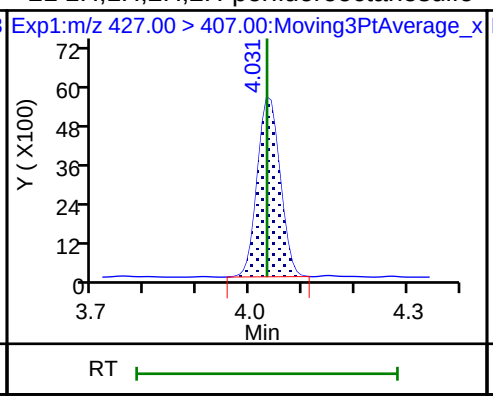
19 DONA



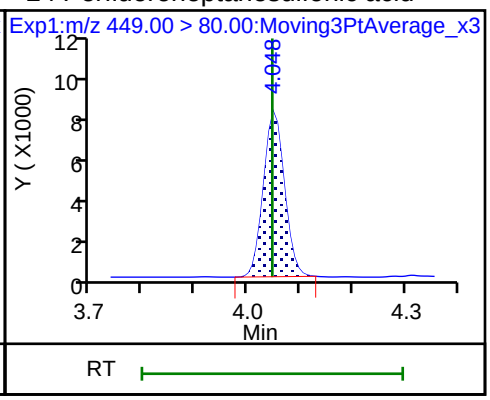
D 20 M2-6:2 FTS



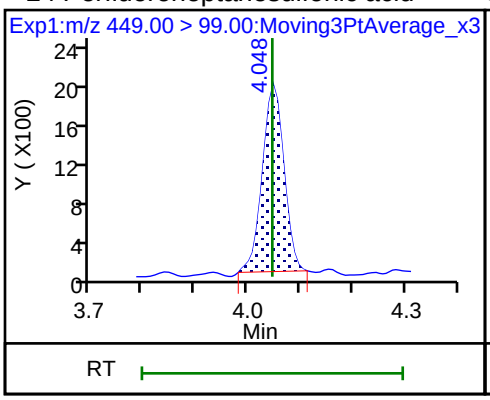
21 1H,1H,2H,2H-perfluorooctanesulfo



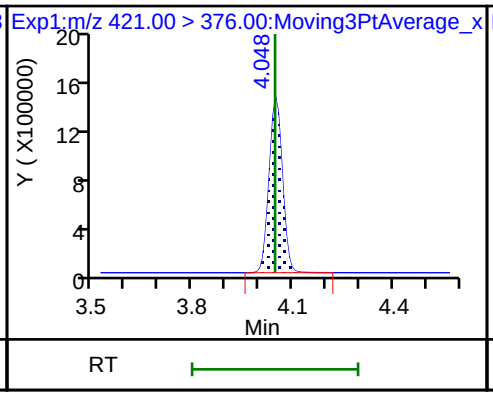
24 Perfluoroheptanesulfonic acid



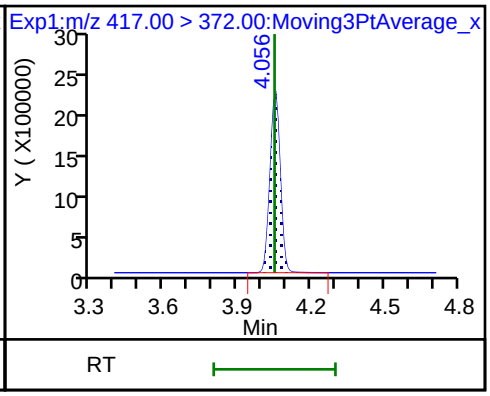
24 Perfluoroheptanesulfonic acid



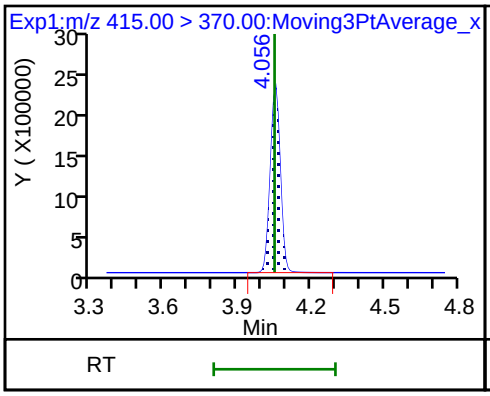
$ 26 13C8 PFOA



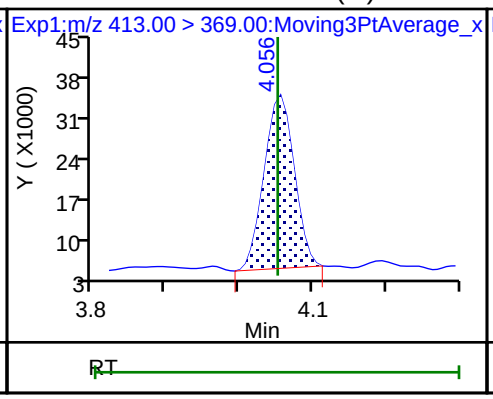
D 25 13C4 PFOA



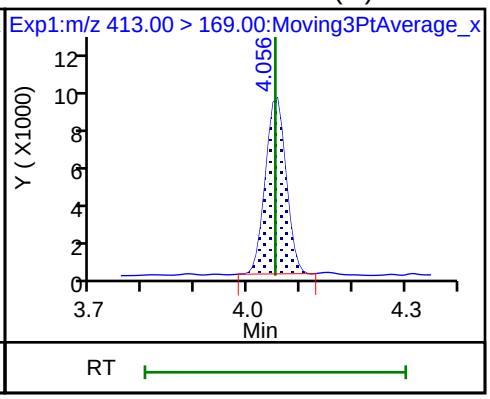
* 23 13C2 PFOA



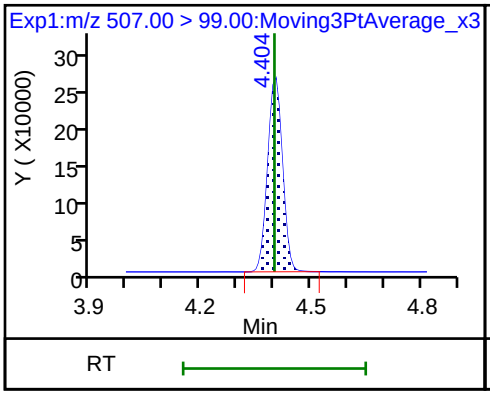
22 Perfluorooctanoic acid (M)



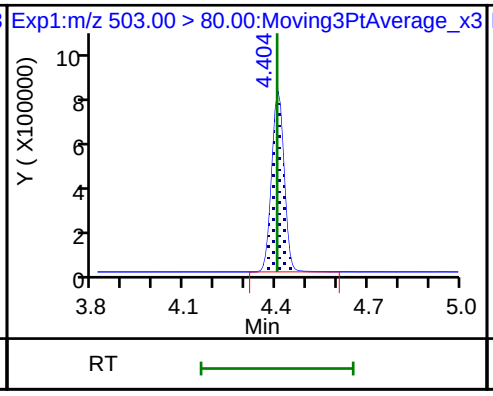
22 Perfluorooctanoic acid (M)



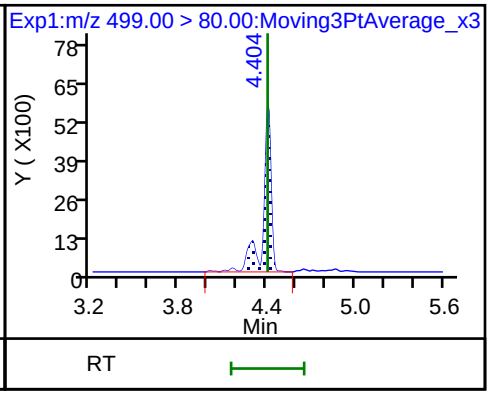
$ 28 13C8 PFOS



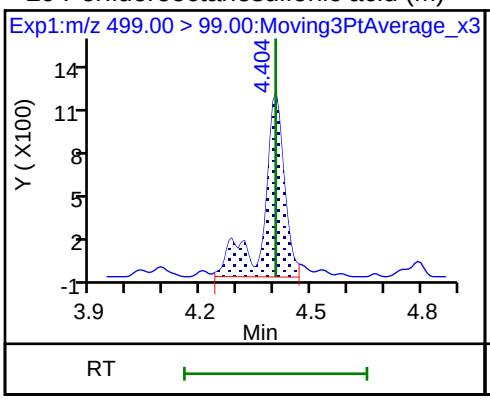
D 27 13C4 PFOS



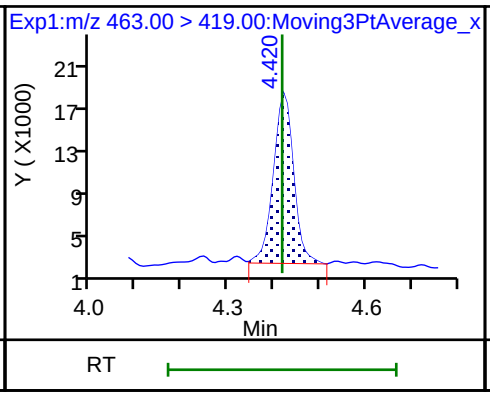
29 Perfluorooctanesulfonic acid



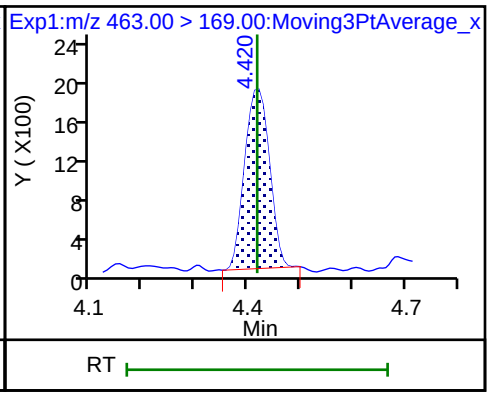
29 Perfluorooctanesulfonic acid (M)



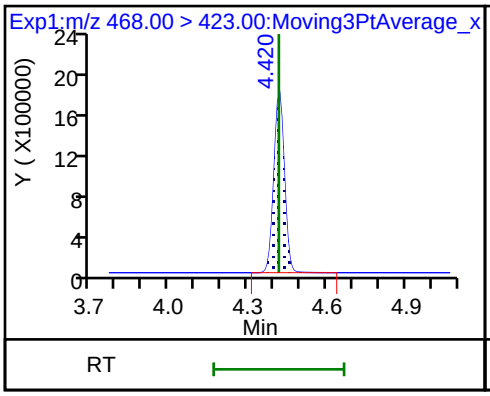
31 Perfluorononanoic acid



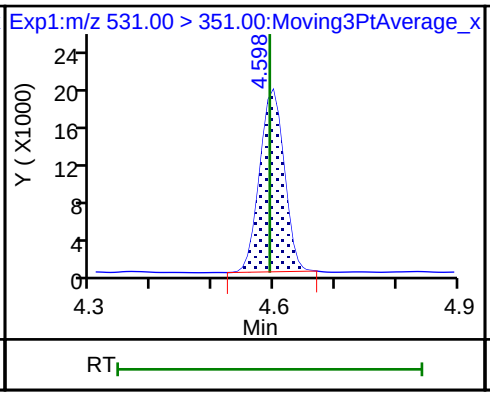
31 Perfluorononanoic acid



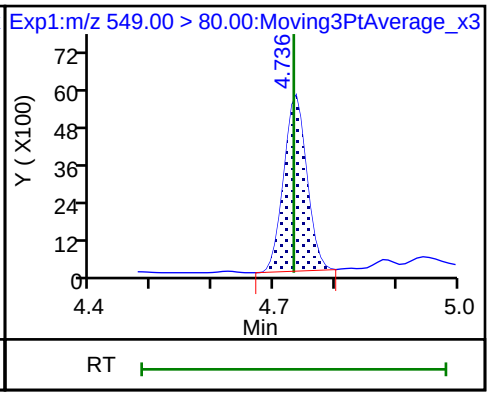
D 30 13C5 PFNA



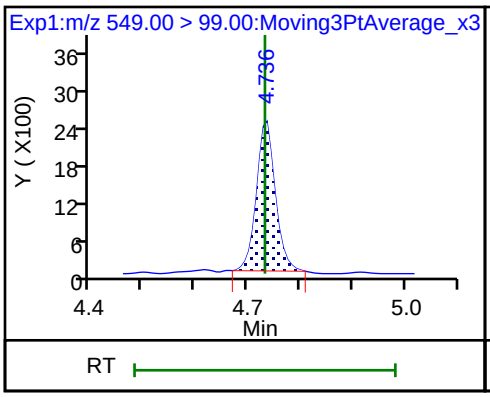
32 9-Chlorohexadecafluoro-3-oxanona



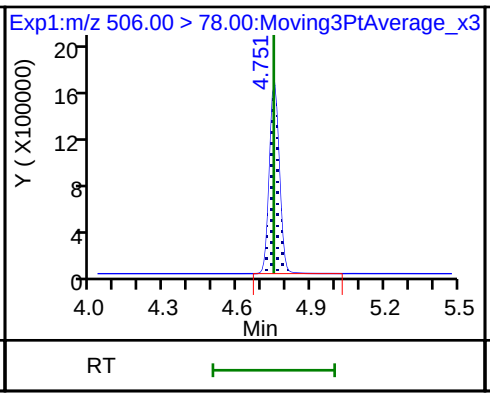
35 Perfluorononanesulfonic acid



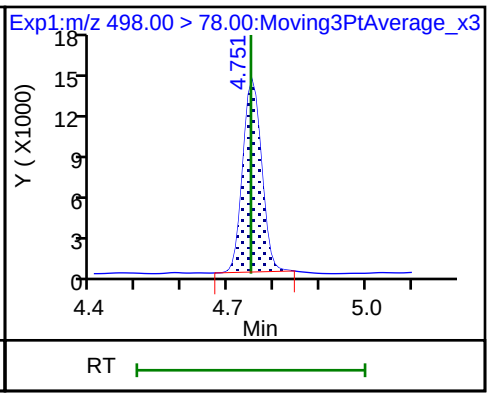
35 Perfluorononanesulfonic acid



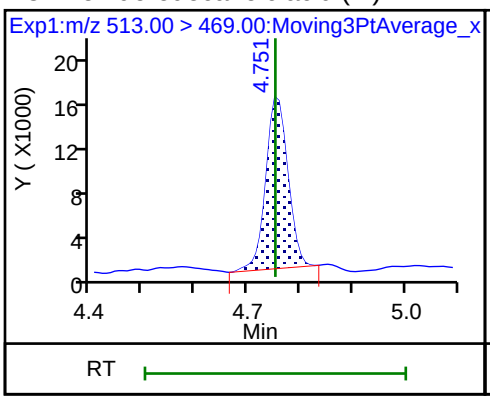
D 33 13C8 FOSA



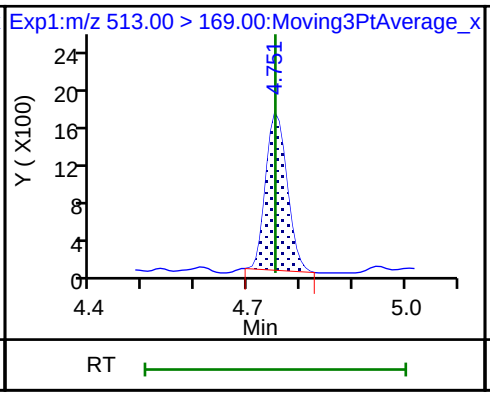
34 Perfluorooctanesulfonamide



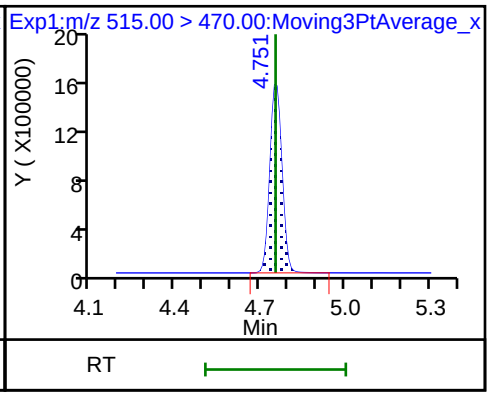
37 Perfluorodecanoic acid (M)



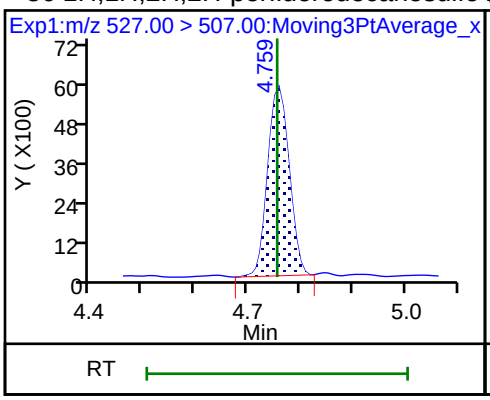
37 Perfluorodecanoic acid



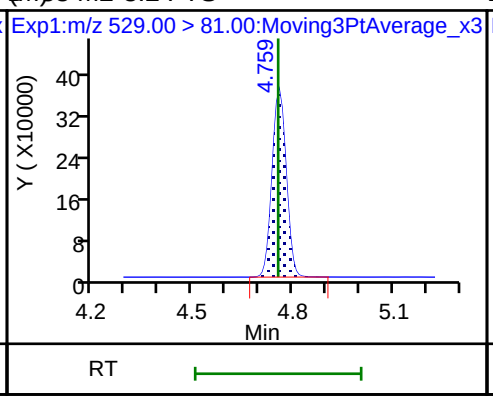
D 39 13C2 PFDA



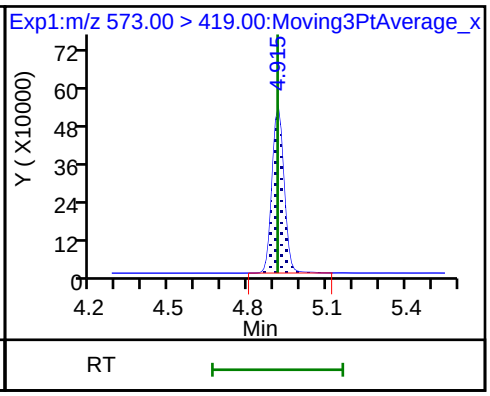
36 1H,1H,2H,2H-perfluorodecanesulfo (M)



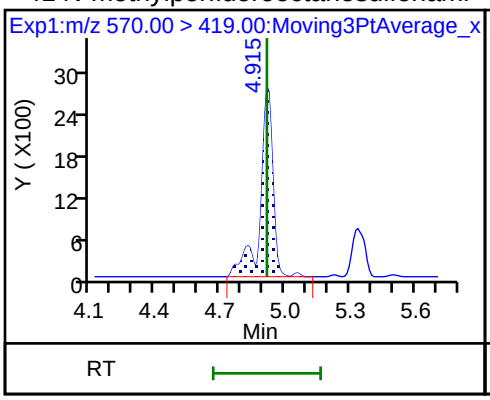
D 38 M2-8:2 FTS



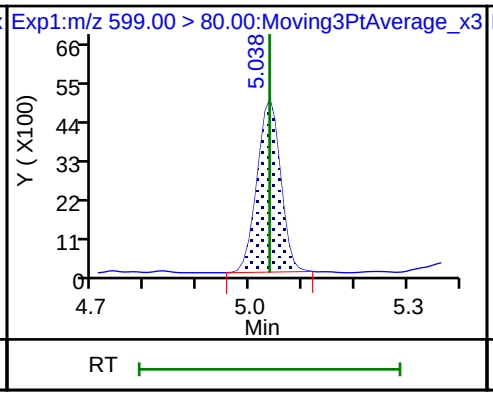
D 40 d3-NMeFOSAA



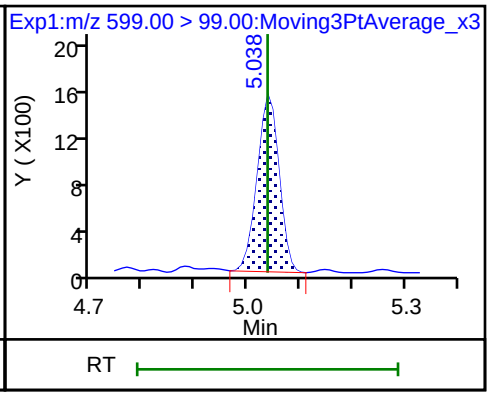
41 N-methylperfluorooctanesulfonami



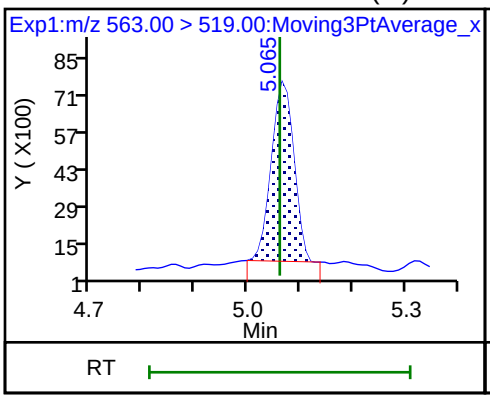
42 Perfluorodecanesulfonic acid



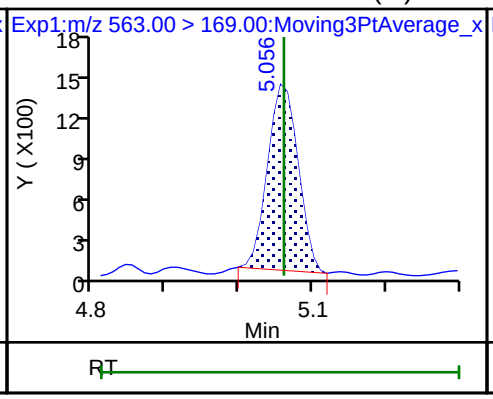
42 Perfluorodecanesulfonic acid



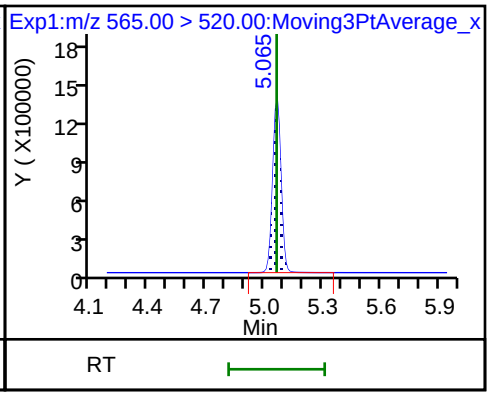
45 Perfluoroundecanoic acid (M)



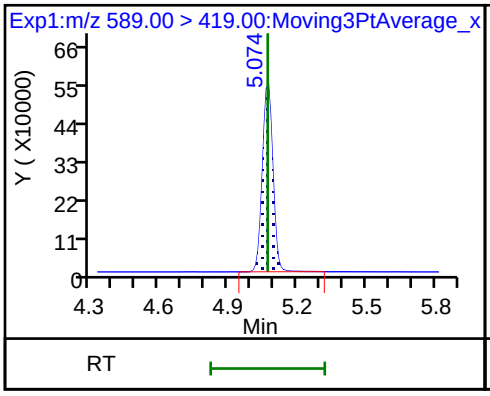
45 Perfluoroundecanoic acid (M)



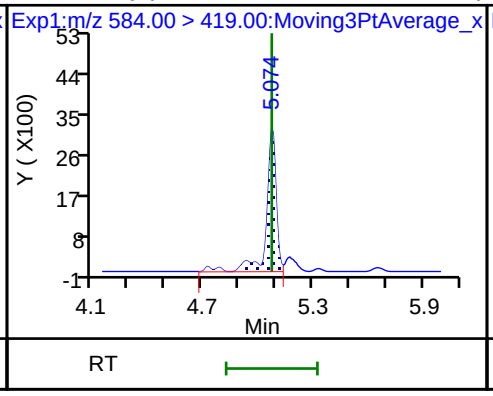
D 43 13C2 PFUnA



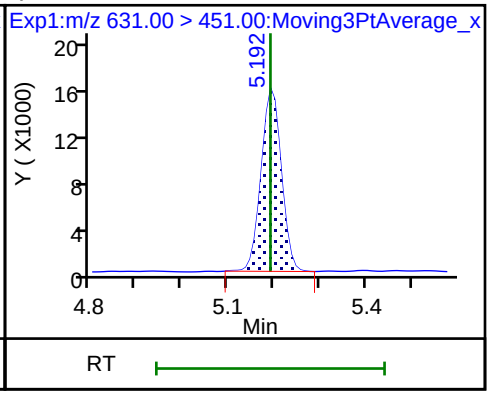
D 44 d5-NEtFOSAA



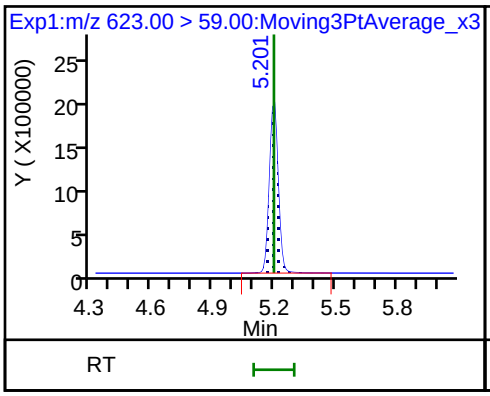
46 N-ethylperfluorooctanesulfonamid (M)



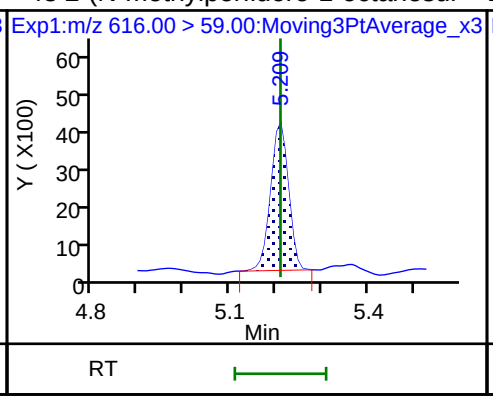
51 11-Chloroeicosafluoro-3-oxaundec



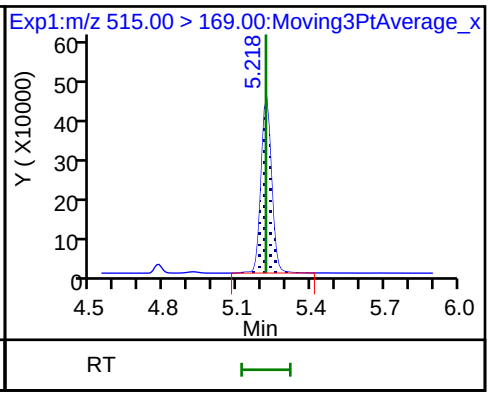
D 47 d7-N-MeFOSE-M



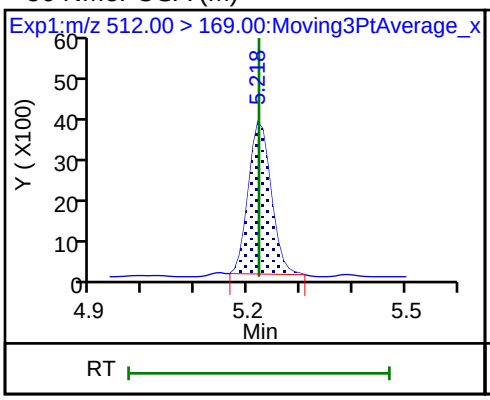
48 2-(N-methylperfluoro-1-octanesul



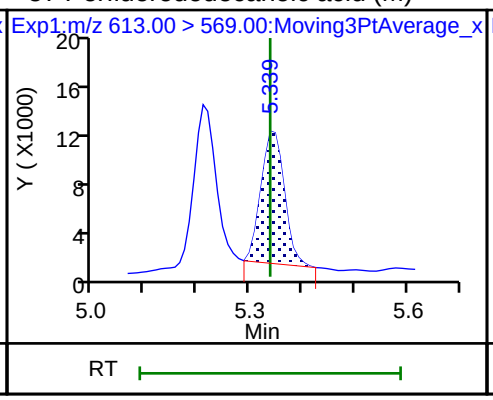
D 49 d-N-MeFOSA-M



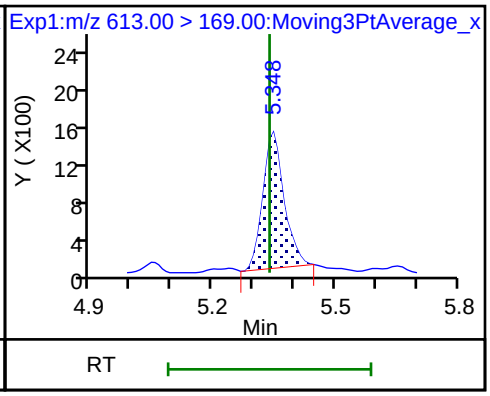
50 NMeFOSA (M)



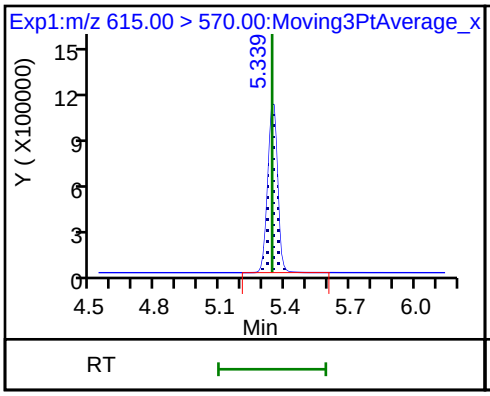
57 Perfluorododecanoic acid (M)



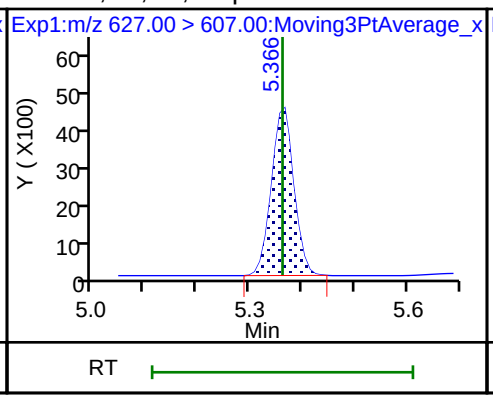
57 Perfluorododecanoic acid



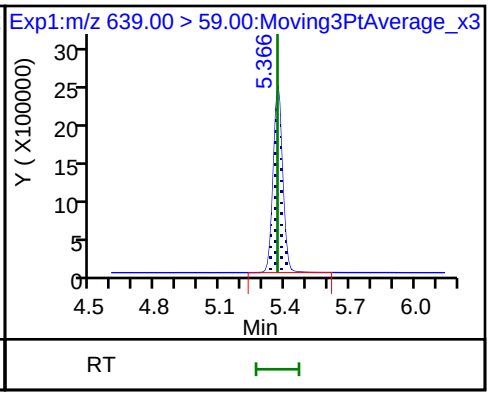
D 56 13C2 PFDoA



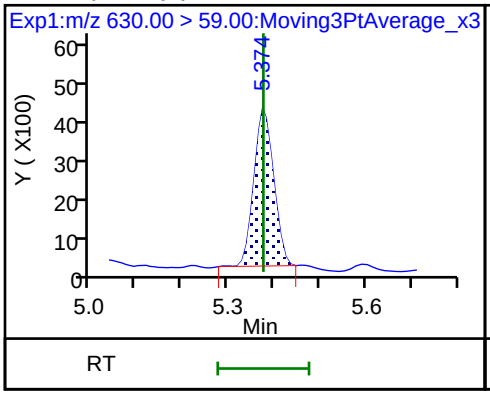
58 1H,1H,2H,2H-perfluorododecanesul



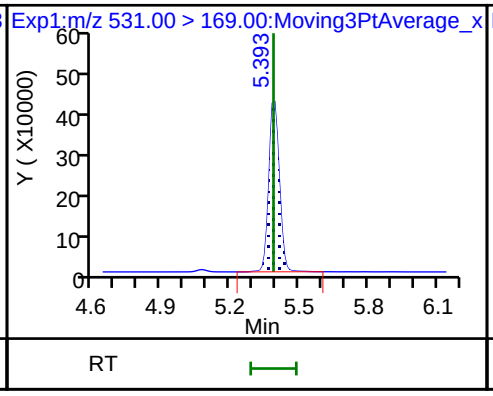
D 52 d9-N-EtFOSE-M



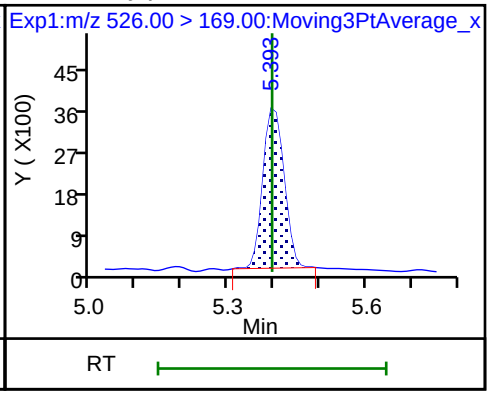
53 2-(N-ethylperfluoro-1-octanesulf



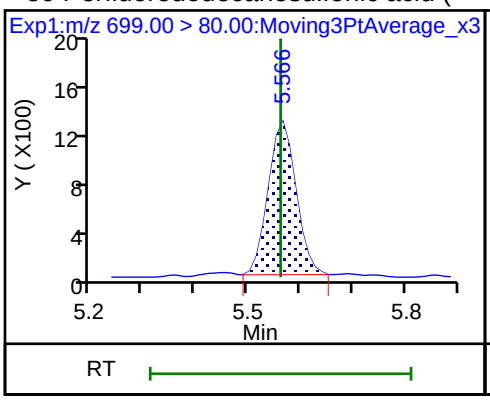
D 54 d-N-EtFOSA-M



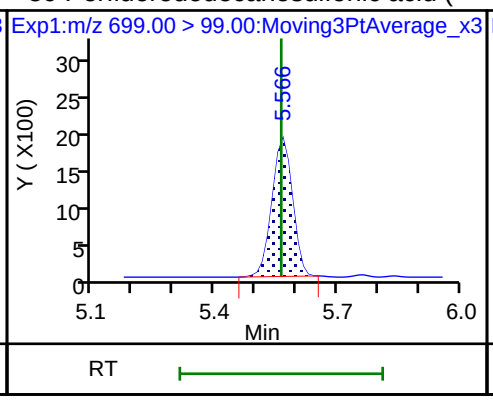
55 N-ethylperfluoro-1-octanesulfona



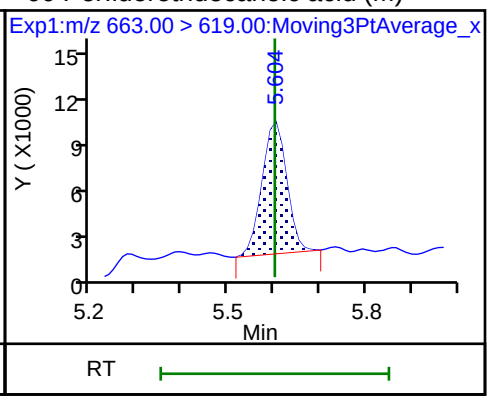
59 Perfluorododecanesulfonic acid (



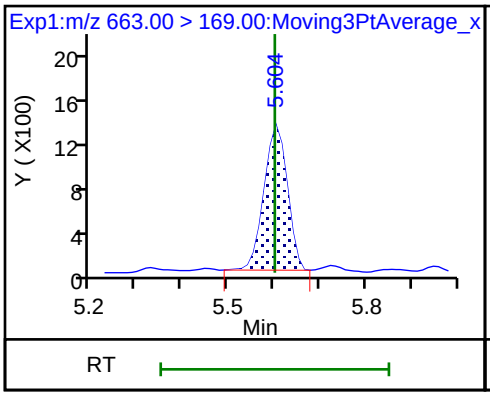
59 Perfluorododecanesulfonic acid (



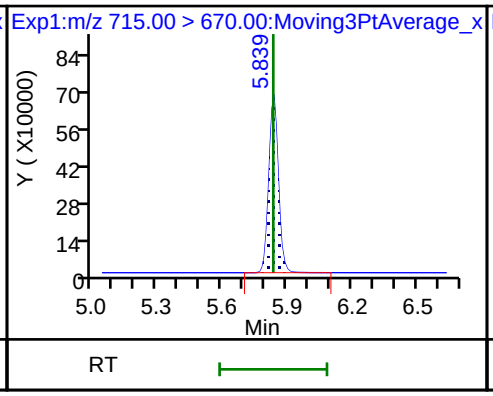
60 Perfluorotridecanoic acid (M)



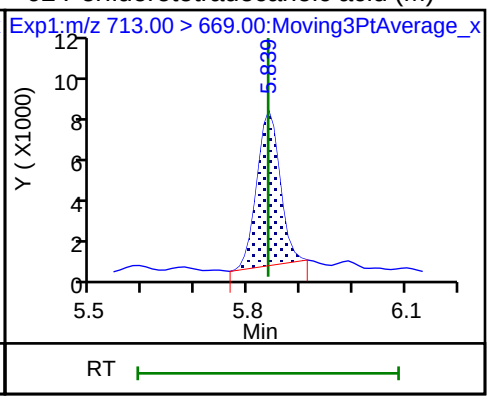
60 Perfluorotridecanoic acid



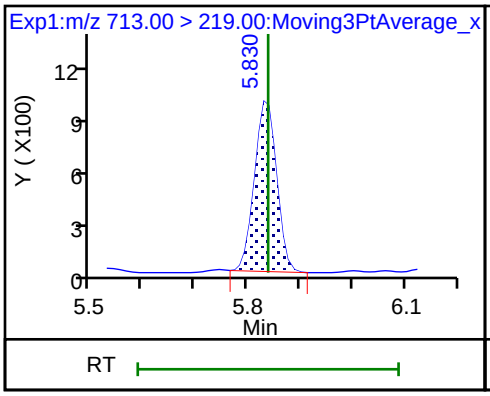
D 61 13C2 PFTeDA



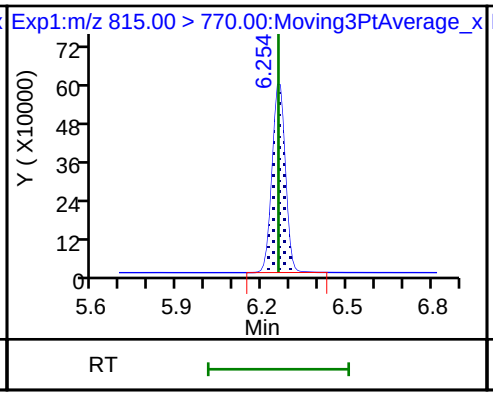
62 Perfluorotetradecanoic acid (M)



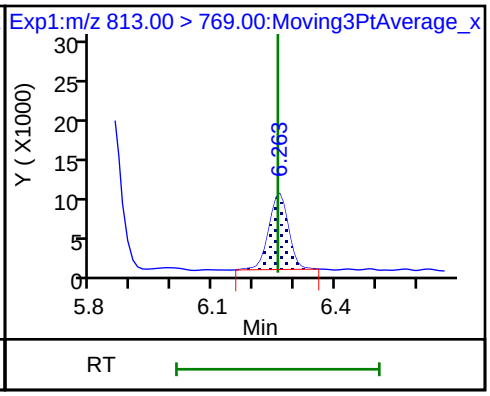
62 Perfluorotetradecanoic acid



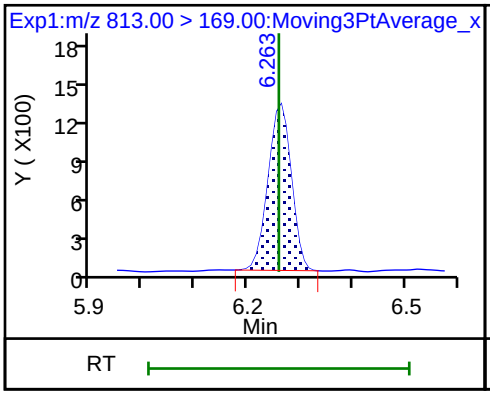
D 64 13C2 PFHxDA



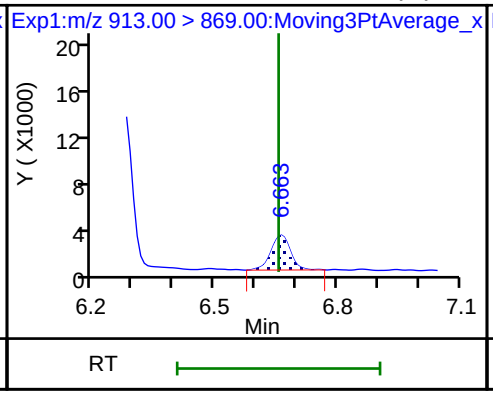
63 Perfluorohexadecanoic acid



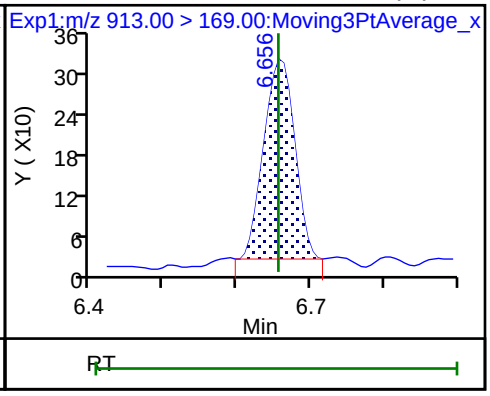
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid (M)



65 Perfluorooctadecanoic acid (M)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

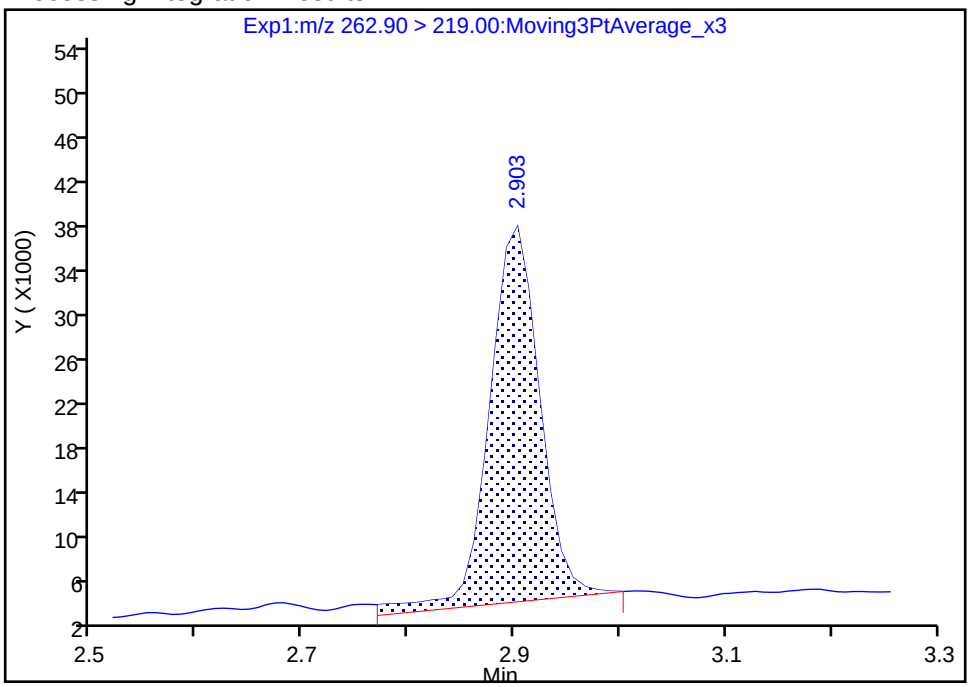
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

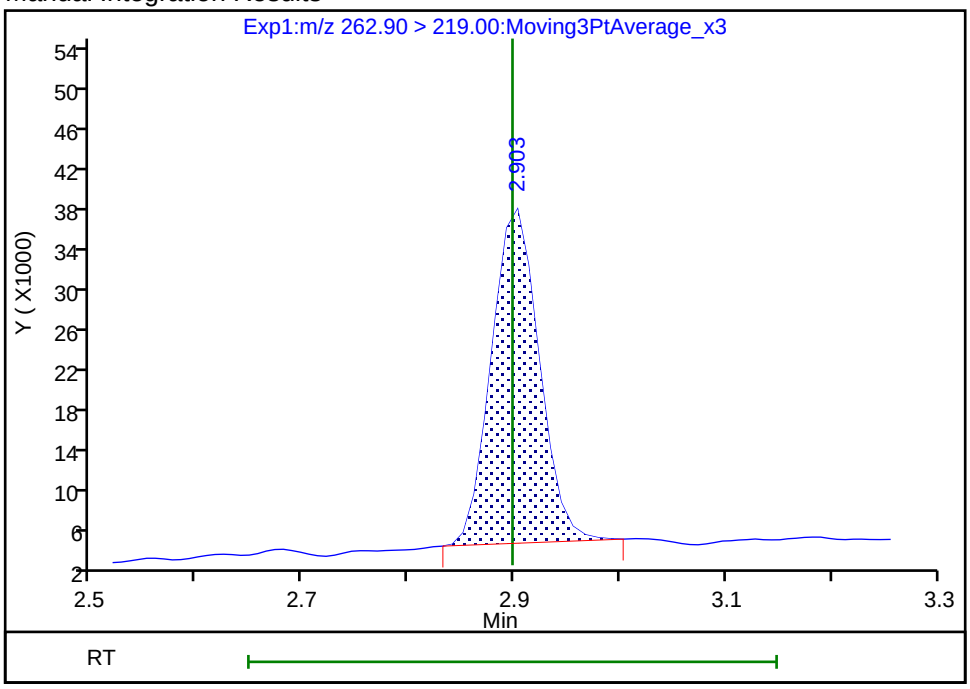
Processing Integration Results

RT: 2.90
Area: 111487
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 2.90
Area: 103688
Amount: 0.029617
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:16:39
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

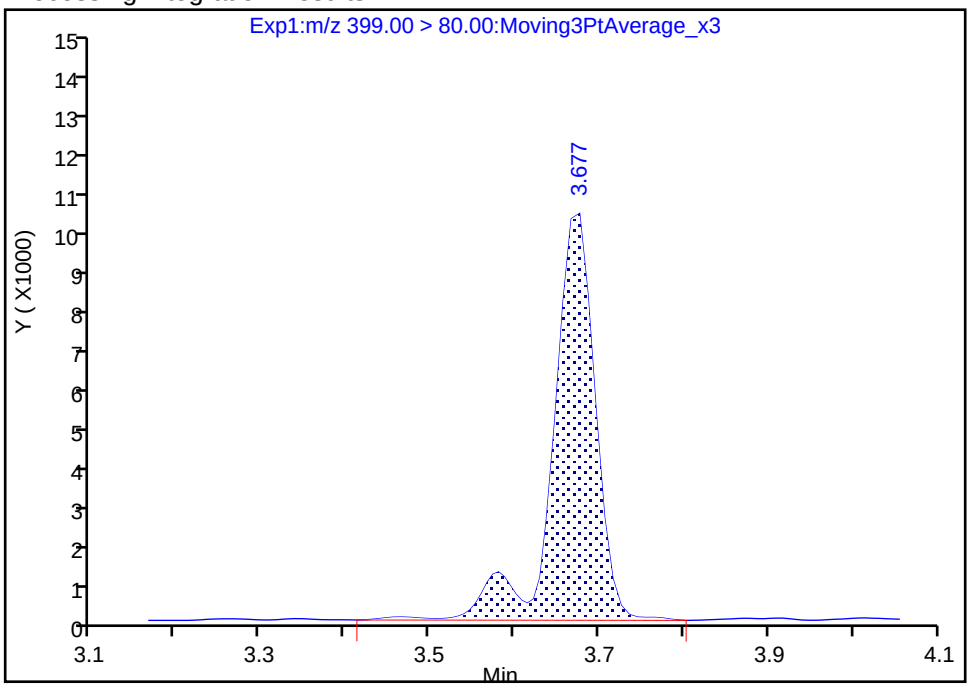
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

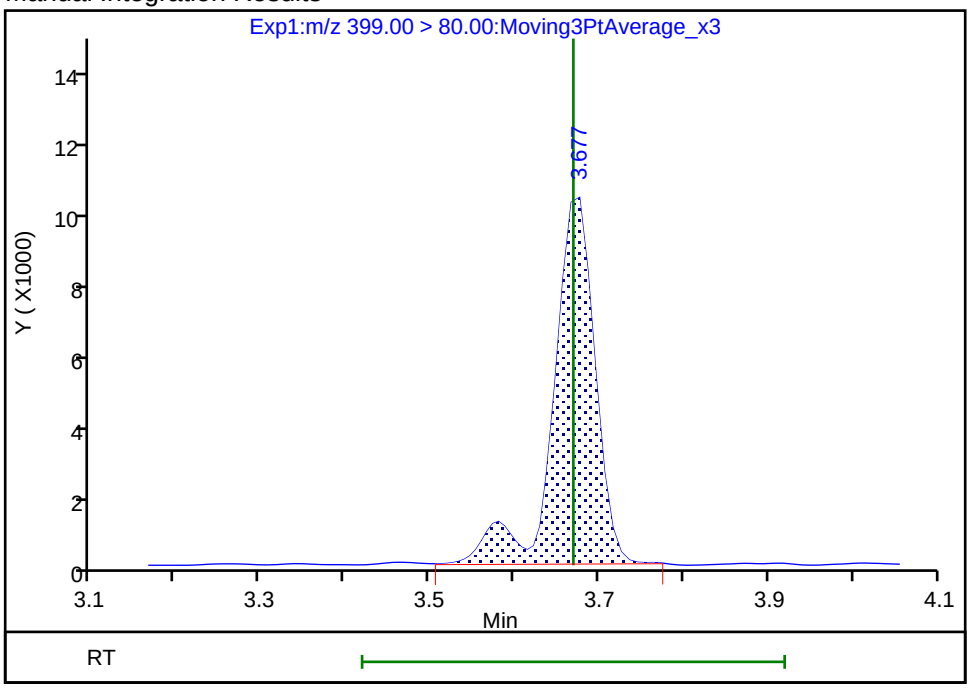
Processing Integration Results

RT: 3.68
Area: 36797
Amount: 0.022750
Amount Units: ng/ml



Manual Integration Results

RT: 3.68
Area: 36094
Amount: 0.027929
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:26:55
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

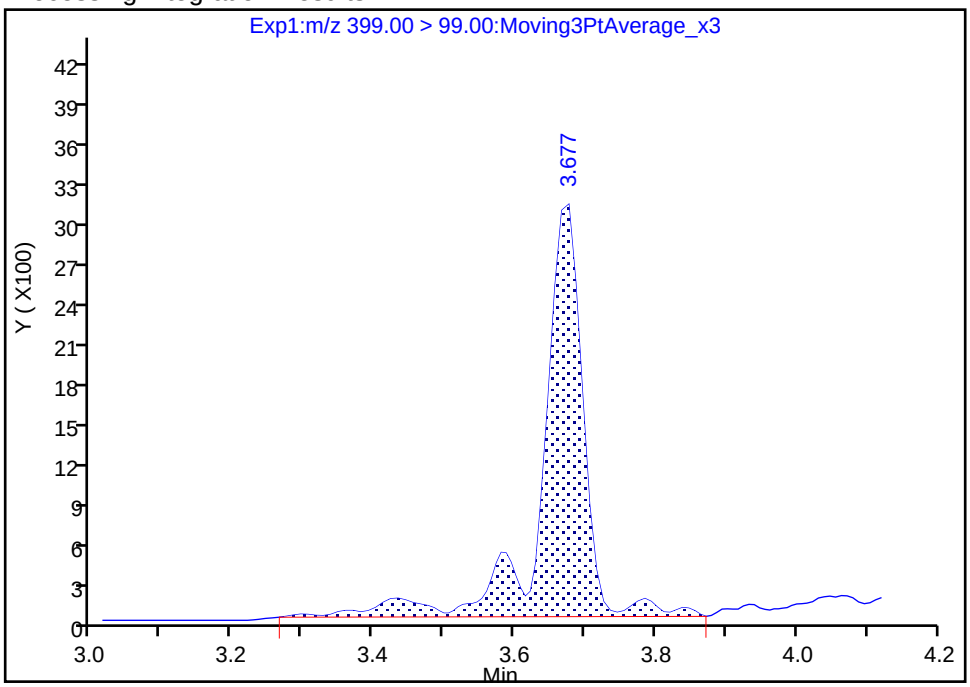
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

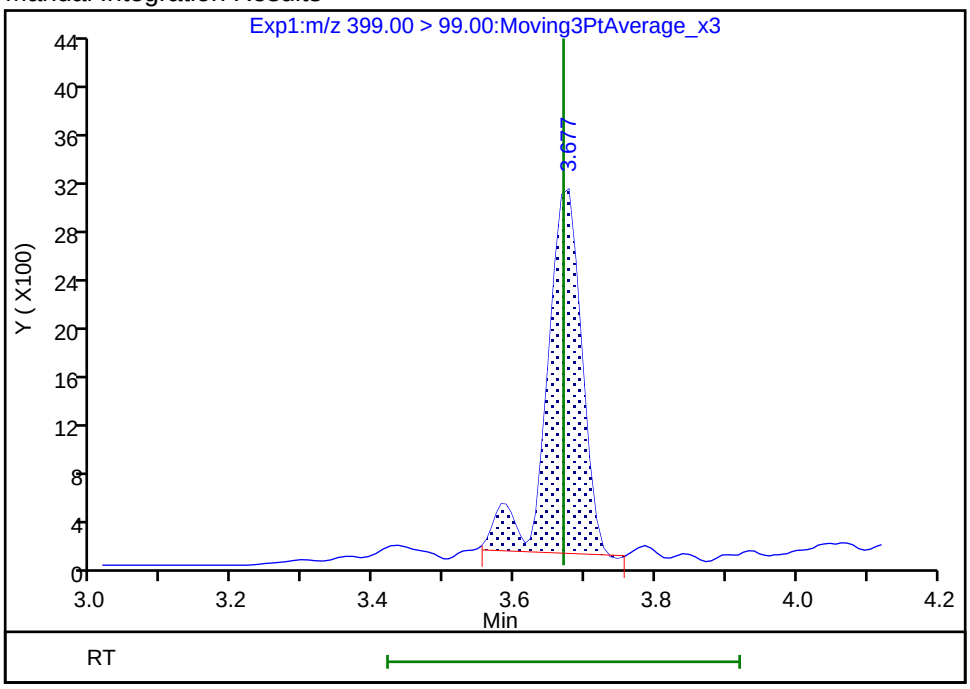
Processing Integration Results

RT: 3.68
Area: 12622
Amount: 0.022750
Amount Units: ng/ml



Manual Integration Results

RT: 3.68
Area: 10219
Amount: 0.027929
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:27:14
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

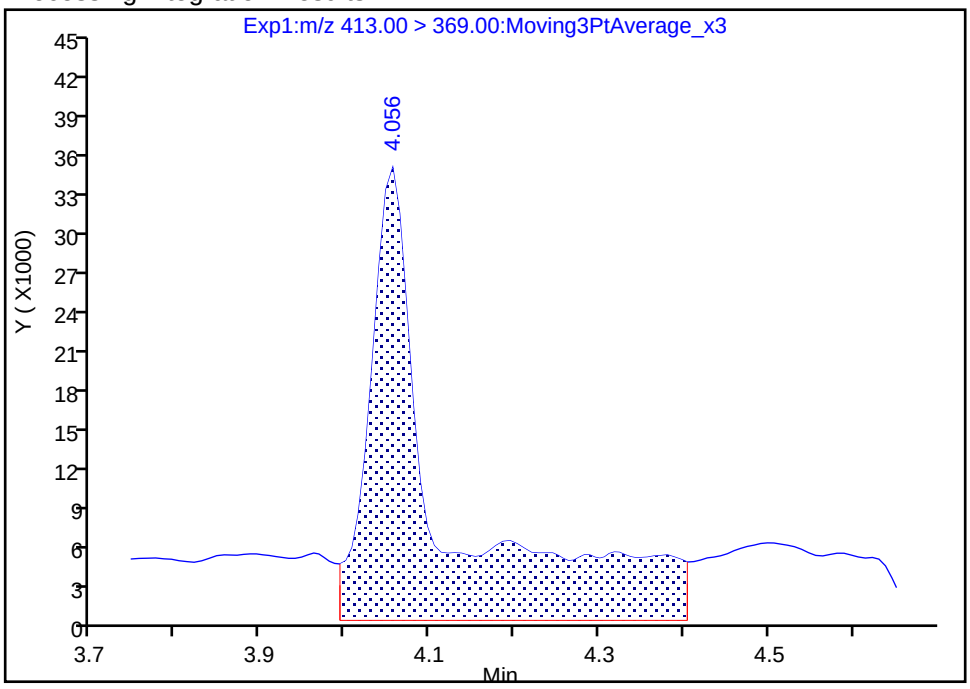
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

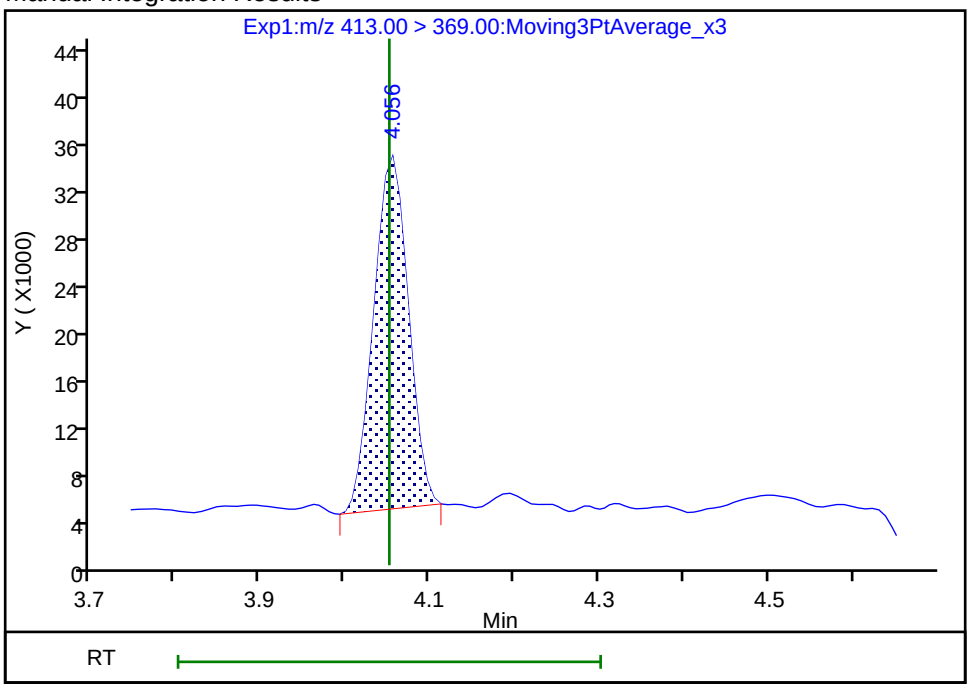
Processing Integration Results

RT: 4.06
Area: 209334
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 85389
Amount: 0.031469
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:18:25
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

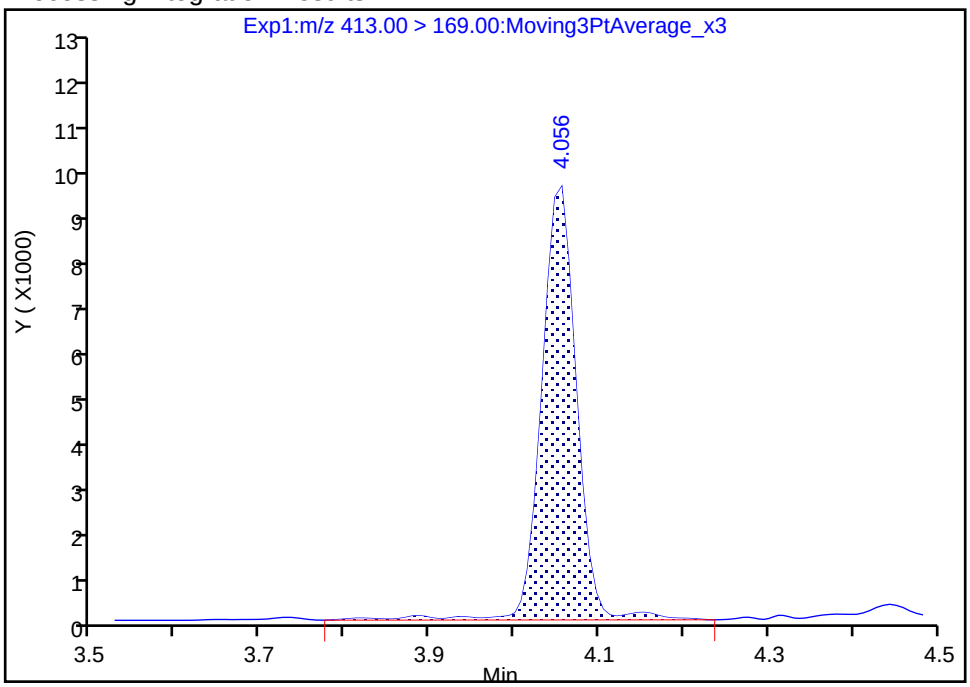
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

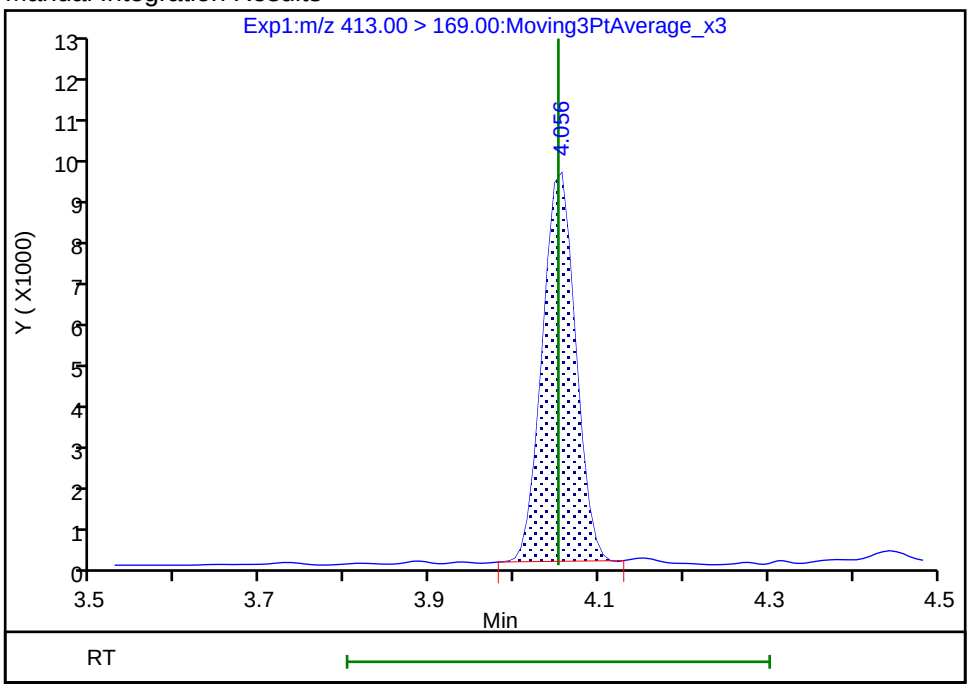
Processing Integration Results

RT: 4.06
Area: 27212
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 25450
Amount: 0.031469
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:24:24
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

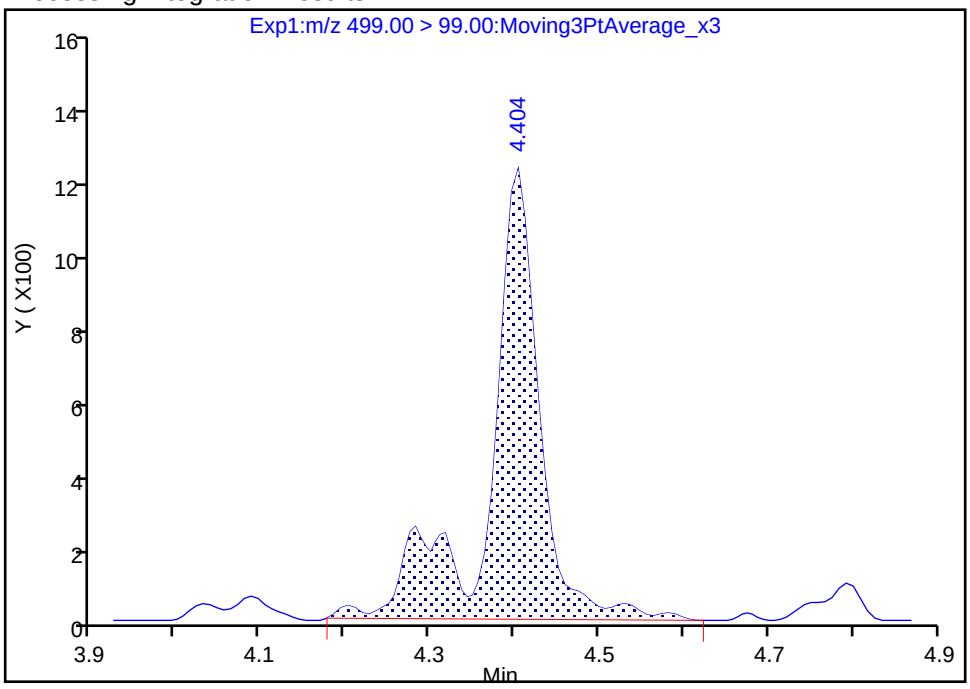
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

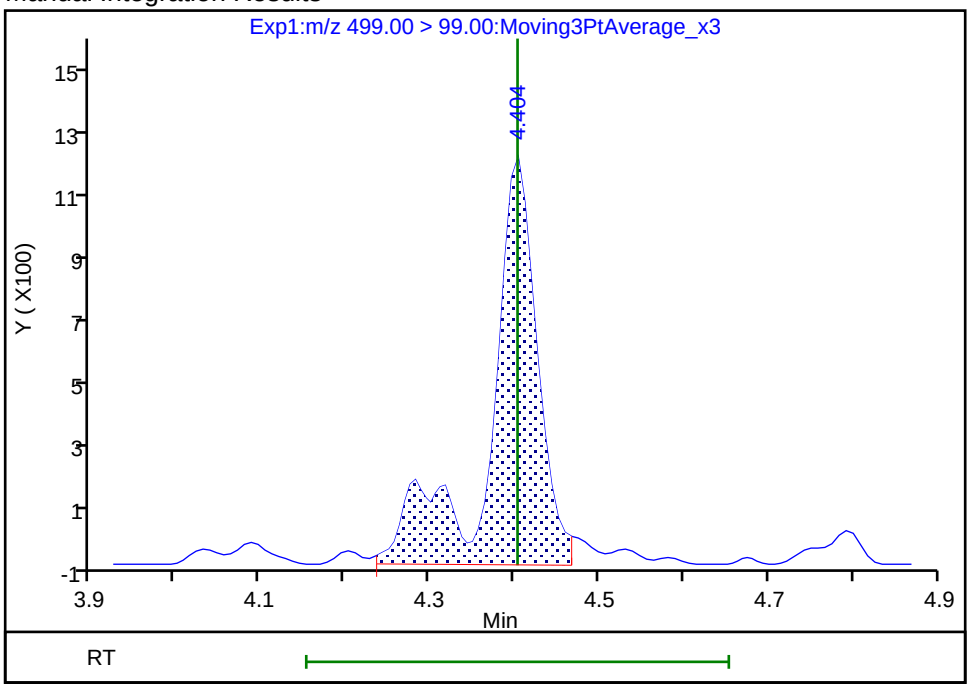
Processing Integration Results

RT: 4.40
Area: 5055
Amount: 0.023200
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 4776
Amount: 0.024258
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:19:03
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

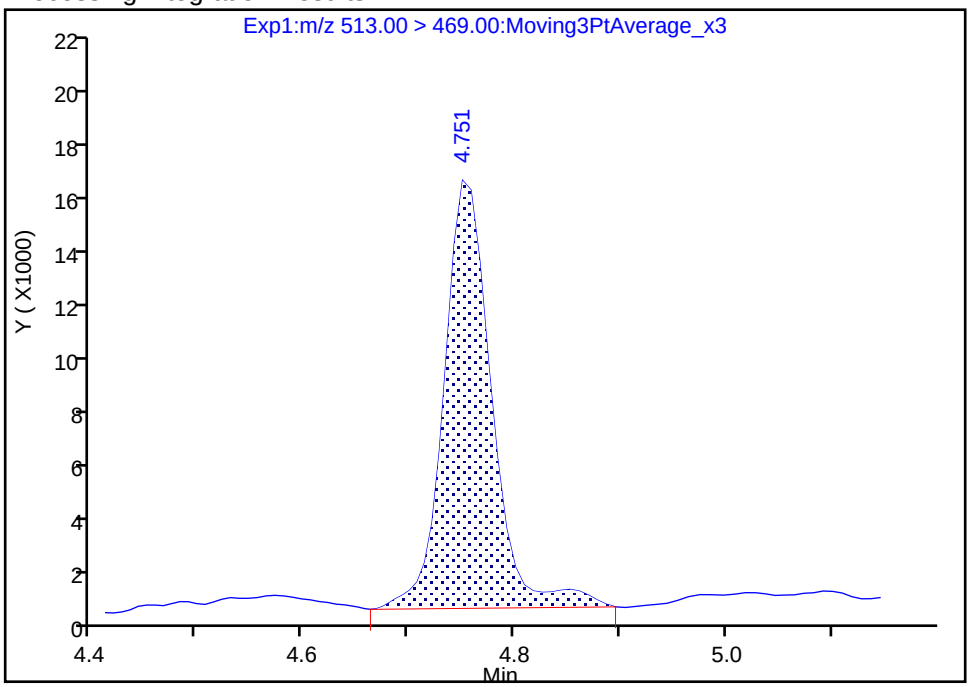
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

37 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

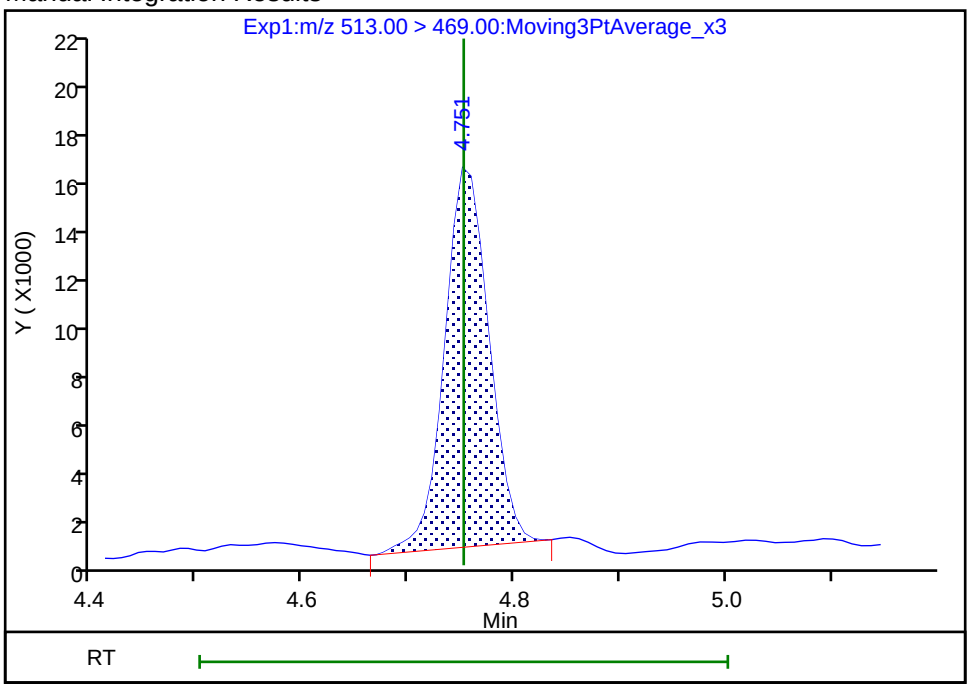
Processing Integration Results

RT: 4.75
Area: 47810
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 4.75
Area: 43490
Amount: 0.025383
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:19:35
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

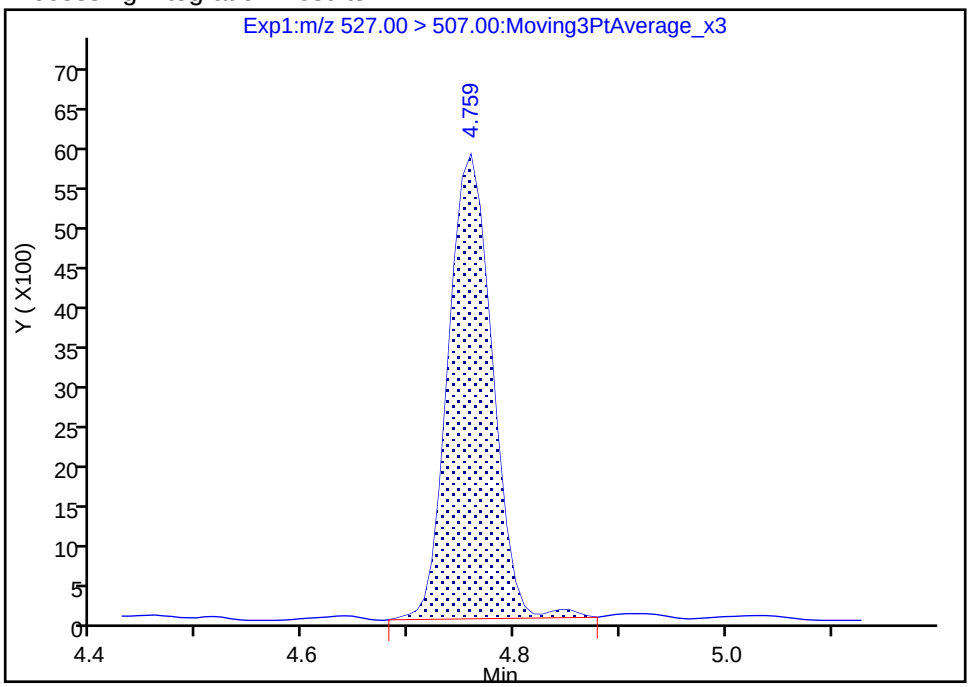
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

36 1H,1H,2H,2H-perfluorodecanesulfo, CAS: 39108-34-4

Signal: 1

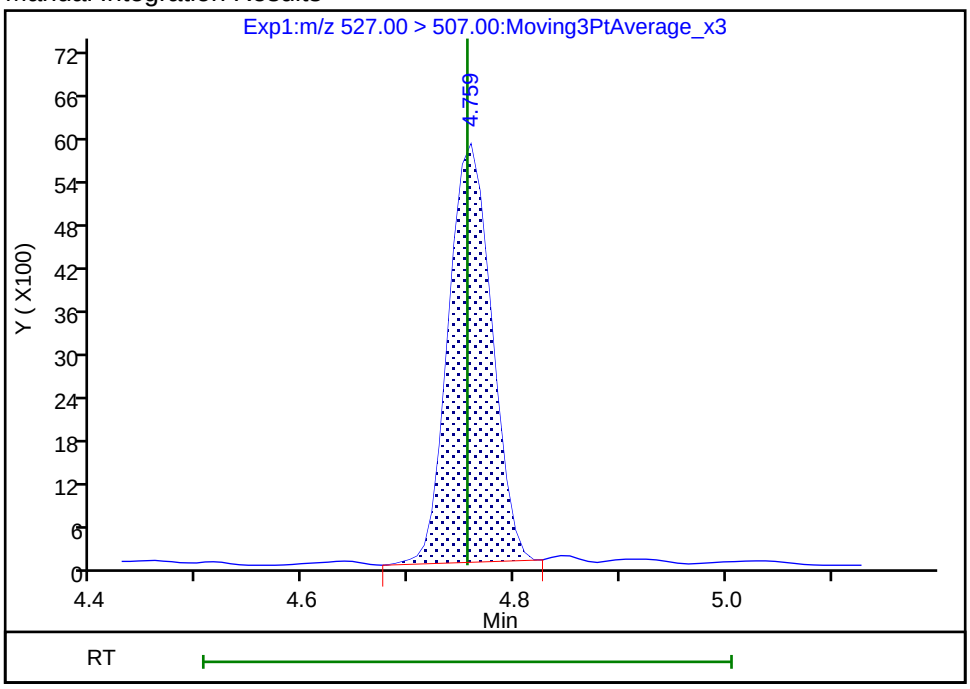
Processing Integration Results

RT: 4.76
Area: 16992
Amount: 0.023950
Amount Units: ng/ml



Manual Integration Results

RT: 4.76
Area: 16627
Amount: 0.023073
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:19:46
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

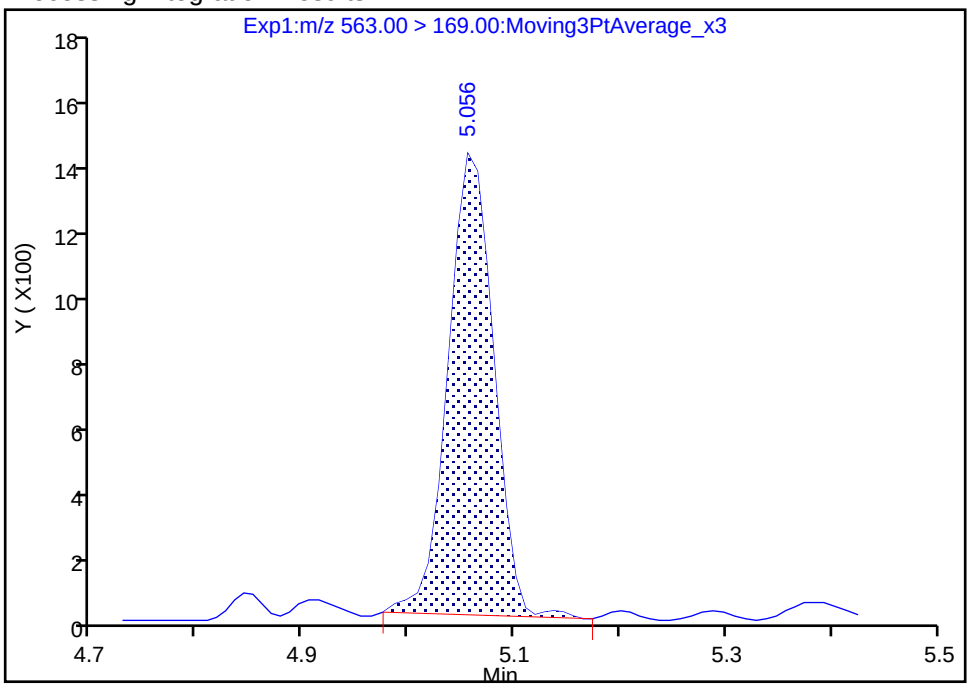
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

45 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 2

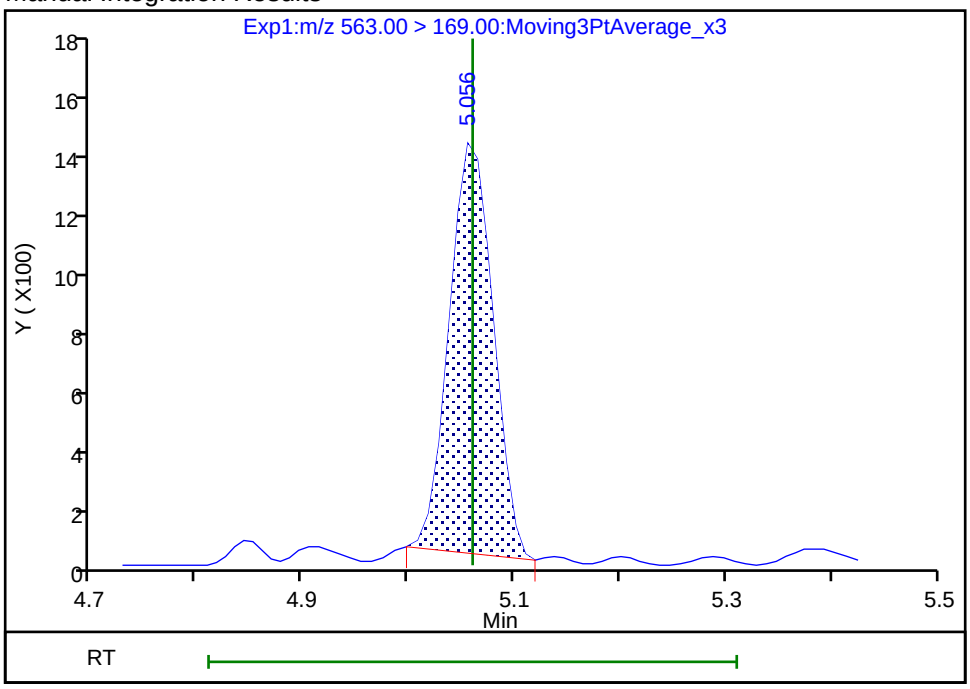
Processing Integration Results

RT: 5.06
Area: 4188
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.06
Area: 3958
Amount: 0.017833
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:24:55
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

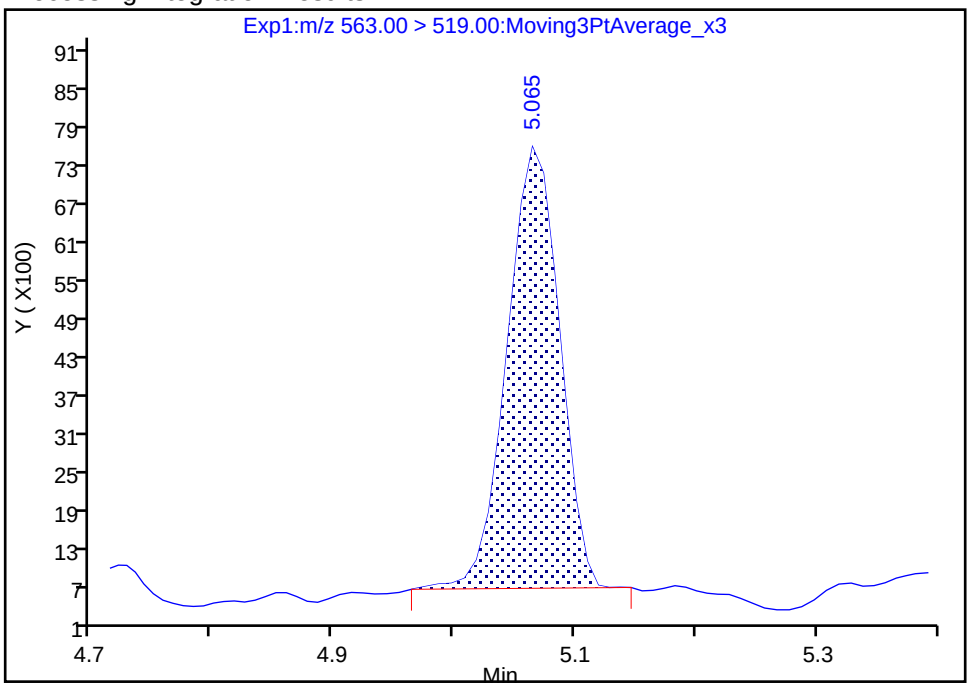
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

45 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

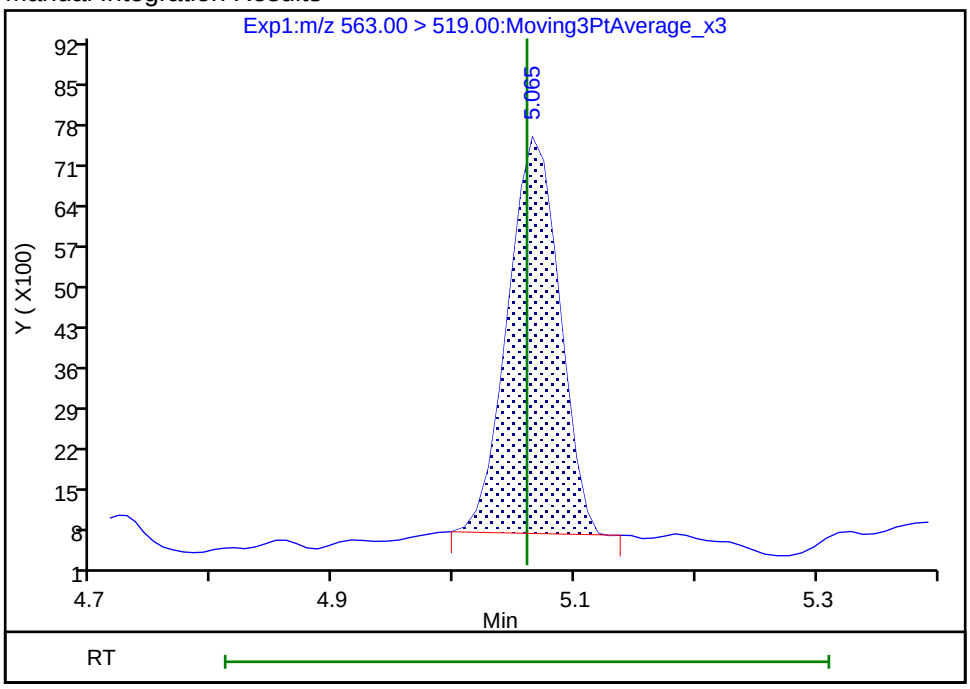
Processing Integration Results

RT: 5.06
Area: 20944
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.06
Area: 20441
Amount: 0.017833
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:25:03
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

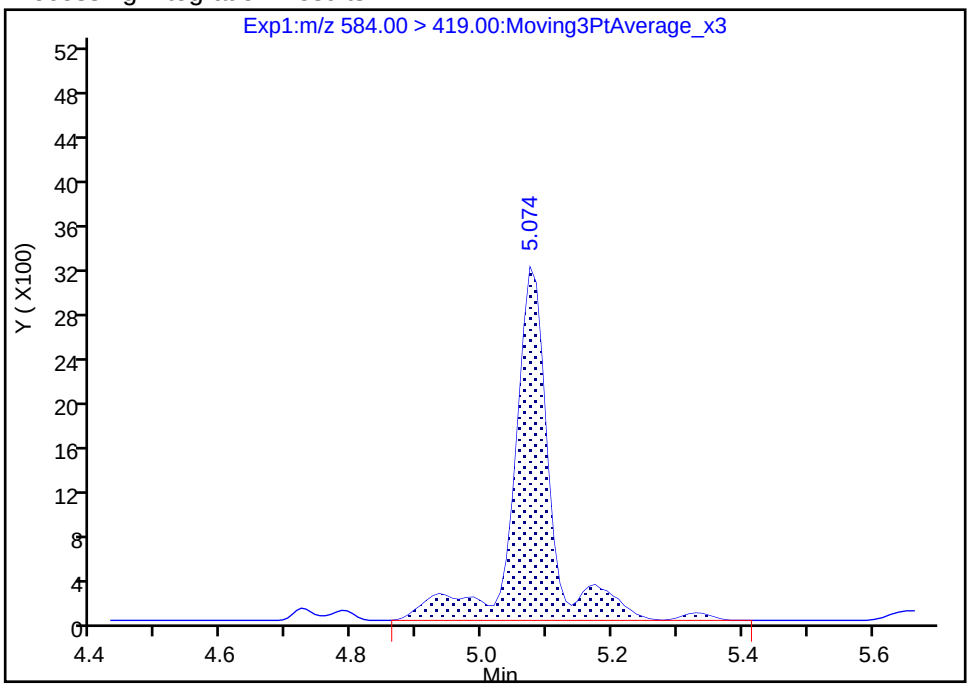
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

46 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

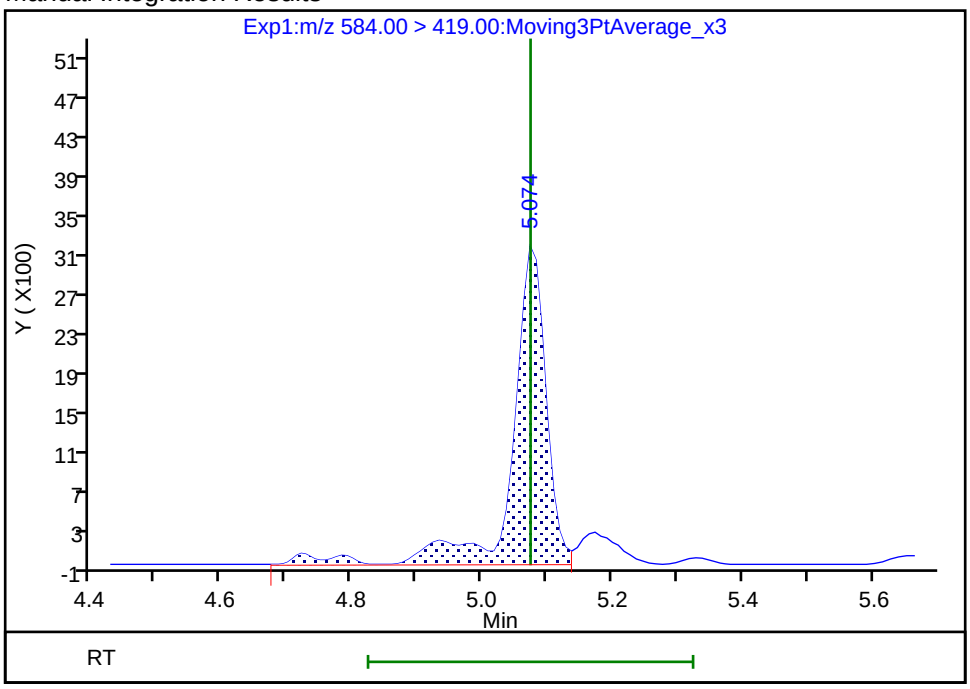
Processing Integration Results

RT: 5.07
Area: 12702
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.07
Area: 11820
Amount: 0.024450
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:20:27
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento

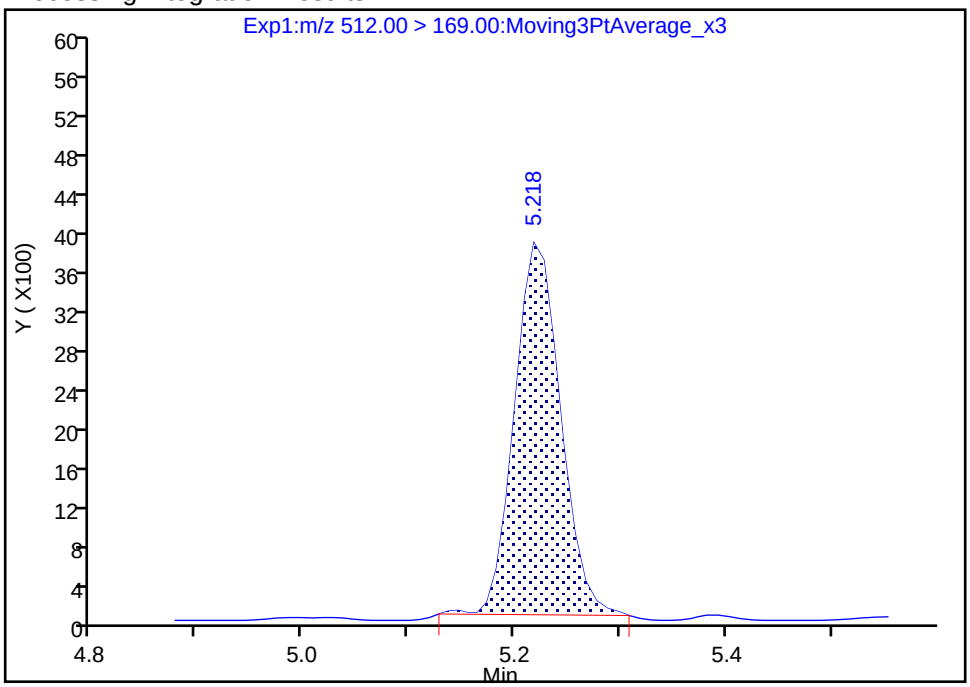
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

50 NMeFOSA, CAS: 31506-32-8

Signal: 1

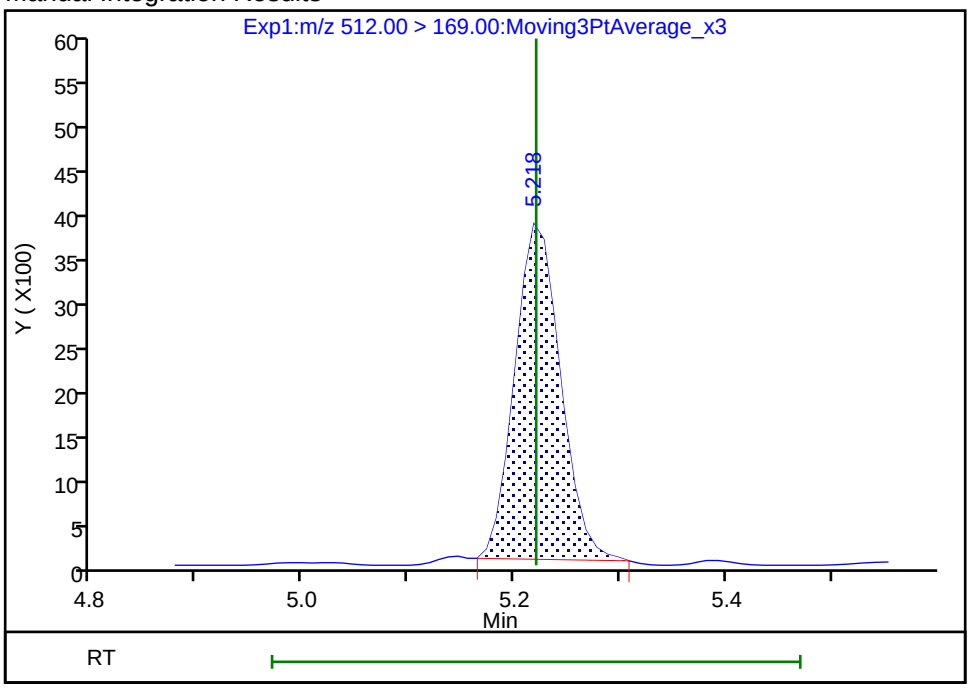
Processing Integration Results

RT: 5.22
Area: 11566
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.22
Area: 11445
Amount: 0.022900
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:25:25
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

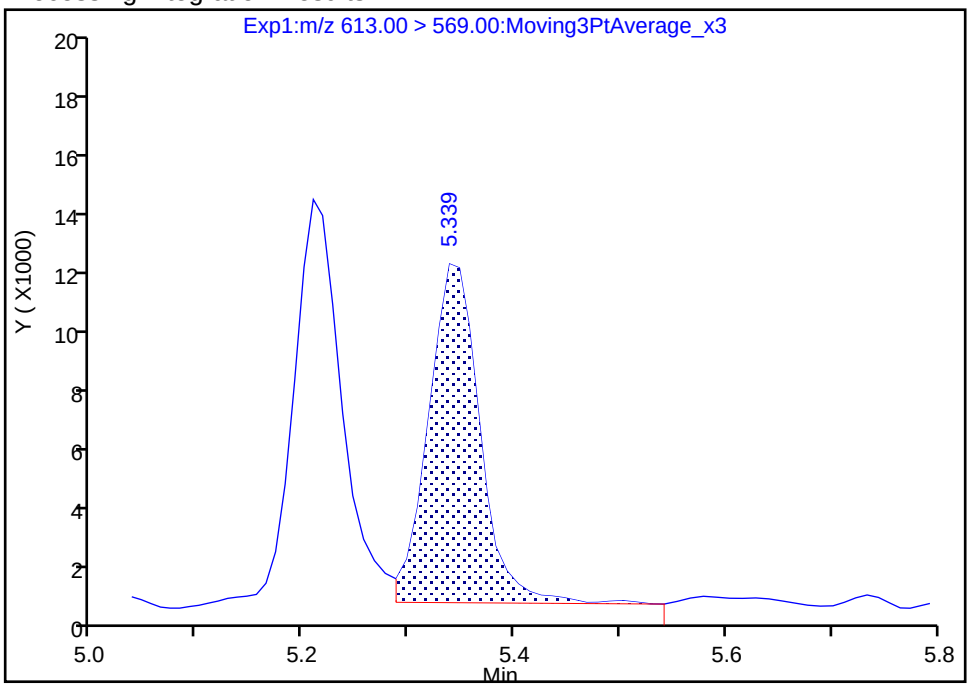
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

57 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

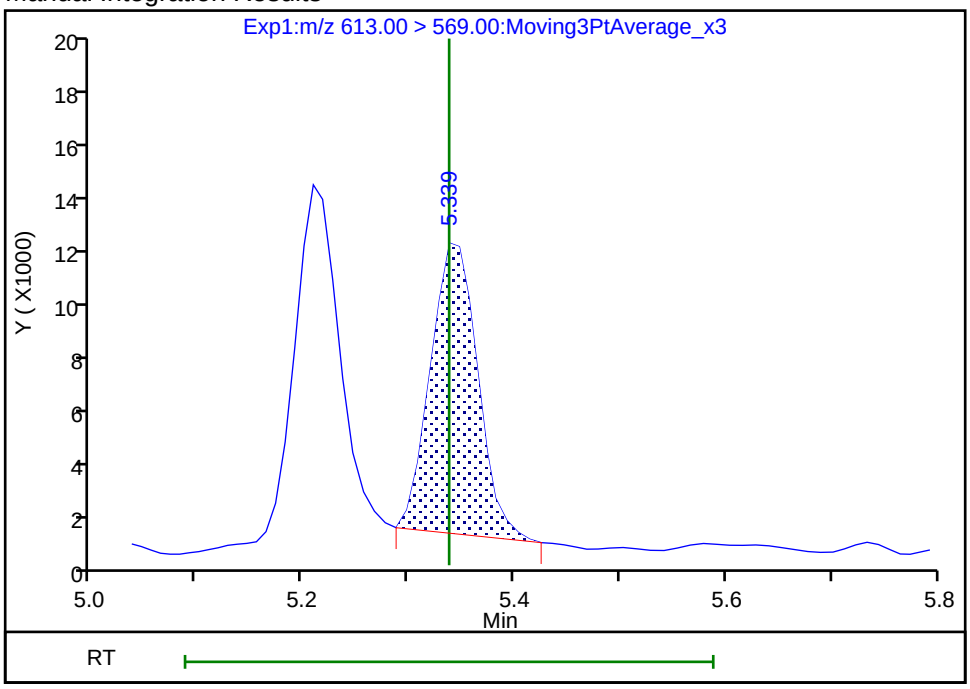
RT: 5.34
Area: 37284
Amount: 0.027392
Amount Units: ng/ml

Processing Integration Results



RT: 5.34
Area: 32430
Amount: 0.024321
Amount Units: ng/ml

Manual Integration Results



Reviewer: maxwellm, 04-Jun-2020 14:32:22
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

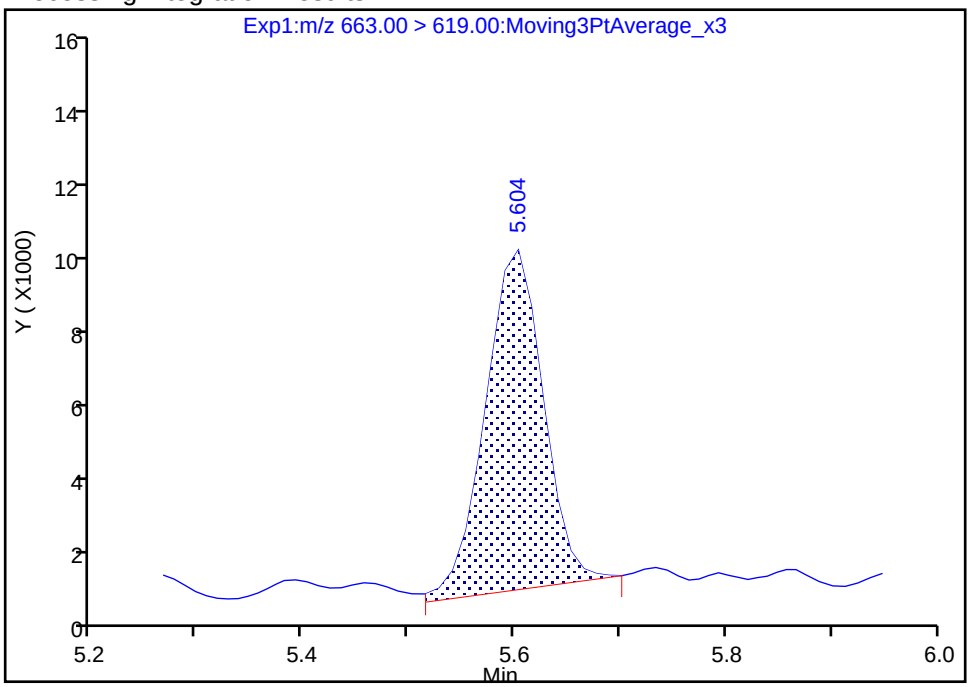
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

60 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

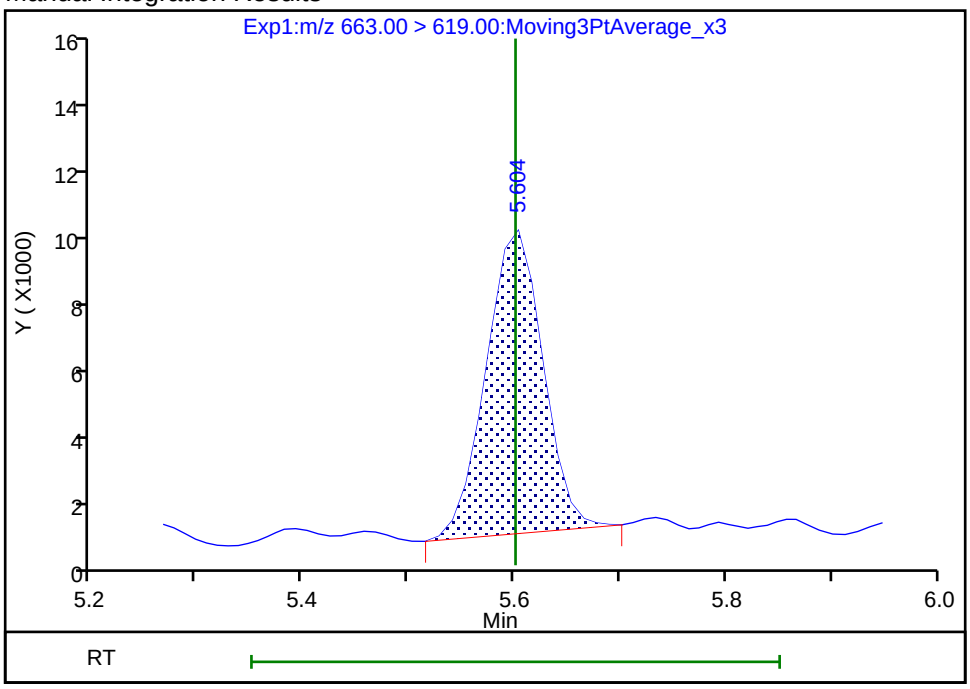
Processing Integration Results

RT: 5.60
Area: 33911
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.60
Area: 32713
Amount: 0.030517
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:26:03
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

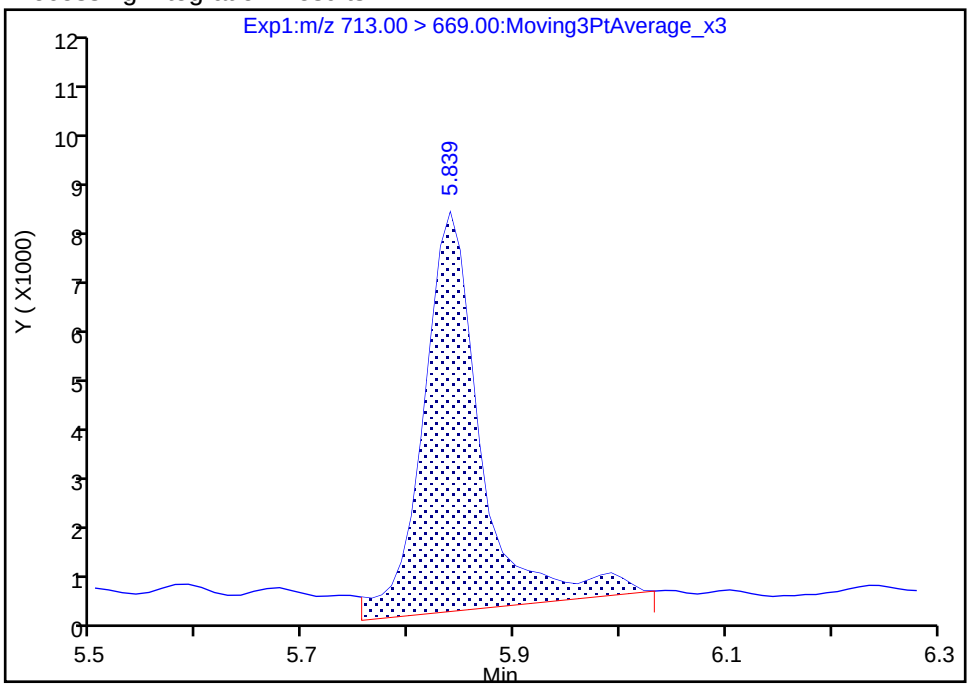
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d
Injection Date: 04-Jun-2020 11:56:53 Instrument ID: A15
Lims ID: IC L1 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

62 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

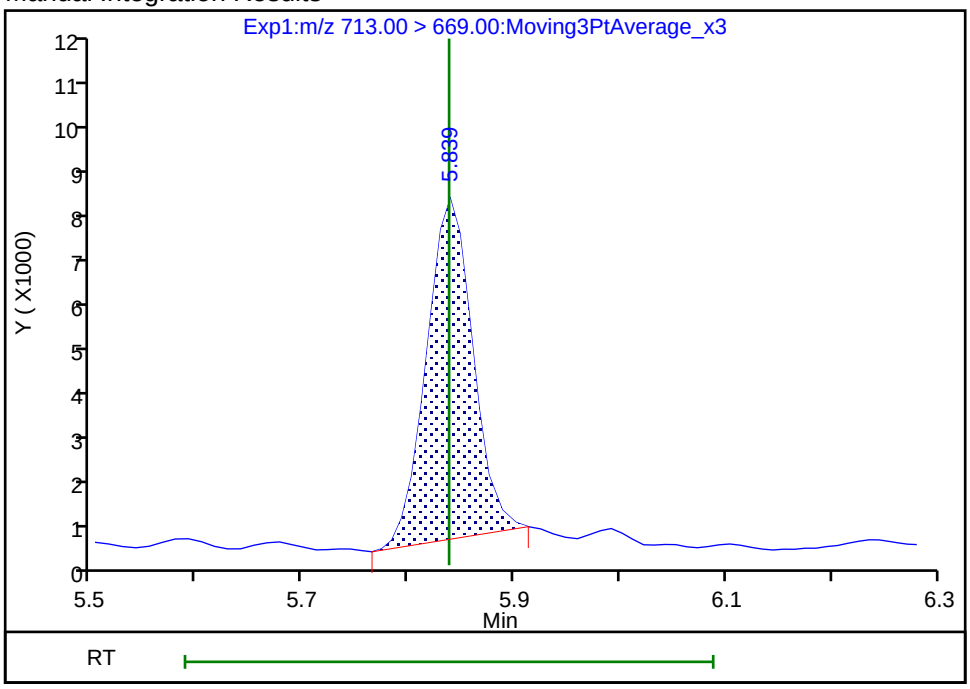
Processing Integration Results

RT: 5.84
Area: 29350
Amount: 0.025000
Amount Units: ng/ml



Manual Integration Results

RT: 5.84
Area: 22029
Amount: 0.026914
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:23:22
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

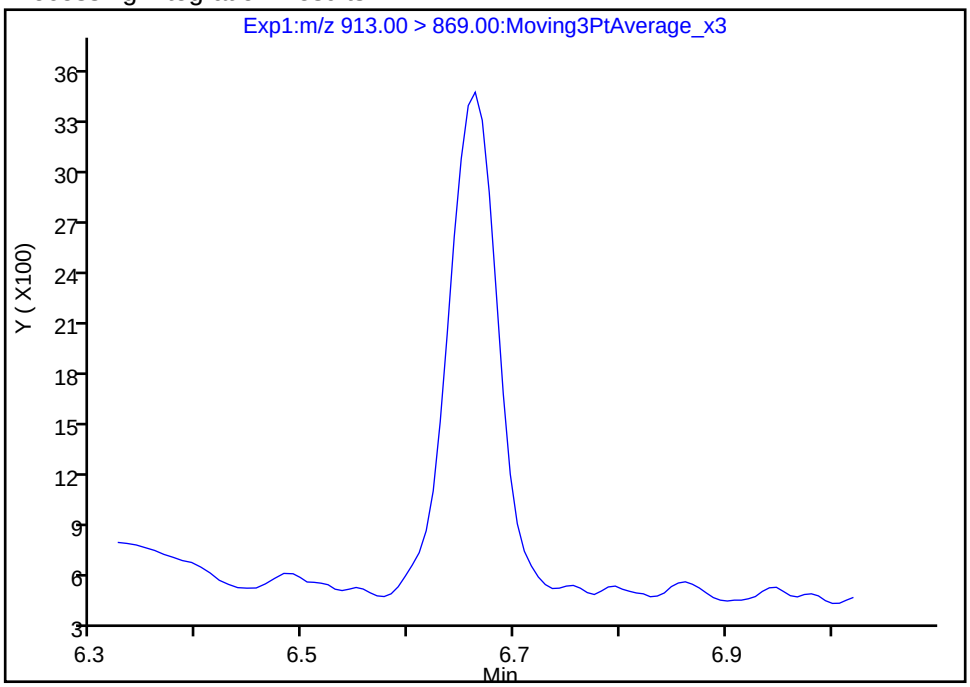
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

65 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 1

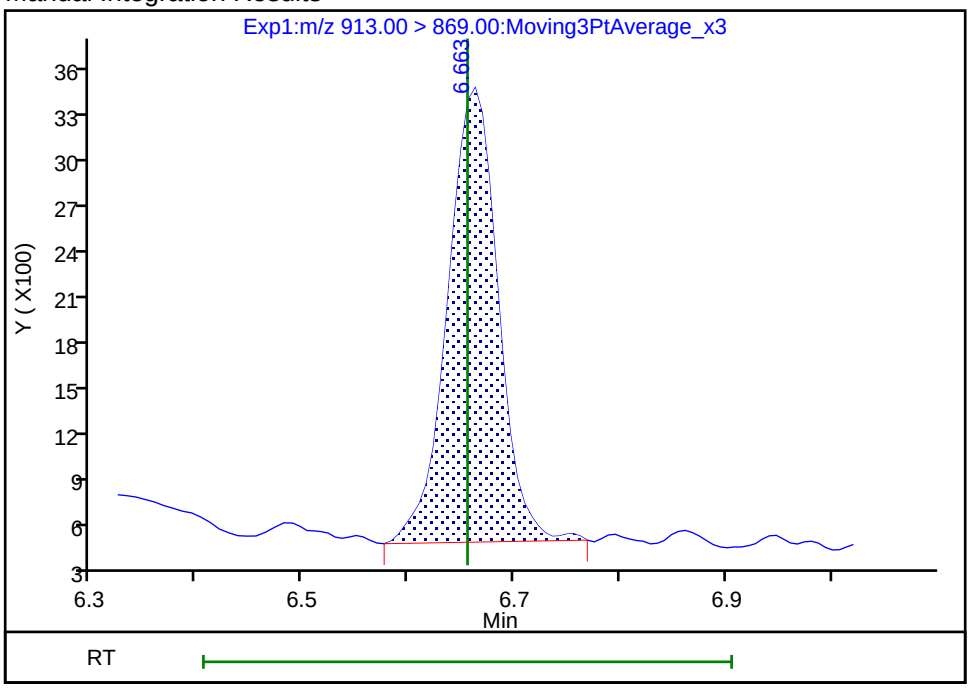
Not Detected
Expected RT: 6.66

Processing Integration Results



Manual Integration Results

RT: 6.66
Area: 9731
Amount: 0.026141
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:14:53
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

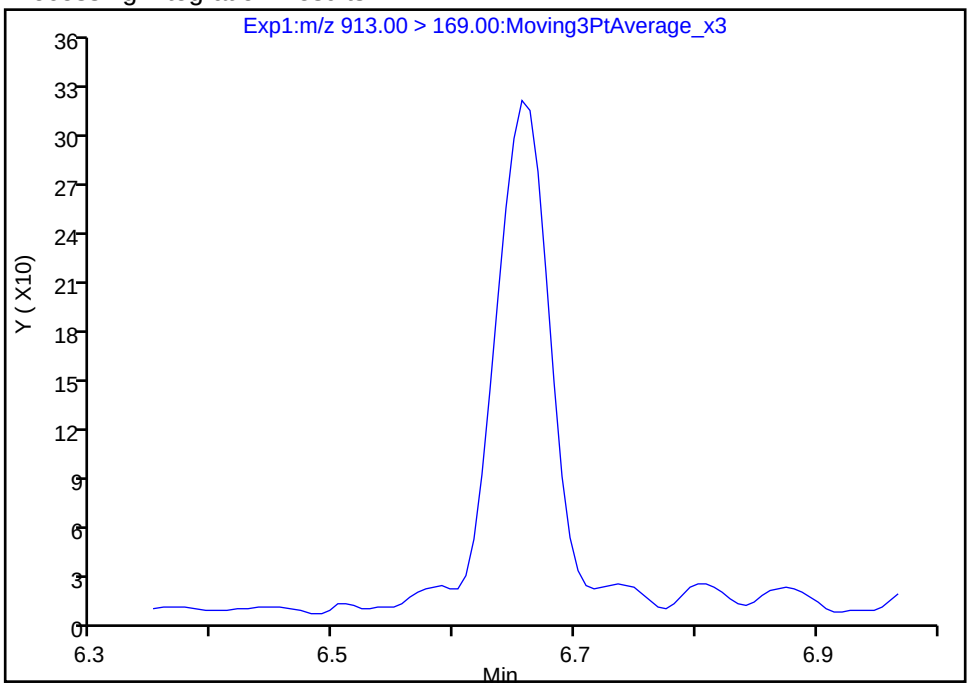
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_004.d				
Injection Date:	04-Jun-2020 11:56:53	Instrument ID:	A15		
Lims ID:	IC L1 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

65 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 2

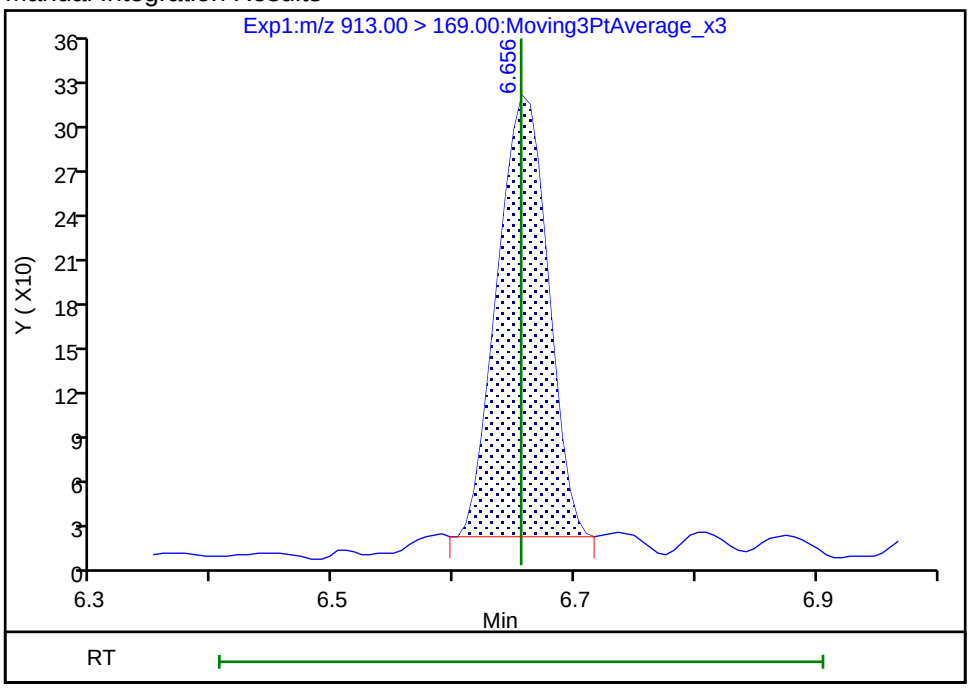
Not Detected
Expected RT: 6.66

Processing Integration Results



Manual Integration Results

RT: 6.66
Area: 863
Amount: 0.026141
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:14:58
Audit Action: Manually Integrated Audit Reason: Assign Peak

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Lims ID: IC L2 Full
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 04-Jun-2020 12:06:02 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 2 (20)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:14 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 12:30:44
Ratio Calibration: Average of Initial Calibration

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	2.544	2.549	-0.005	0.629	9299542	2.52		101	21143	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.544	2.551	-0.007	1.000	162849	0.0473		94.6	46.0	
D 4 13C5 PFPeA										
267.90 > 223.00	2.893	2.895	-0.002	0.715	8556695	2.59		104	15057	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.893	2.898	-0.005	1.000	176111	0.0511		102	13.2	M
D 9 13C3 PFBS										
301.90 > 80.00	2.923	2.930	-0.007	0.723	5257827	2.30		98.8	13652	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.923	2.930	-0.007	1.000	95864	0.0435	Target=2.14	98.4	49.9	
298.90 > 99.00	2.923	2.930	-0.007	1.000	43026		2.23(1.07-3.21)	98.4	28.7	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.221	3.226	-0.005	0.796	722978	2.37		102	1611	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.221	3.227	-0.006	1.000	30594	0.0438		93.8	719	
D 11 13C2 PFHxA										
315.00 > 270.00	3.256	3.267	-0.011	0.805	8119512	2.53		101	14899	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.256	3.267	-0.011	1.000	152223	0.0500	Target=15.73	100.0	78.9	
313.00 > 119.00	3.256	3.267	-0.011	1.000	9386		16.22(7.86-23.59)	100.0	31.1	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.276	3.285	-0.009	1.121	73997	0.0446	Target=2.69	95.1	533	
349.00 > 99.00	3.276	3.285	-0.009	1.121	29851		2.48(1.35-4.04)	95.1	198	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.382	3.386	-0.004	0.836	1849556	2.52		101	8739	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.382	3.386	-0.004	1.000	30986	0.0459		91.7	443	
D 18 13C4 PFHpA										
367.00 > 322.00	3.654	3.661	-0.007	0.903	6619945	2.60		104	11550	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.654	3.662	-0.008	1.000	134247	0.0502	Target=3.80	100	52.5	
363.00 > 169.00	3.654	3.662	-0.008	1.000	33687		3.99(1.90-5.71)	100	180	
D 17 18O2 PFHxS										
403.00 > 84.00	3.664	3.667	-0.003	0.906	2605903	2.37		100	14821	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.664	3.670	-0.006	1.000	59028	0.0477	Target=2.99	105	582	
399.00 > 99.00	3.664	3.670	-0.006	1.000	19559		3.02(1.50-4.49)	105	75.7	M
19 DONA										
377.00 > 251.00	3.703	3.709	-0.006	0.843	275714	0.0446	Target=2.14	94.6	998	
377.00 > 85.00	3.703	3.709	-0.006	0.843	128834		2.14(1.07-3.21)	94.6	720	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.021	4.030	-0.009	0.994	854355	2.54		107	3846	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.021	4.032	-0.011	1.000	31305	0.0443		93.4	365	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.037	4.046	-0.009	0.919	41734	0.0453	Target=3.77	95.2	446	
449.00 > 99.00	4.037	4.046	-0.009	0.919	10947		3.81(1.89-5.66)	95.2	92.3	
$ 26 13C8 PFOA										
421.00 > 376.00	4.037	4.046	-0.009	0.998	3536219	2.50		102	12495	
D 25 13C4 PFOA										
417.00 > 372.00	4.045	4.051	-0.006	1.000	5799255	2.52		101	11925	
* 23 13C2 PFOA										
415.00 > 370.00	4.045	4.051	-0.006		5834898	2.50			9877	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.045	4.052	-0.007	1.000	120876	0.0493	Target=2.88	98.6	8.9	M
413.00 > 169.00	4.045	4.052	-0.007	1.000	47187		2.56(1.44-4.31)	98.6	147	M
$ 28 13C8 PFOS										
507.00 > 99.00	4.393	4.400	-0.007	1.086	699275	2.41		101	4391	
D 27 13C4 PFOS										
503.00 > 80.00	4.393	4.402	-0.009	1.086	2017066	2.36		98.8	5670	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.393	4.403	-0.010	1.000	37206	0.0446	Target=4.89	96.0	225	M
499.00 > 99.00	4.393	4.403	-0.010	1.000	7850		4.74(2.44-7.33)	96.0	59.2	M
31 Perfluorononanoic acid										M
463.00 > 419.00	4.409	4.417	-0.008	1.000	85362	0.0478	Target=7.00	95.5	16.9	M
463.00 > 169.00	4.409	4.417	-0.008	1.000	13218		6.46(3.50-10.51)	95.5	85.3	
D 30 13C5 PFNA										
468.00 > 423.00	4.409	4.417	-0.008	1.090	4405249	2.50		100	8193	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.586	4.592	-0.006	1.044	97462	0.0423		90.8	639	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.725	4.732	-0.007	1.076	33593	0.0498	Target=2.77	104	75.2	
549.00 > 99.00	4.725	4.732	-0.007	1.076	12630		2.66(1.38-4.15)	104	163	
D 33 13C8 FOSA										
506.00 > 78.00	4.739	4.747	-0.008	1.172	4396116	2.59		104	6942	
34 Perfluorooctanesulfonamide										M
498.00 > 78.00	4.739	4.749	-0.010	1.000	74988	0.0486		97.1	410	M
37 Perfluorodecanoic acid										M
513.00 > 469.00	4.746	4.752	-0.006	1.000	82296	0.0513	Target=10.36	103	24.6	M
513.00 > 169.00	4.746	4.752	-0.006	1.000	7292		11.29(5.18-15.54)	103	56.4	
D 39 13C2 PFDA										
515.00 > 470.00	4.746	4.754	-0.008	1.173	4154723	2.48		99.0	9894	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.746	4.755	-0.009	1.000	33061	0.0464		96.8	306	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.746	4.755	-0.009	1.173	1046506	2.61		109	7889	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.910	4.912	-0.002	1.214	1544095	2.46		98.6	2553	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.910	4.915	-0.005	1.000	20230	0.0449		89.8	44.0	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.032	5.037	-0.005	1.145	26992	0.0456	Target=2.97	94.7	133	
599.00 > 99.00	5.032	5.037	-0.005	1.145	10224		2.64(1.49-4.46)	94.7	102	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.050	5.060	-0.010	0.998	43073	0.0387	Target=7.56	77.5	25.0	
563.00 > 169.00	5.059	5.060	-0.001	1.000	6384		6.75(3.78-11.34)	77.5	60.9	
D 43 13C2 PFUnA										
565.00 > 520.00	5.059	5.062	-0.003	1.251	3852340	2.69		108	9771	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.068	5.071	-0.003	1.253	1665421	2.61		104	1948	
46 N-ethylperfluorooctanesulfonamid										M
584.00 > 419.00	5.068	5.075	-0.007	1.000	21533	0.0457		91.5	118	M
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.186	5.191	-0.005	1.180	98667	0.0453		96.2	427	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.195	5.198	-0.003	1.284	5365729	12.5		100	4293	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.204	5.209	-0.005	1.002	22047	0.0491		98.1	57.1	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.213	5.215	-0.002	1.289	1285651	2.40		95.8	284	
50 NMeFOSA										M
512.00 > 169.00	5.213	5.220	-0.007	1.000	21251	0.0439		87.8	163	M
57 Perfluorododecanoic acid										M
613.00 > 569.00	5.333	5.338	-0.005	1.000	65400	0.0495	Target=7.18	98.9	11.6	M
613.00 > 169.00	5.342	5.338	0.004	1.002	10066		6.50(3.59-10.76)	98.9	98.0	
D 56 13C2 PFDoA										
615.00 > 570.00	5.333	5.339	-0.006	1.318	3366889	2.66		106	9839	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.361	5.362	-0.001	1.129	24991	0.0445		92.2	283	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.361	5.364	-0.003	1.325	6383659	12.2		97.4	4523	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.376	5.376	0.0	1.003	25624	0.0490		98.0	70.9	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.384	5.387	-0.003	1.331	1317134	2.42		96.7	699	
55 N-ethylperfluoro-1-octanesulfona										M
526.00 > 169.00	5.384	5.395	-0.011	1.000	24512	0.0464		92.9	180	M
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.558	5.562	-0.004	1.265	8788	0.0428	Target=0.79	88.4	214	
699.00 > 99.00	5.558	5.562	-0.004	1.265	12117		0.73(0.39-1.18)	88.4	219	
60 Perfluorotridecanoic acid										M
663.00 > 619.00	5.595	5.601	-0.006	1.049	44007	0.0414	Target=6.63	82.8	7.6	M
663.00 > 169.00	5.595	5.601	-0.006	1.049	7836		5.62(3.32-9.95)	82.8	120	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.833	5.835	-0.002	1.442	2031772	2.45		98.1	7513	
62 Perfluorotetradecanoic acid										M
713.00 > 669.00	5.833	5.838	-0.005	1.000	38411	0.0473	Target=8.46	94.5	10.5	M
713.00 > 219.00	5.833	5.838	-0.005	1.000	5859		6.56(4.23-12.69)	94.5	154	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.257	6.257	0.0	1.547	1921227	2.80		112	6321	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.257	6.258	-0.001	1.000	45682	0.0465	Target=7.92	93.0	6.9	
813.00 > 169.00	6.257	6.258	-0.001	1.000	6195		7.37(3.96-11.88)	93.0	107	
65 Perfluorooctadecanoic acid										M
913.00 > 869.00	6.652	6.655	-0.003	1.063	16349	0.0432	Target=10.24	86.5	3.7	M
913.00 > 169.00	6.652	6.655	-0.003	1.063	1654		9.88(5.12-15.36)	86.5	42.0	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00020 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:16 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d

Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15

Lims ID: IC L2 Full

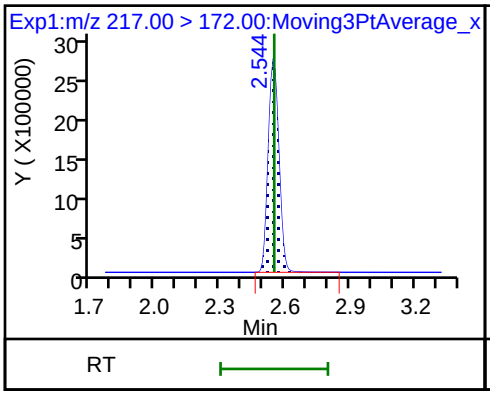
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3

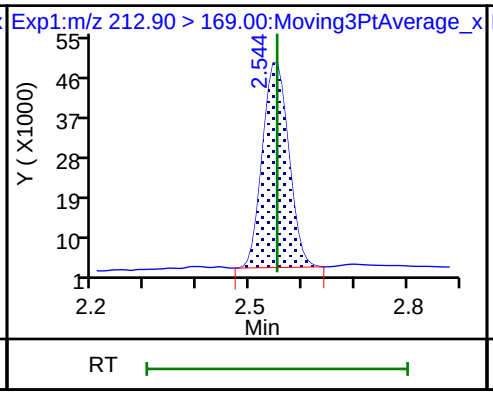
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

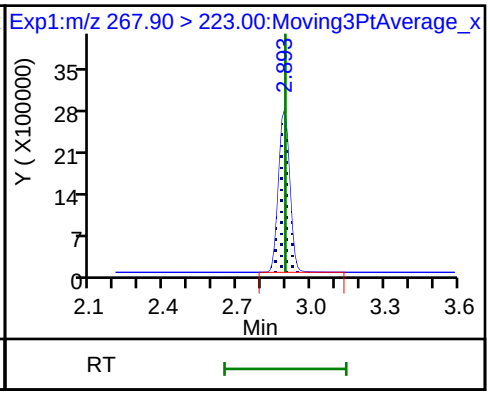
D 1 13C4 PFBA



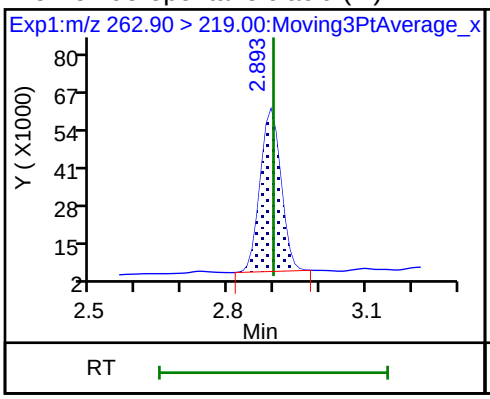
2 Perfluorobutanoic acid



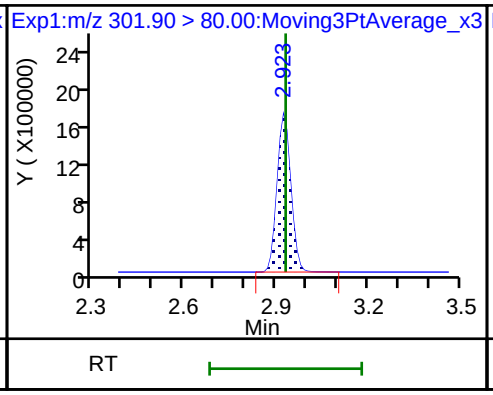
D 4 13C5 PFPeA



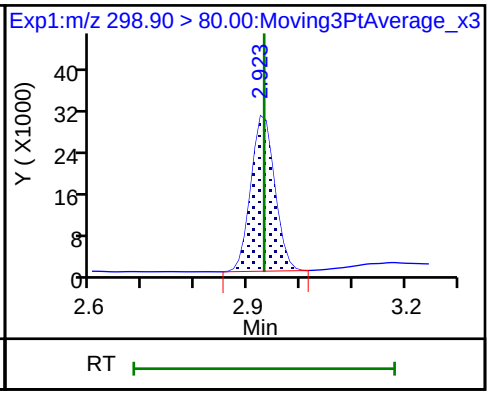
5 Perfluoropentanoic acid (M)



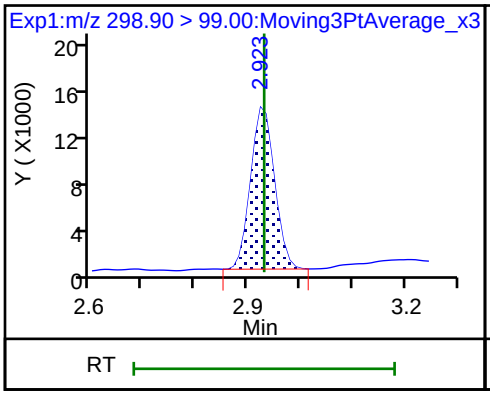
D 9 13C3 PFBS



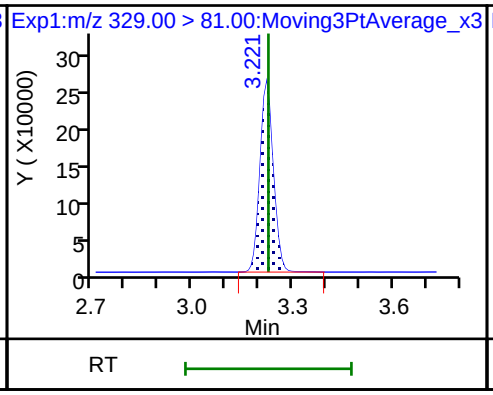
6 Perfluorobutanesulfonic acid



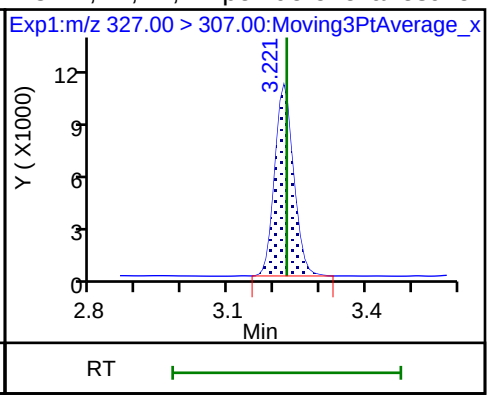
6 Perfluorobutanesulfonic acid



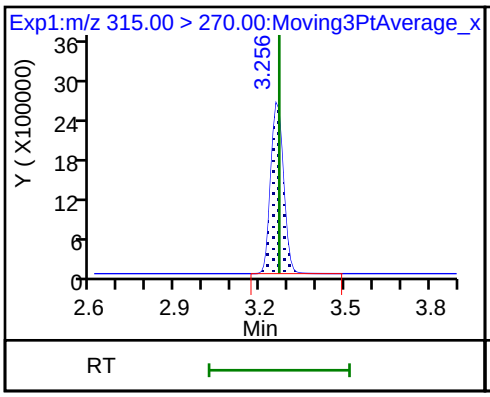
D 7 M2-4:2 FTS



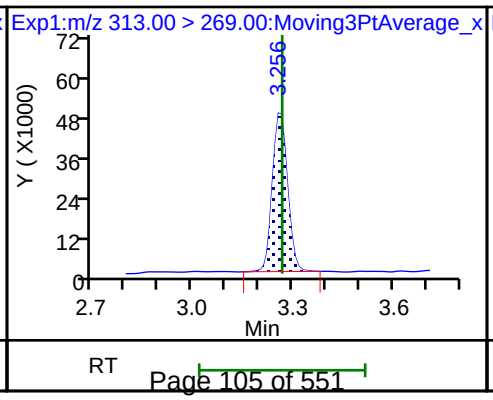
8 1H,1H,2H,2H-perfluorohexanesulfo



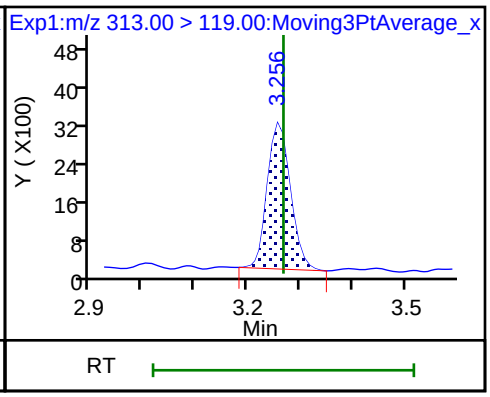
D 11 13C2 PFHxA



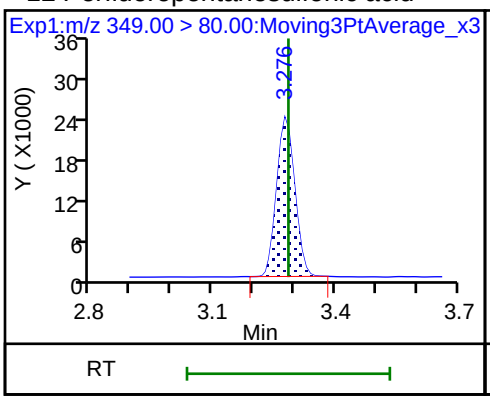
10 Perfluorohexanoic acid



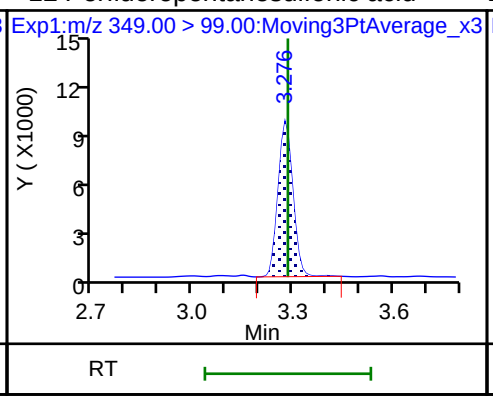
10 Perfluorohexanoic acid



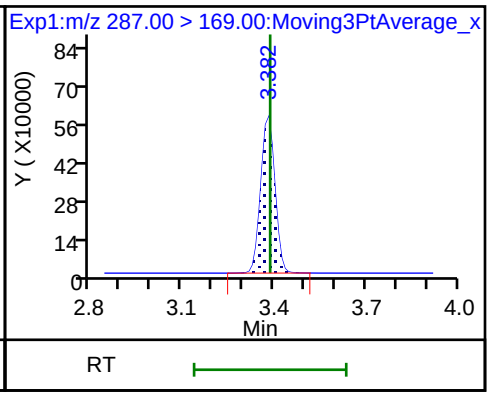
12 Perfluoropentanesulfonic acid



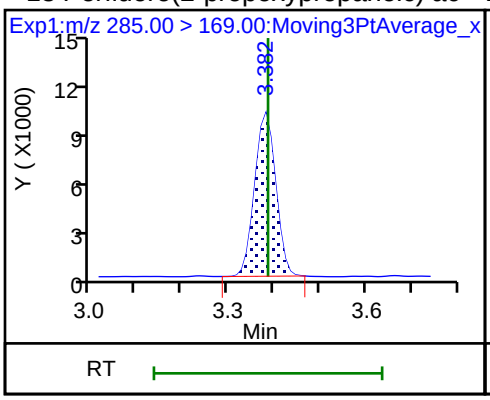
12 Perfluoropentanesulfonic acid



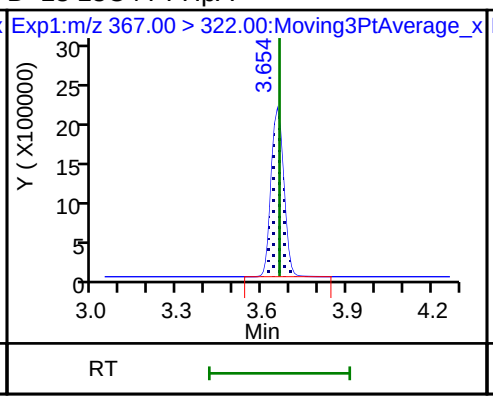
D 14 13C3 HFPO-DA



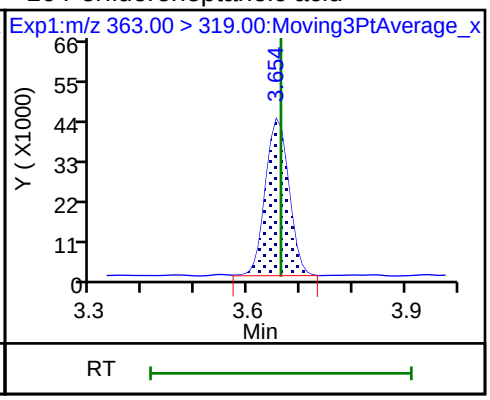
13 Perfluoro(2-propoxypropanoic) ac



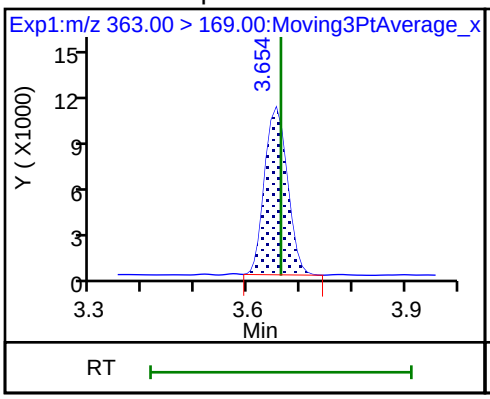
D 18 13C4 PFHpA



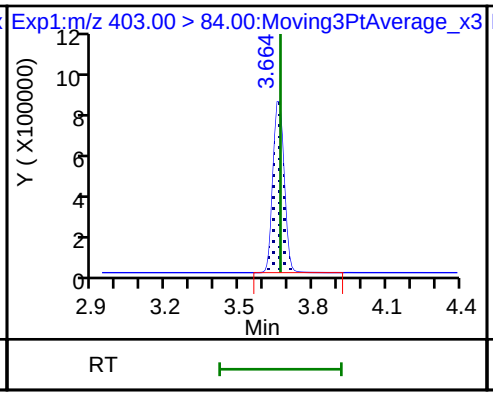
16 Perfluoroheptanoic acid



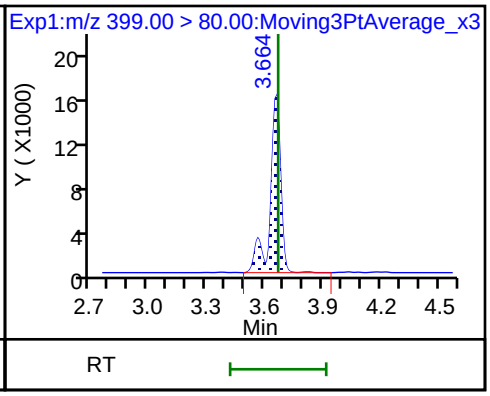
16 Perfluoroheptanoic acid



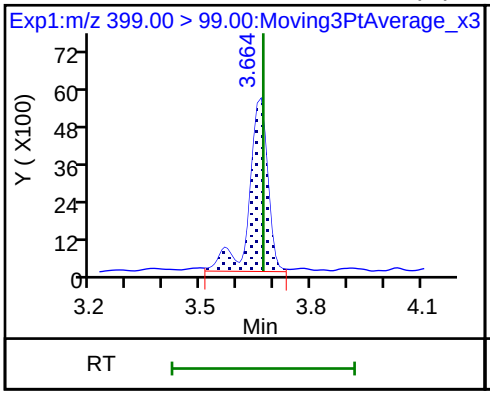
D 17 18O2 PFHxS



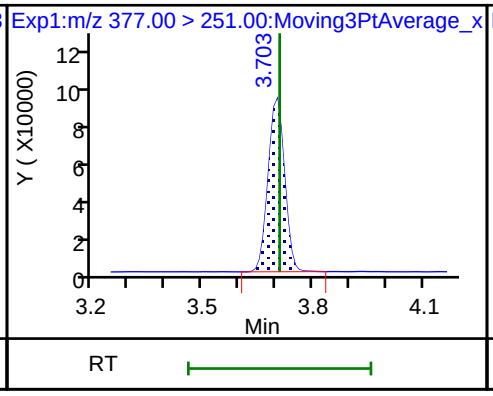
15 Perfluorohexanesulfonic acid



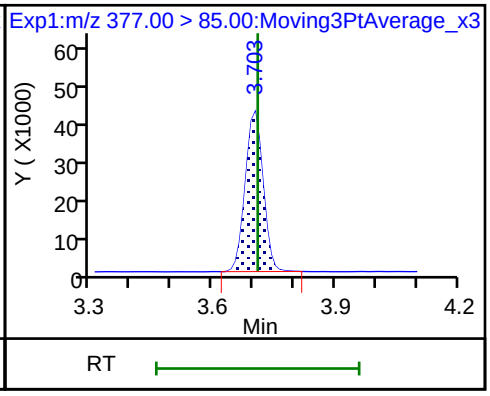
15 Perfluorohexanesulfonic acid (M)



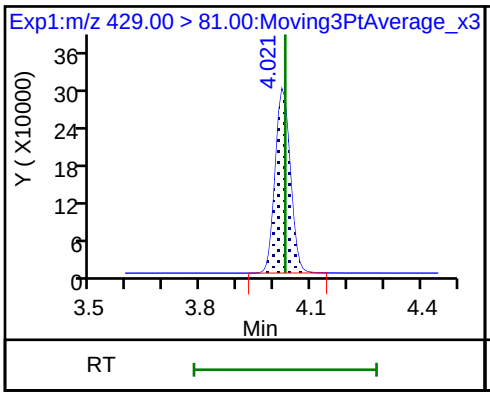
19 DONA



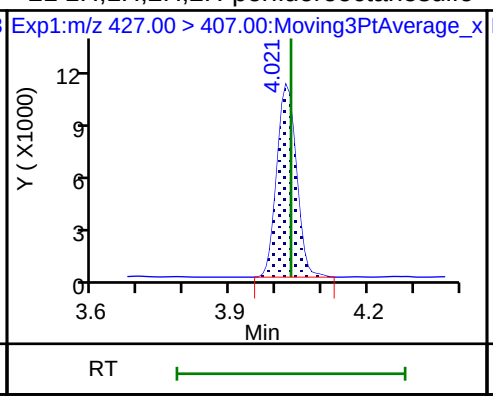
19 DONA



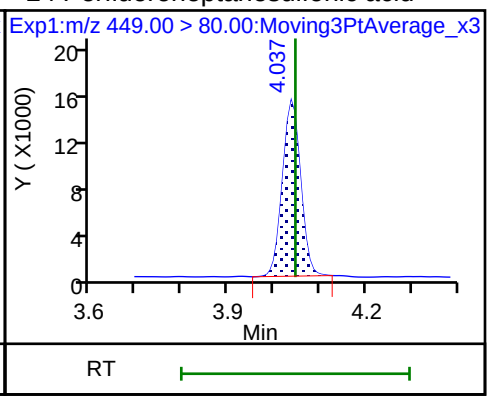
D 20 M2-6:2 FTS



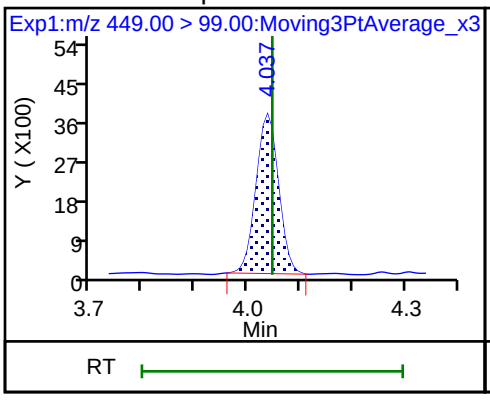
21 1H,1H,2H,2H-perfluorooctanesulfo



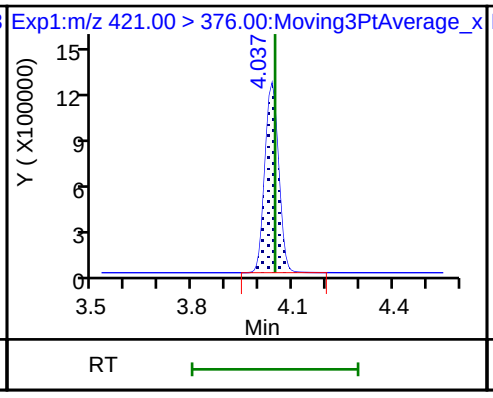
24 Perfluoroheptanesulfonic acid



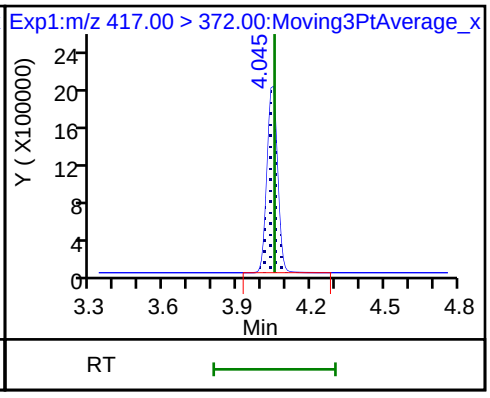
24 Perfluoroheptanesulfonic acid



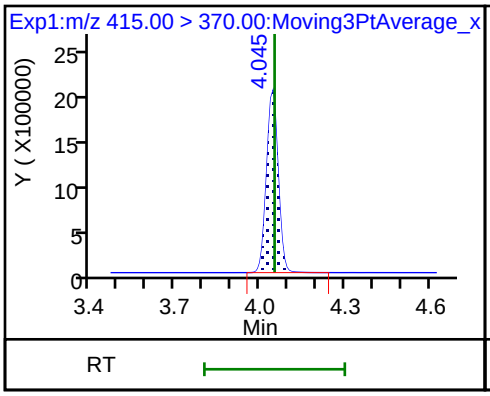
$ 26 13C8 PFOA



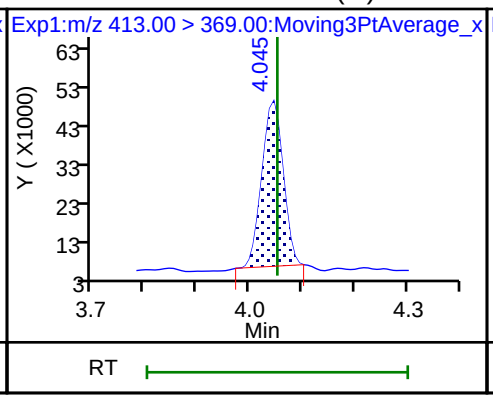
D 25 13C4 PFOA



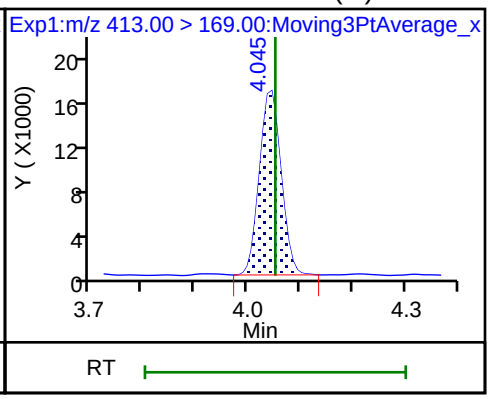
* 23 13C2 PFOA



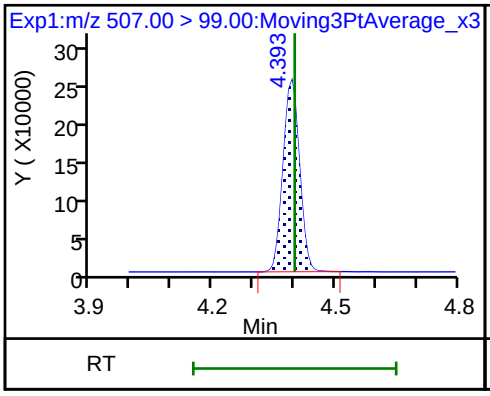
22 Perfluorooctanoic acid (M)



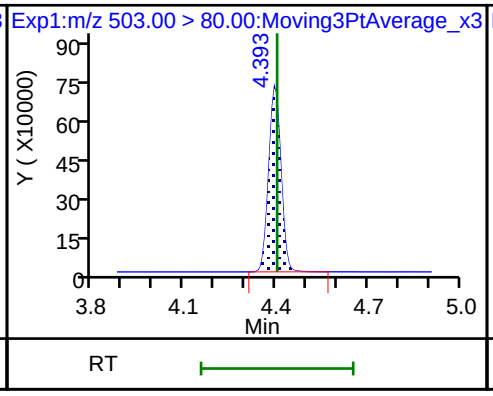
22 Perfluorooctanoic acid (M)



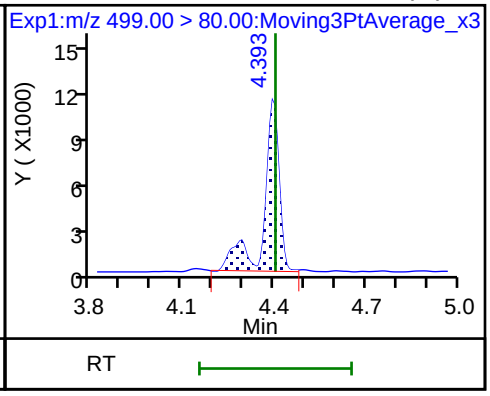
$ 28 13C8 PFOS



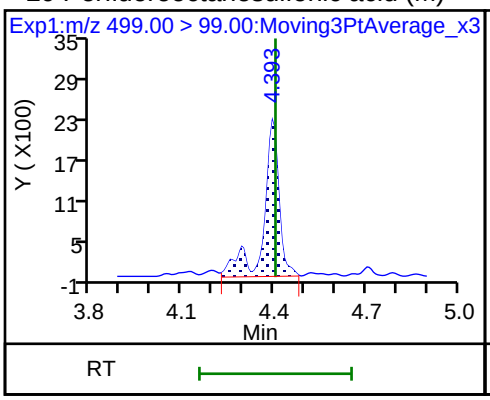
D 27 13C4 PFOS



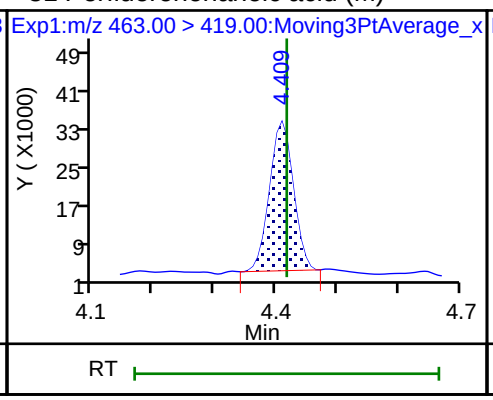
29 Perfluorooctanesulfonic acid (M)



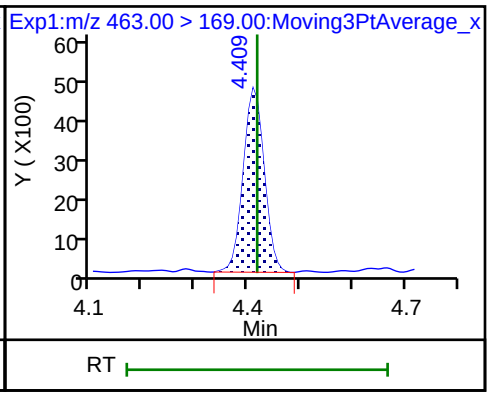
29 Perfluorooctanesulfonic acid (M)



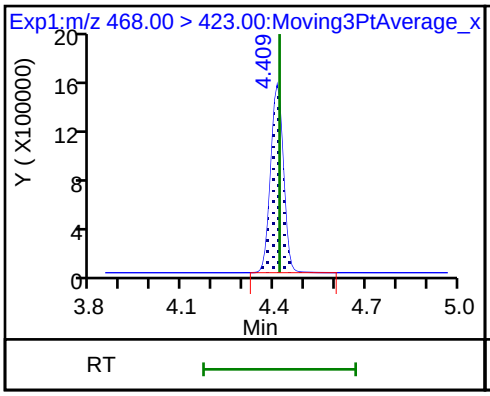
31 Perfluorononanoic acid (M)



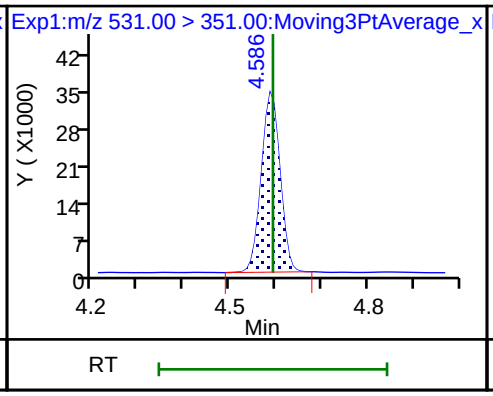
31 Perfluorononanoic acid



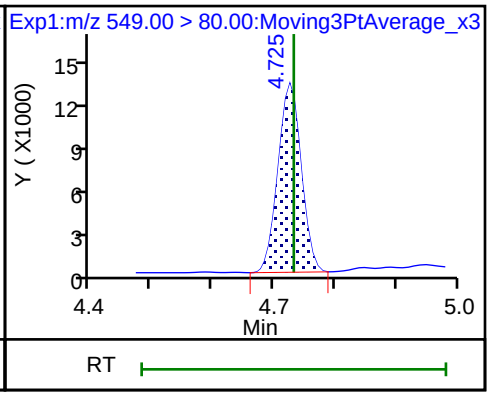
D 30 13C5 PFNA



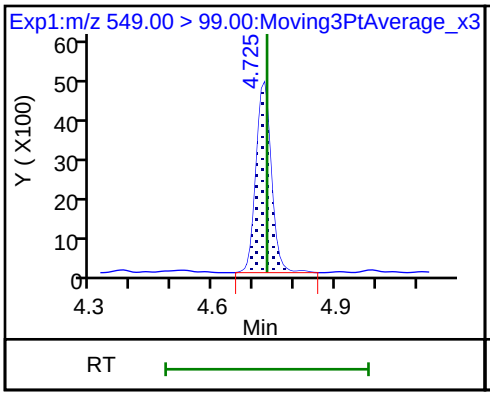
32 9-Chlorohexadecafluoro-3-oxanona



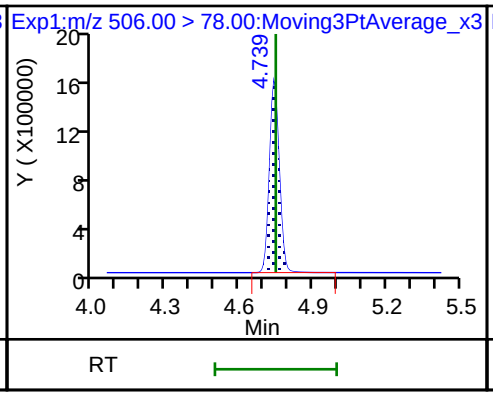
35 Perfluorononanesulfonic acid



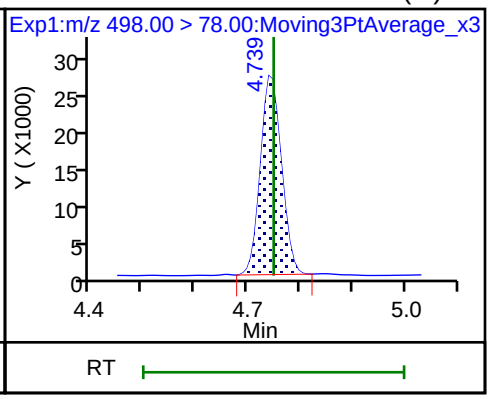
35 Perfluorononanesulfonic acid



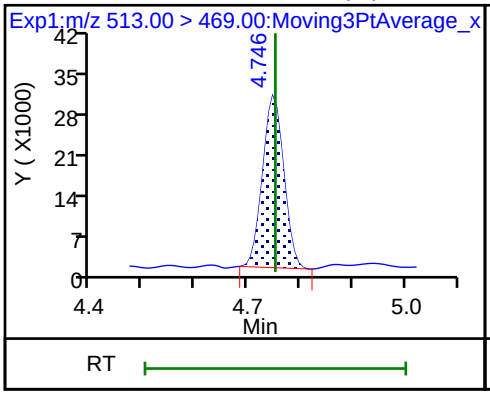
D 33 13C8 FOSA



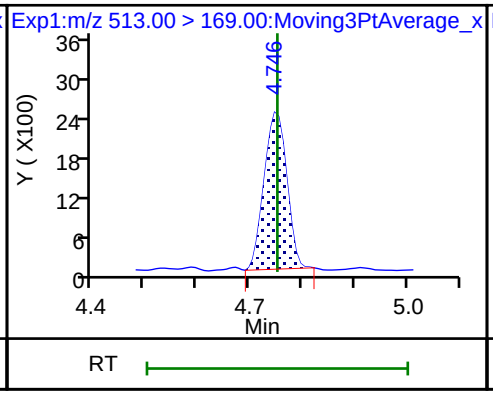
34 Perfluorooctanesulfonamide (M)



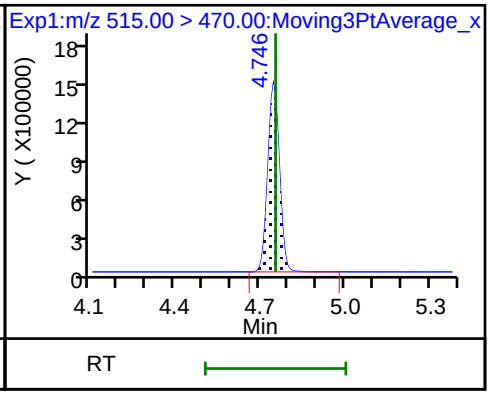
37 Perfluorodecanoic acid (M)



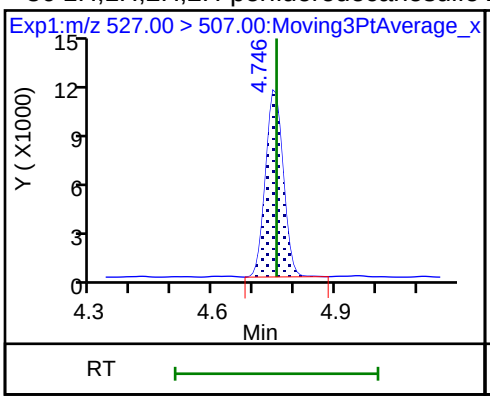
37 Perfluorodecanoic acid



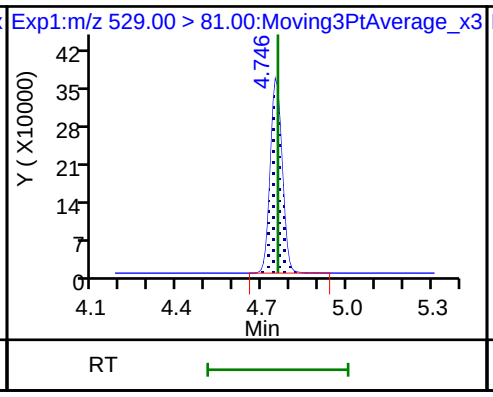
D 39 13C2 PFDA



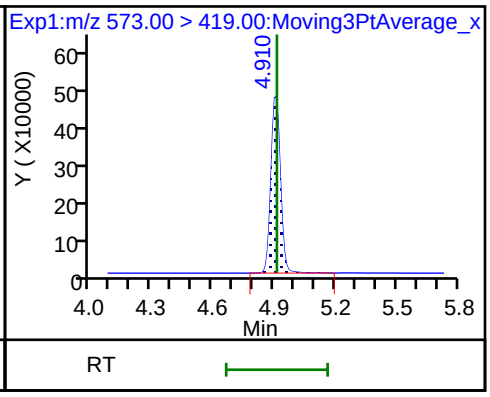
36 1H,1H,2H,2H-perfluorodecanesulfo



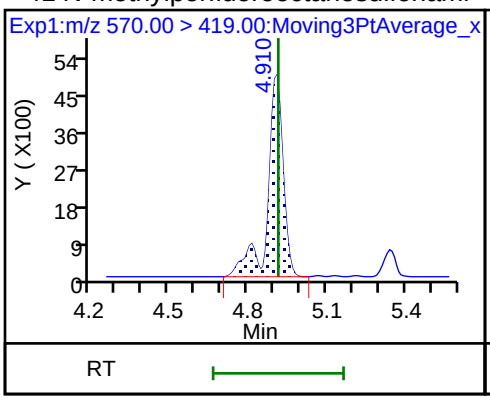
D 38 M2-8:2 FTS



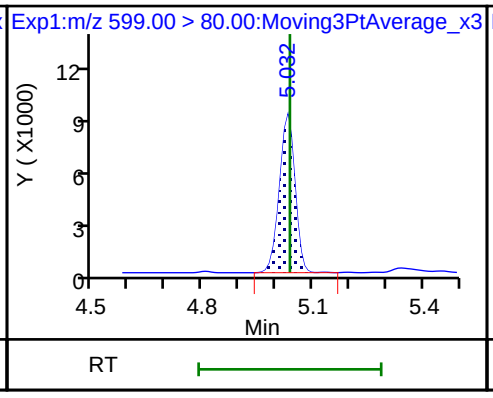
D 40 d3-NMeFOSAA



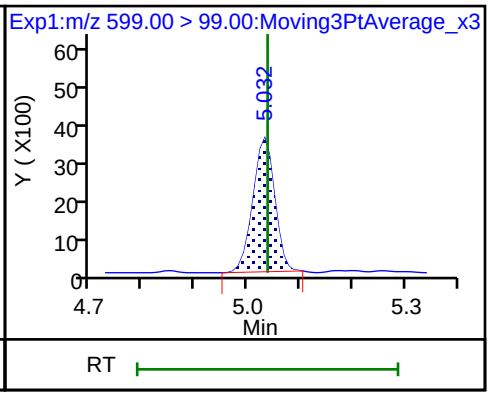
41 N-methylperfluorooctanesulfonami



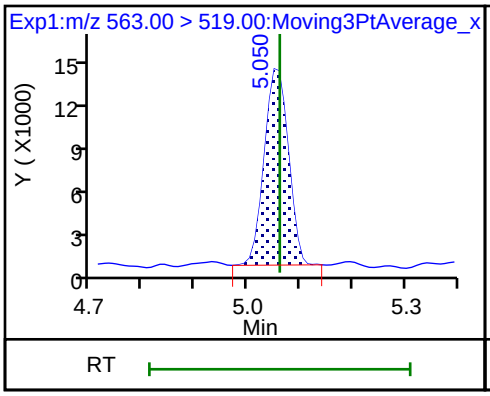
42 Perfluorodecanesulfonic acid



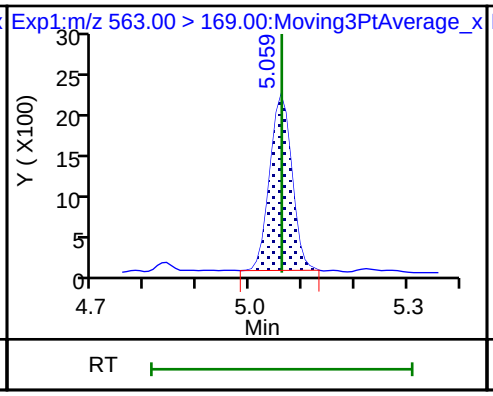
42 Perfluorodecanesulfonic acid



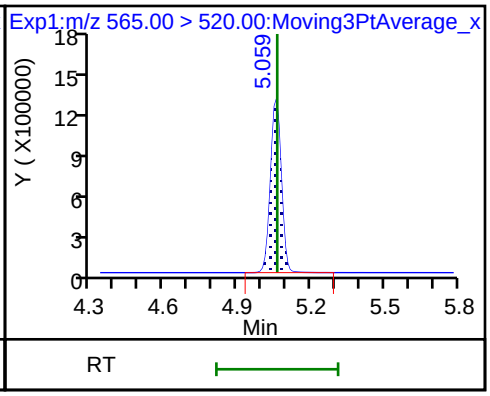
45 Perfluoroundecanoic acid



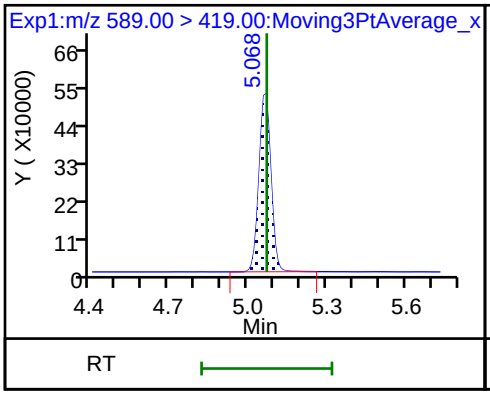
45 Perfluoroundecanoic acid



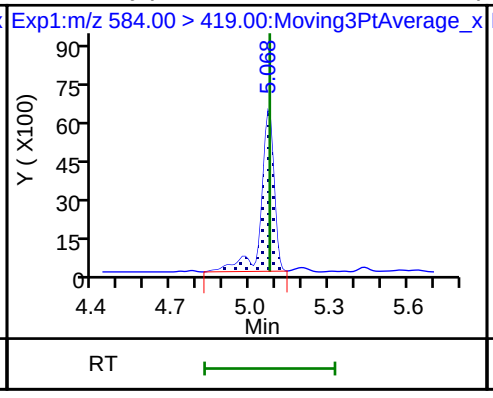
D 43 13C2 PFUnA



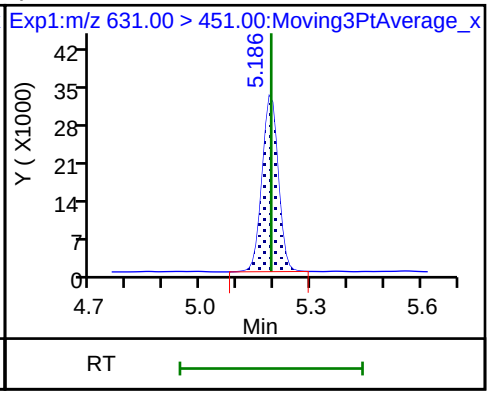
D 44 d5-NEtFOSAA



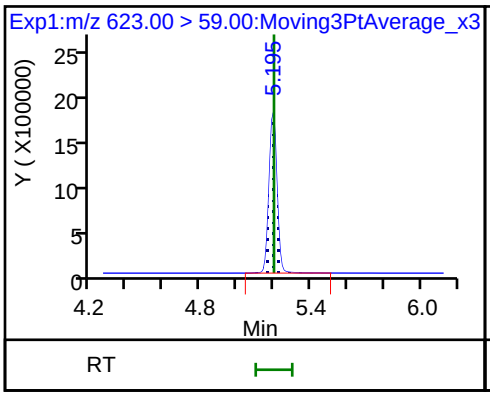
46 N-ethylperfluorooctanesulfonamid (M)



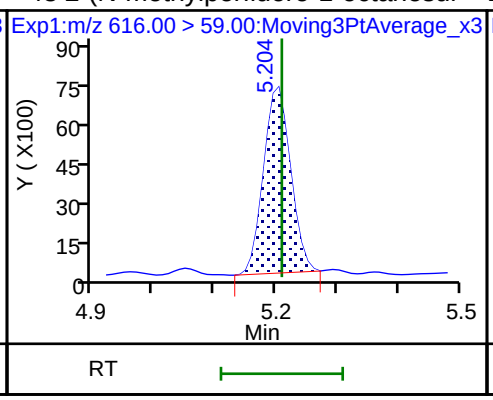
51 11-Chloroeicosafluoro-3-oxaundec



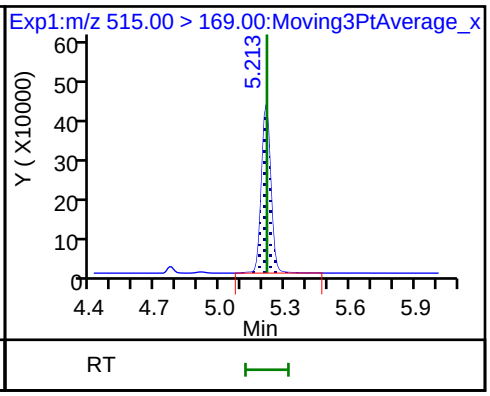
D 47 d7-N-MeFOSE-M



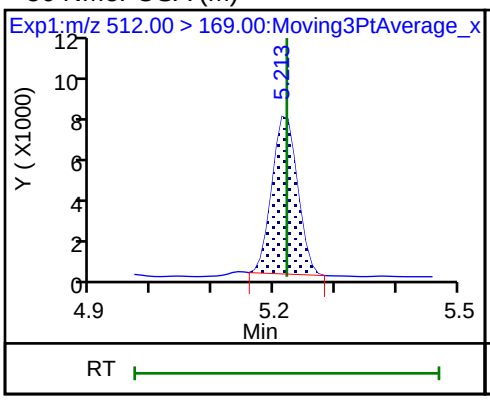
48 2-(N-methylperfluoro-1-octanesul



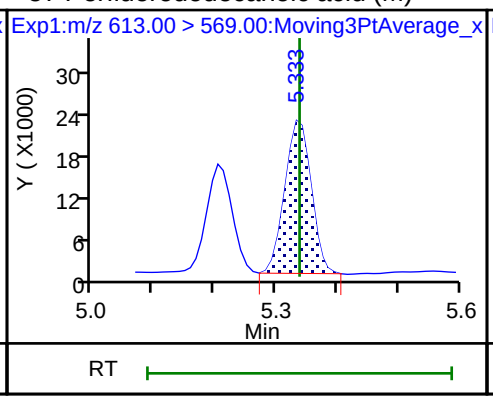
D 49 d-N-MeFOSA-M



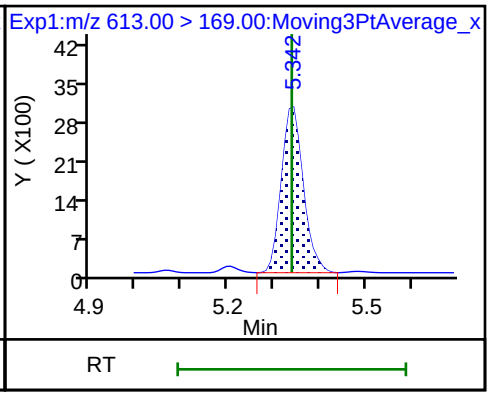
50 NMeFOSA (M)



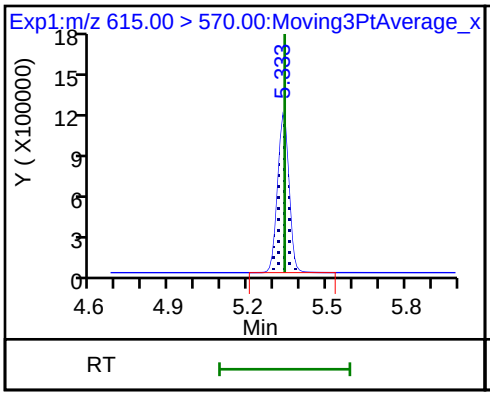
57 Perfluorododecanoic acid (M)



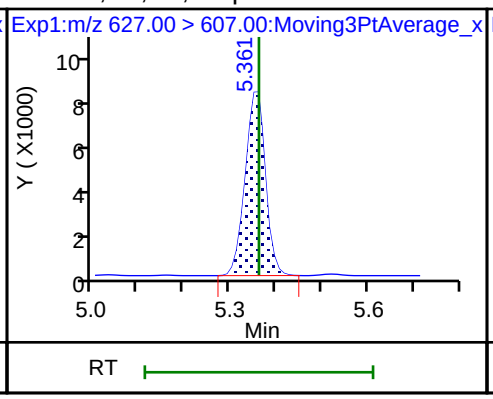
57 Perfluorododecanoic acid



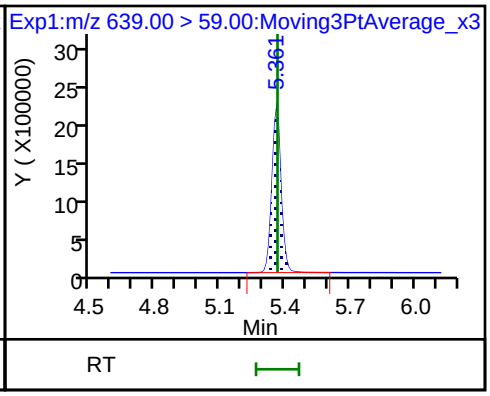
D 56 13C2 PFDoA



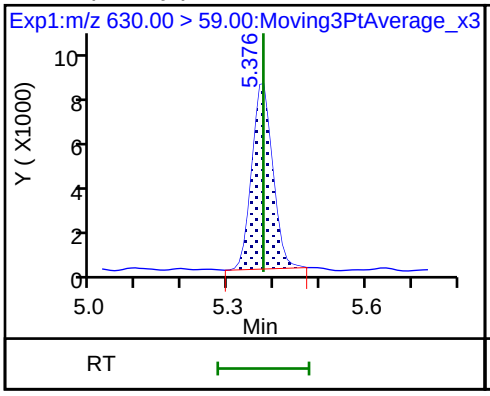
58 1H,1H,2H,2H-perfluorododecanesul



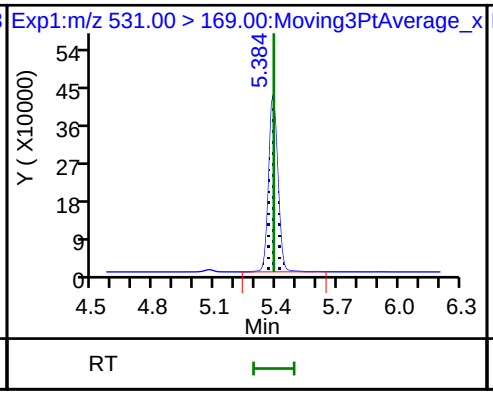
D 52 d9-N-EtFOSE-M



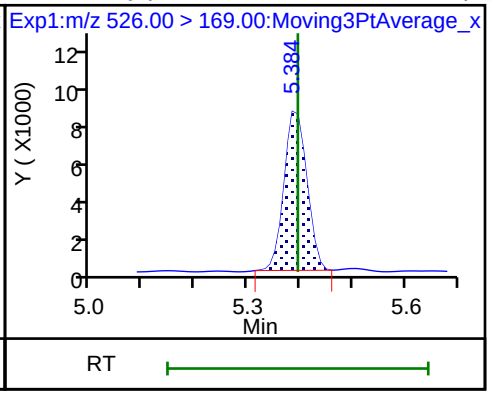
53 2-(N-ethylperfluoro-1-octanesulf



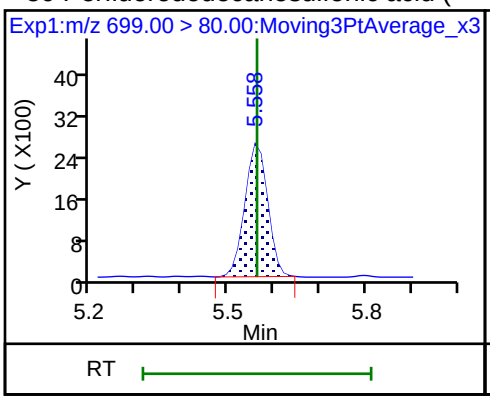
D 54 d-N-EtFOSA-M



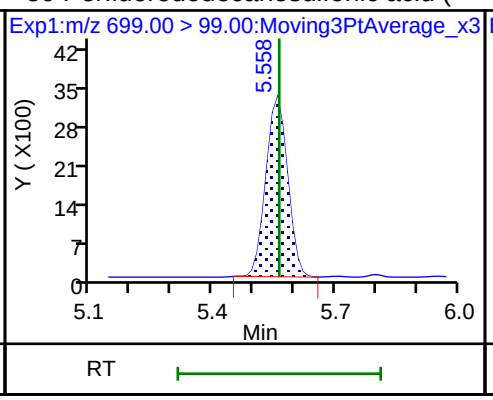
55 N-ethylperfluoro-1-octanesulfona (M)



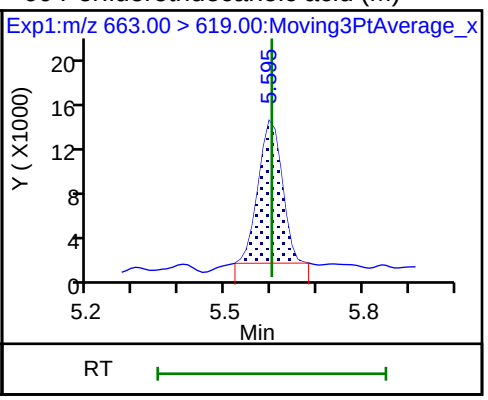
59 Perfluorododecanesulfonic acid (



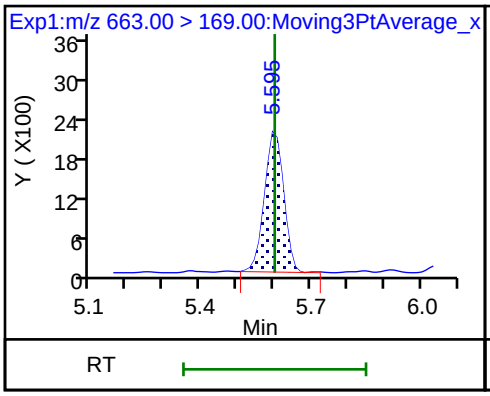
59 Perfluorododecanesulfonic acid (



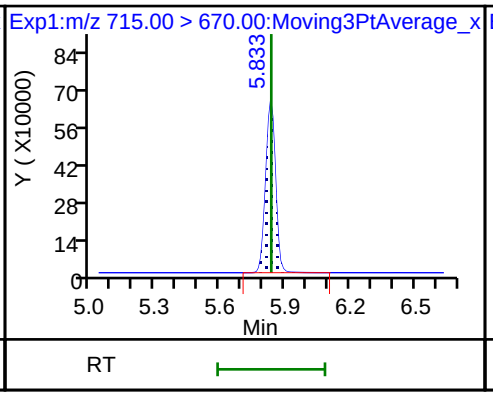
60 Perfluorotridecanoic acid (M)



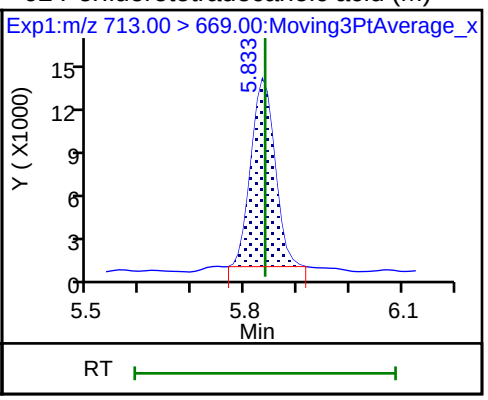
60 Perfluorotridecanoic acid



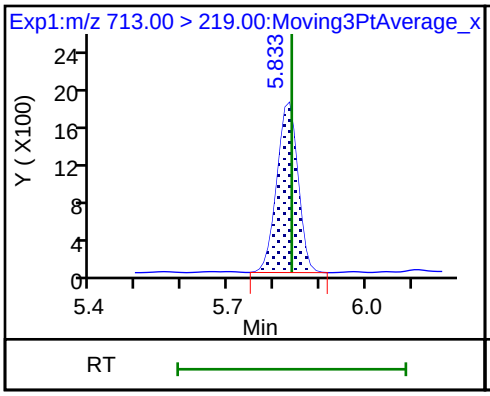
D 61 13C2 PFTeDA



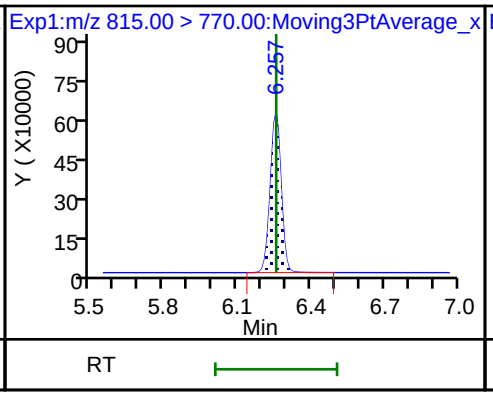
62 Perfluorotetradecanoic acid (M)



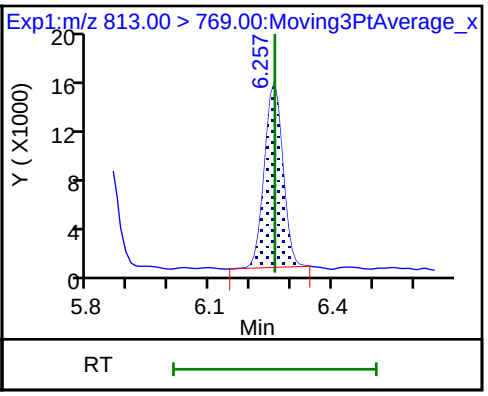
62 Perfluorotetradecanoic acid



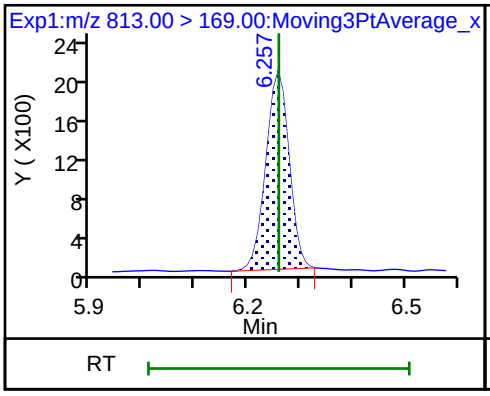
D 64 13C2 PFHxDA



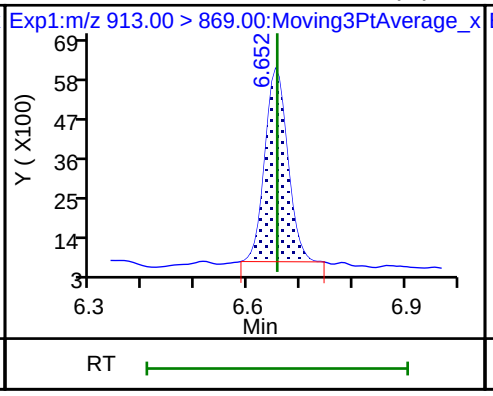
63 Perfluorohexadecanoic acid



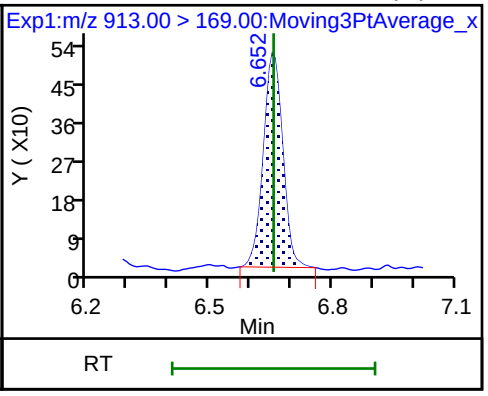
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid (M)



65 Perfluorooctadecanoic acid (M)



Eurofins TestAmerica, Sacramento

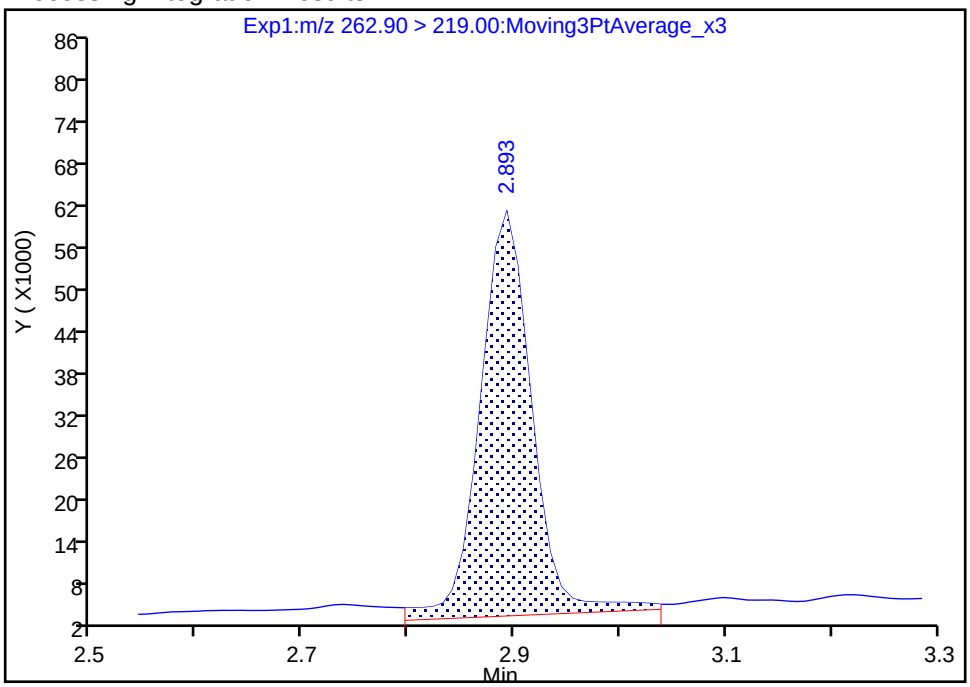
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

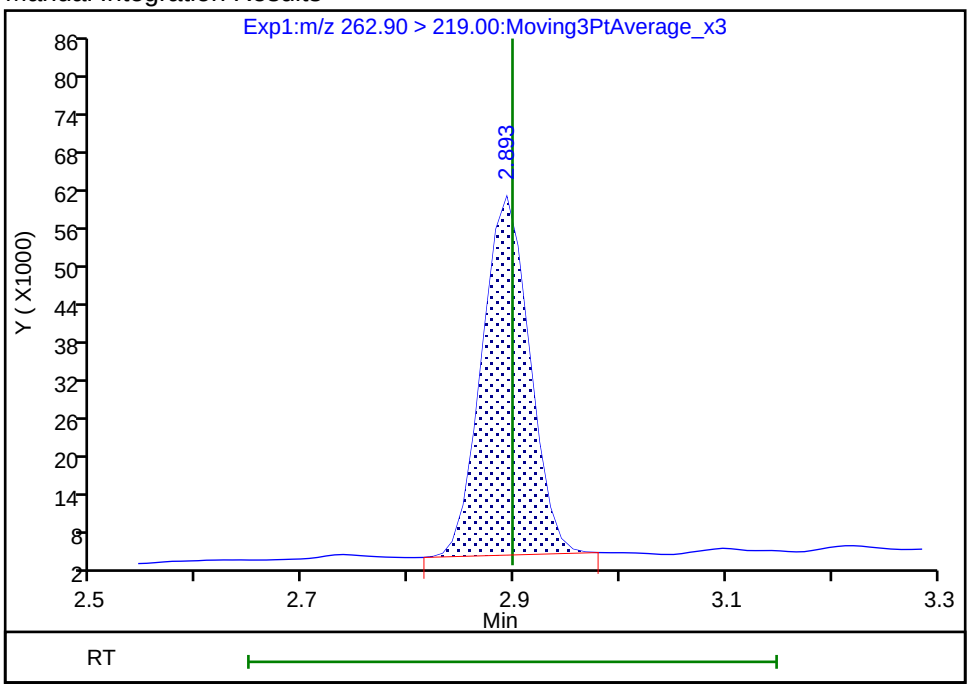
Processing Integration Results

RT: 2.89
Area: 197425
Amount: 0.049151
Amount Units: ng/ml



Manual Integration Results

RT: 2.89
Area: 176111
Amount: 0.051076
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:27:34
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

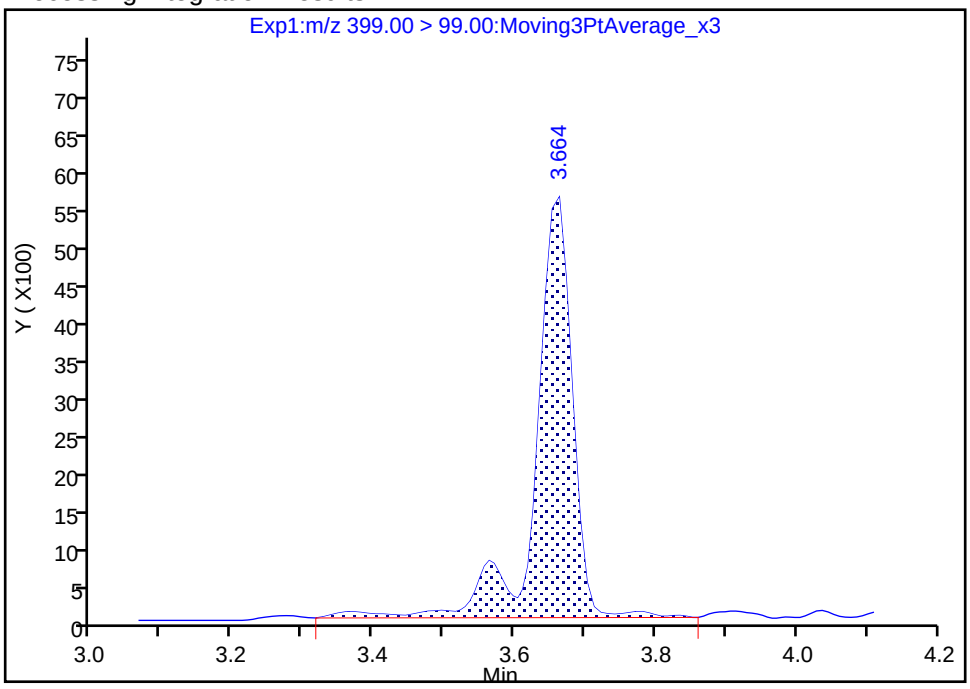
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

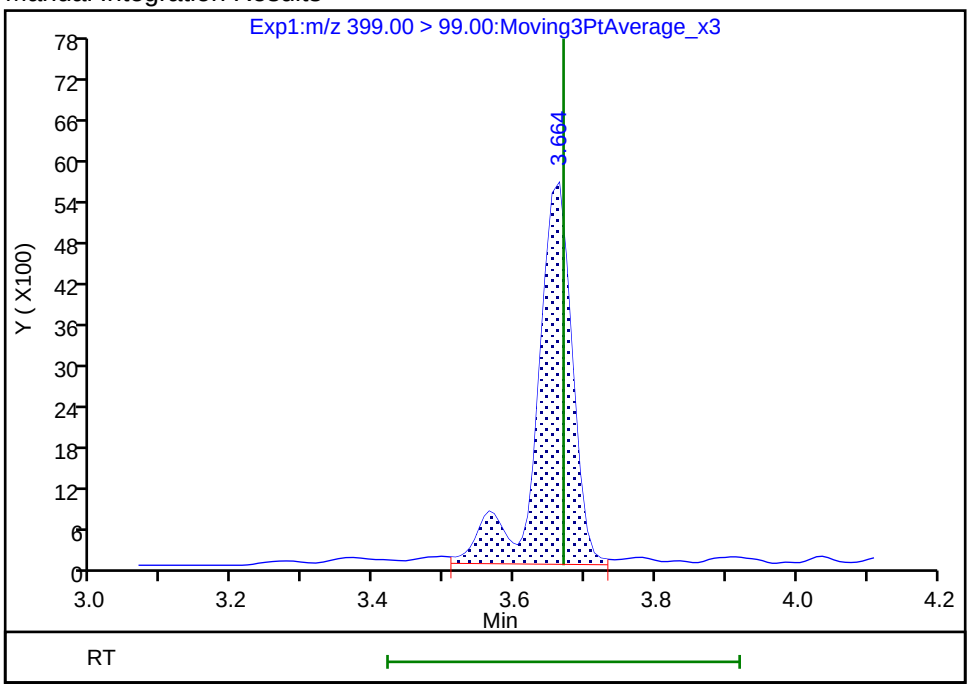
Processing Integration Results

RT: 3.66
Area: 20286
Amount: 0.047704
Amount Units: ng/ml



Manual Integration Results

RT: 3.66
Area: 19559
Amount: 0.047704
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:28:50
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

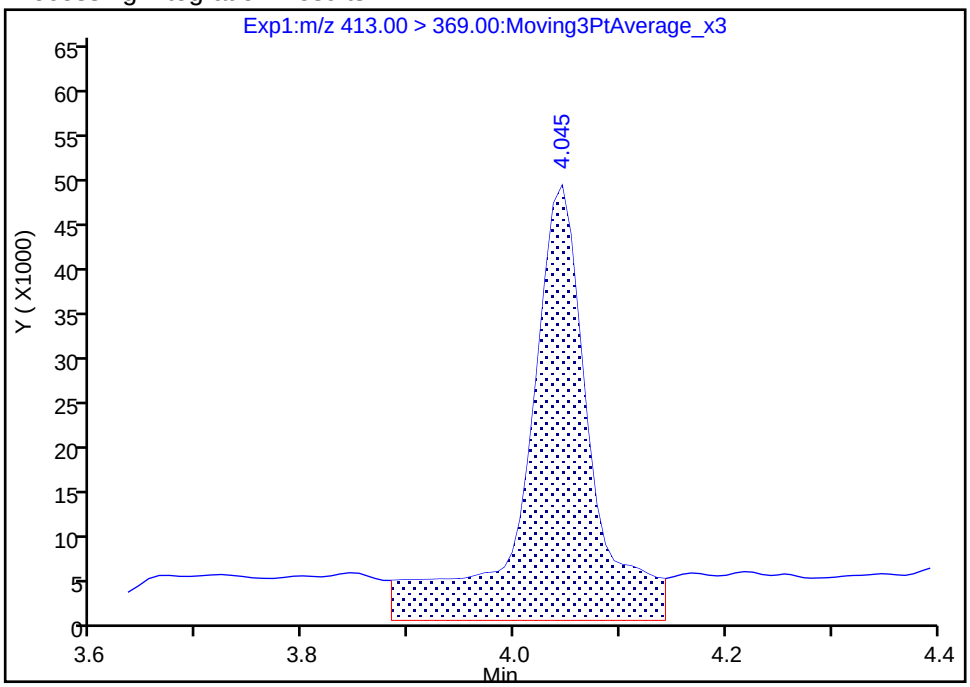
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

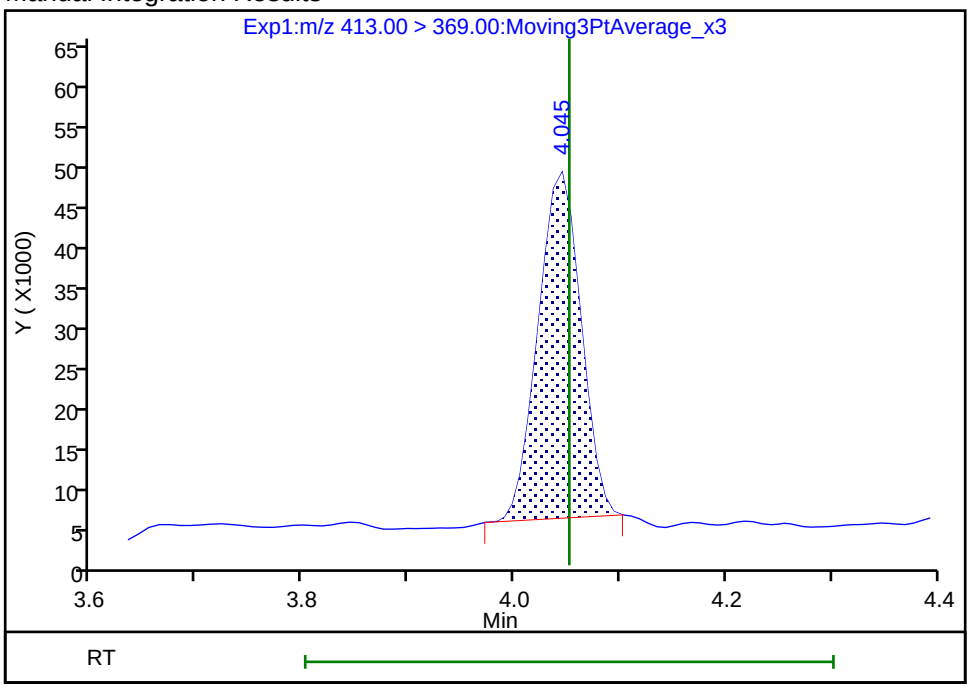
Processing Integration Results

RT: 4.05
Area: 204417
Amount: 0.056993
Amount Units: ng/ml



Manual Integration Results

RT: 4.05
Area: 120876
Amount: 0.049319
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:28:11
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

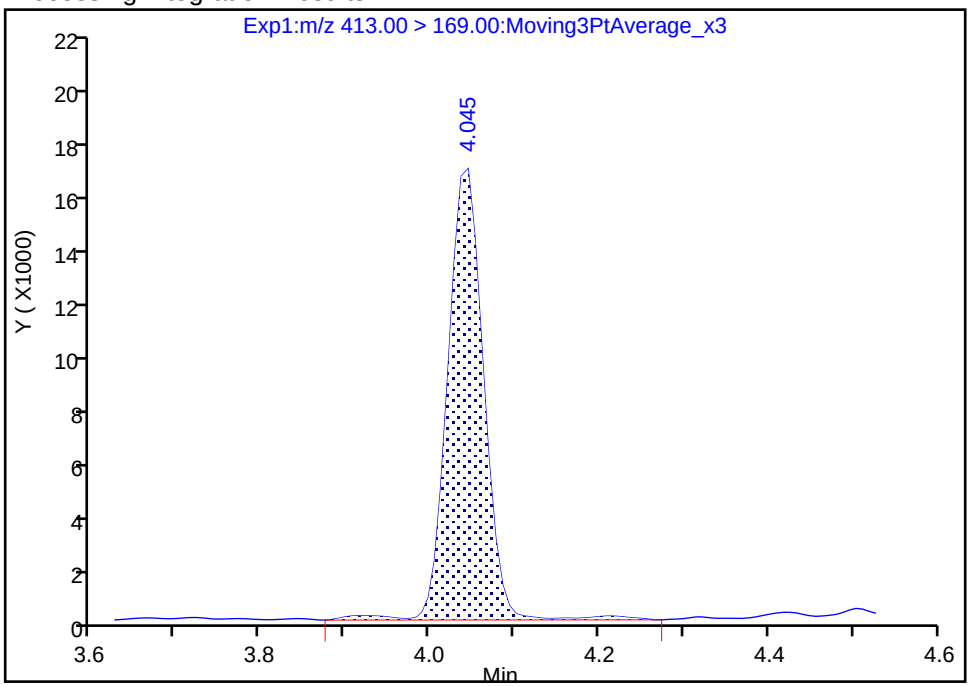
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

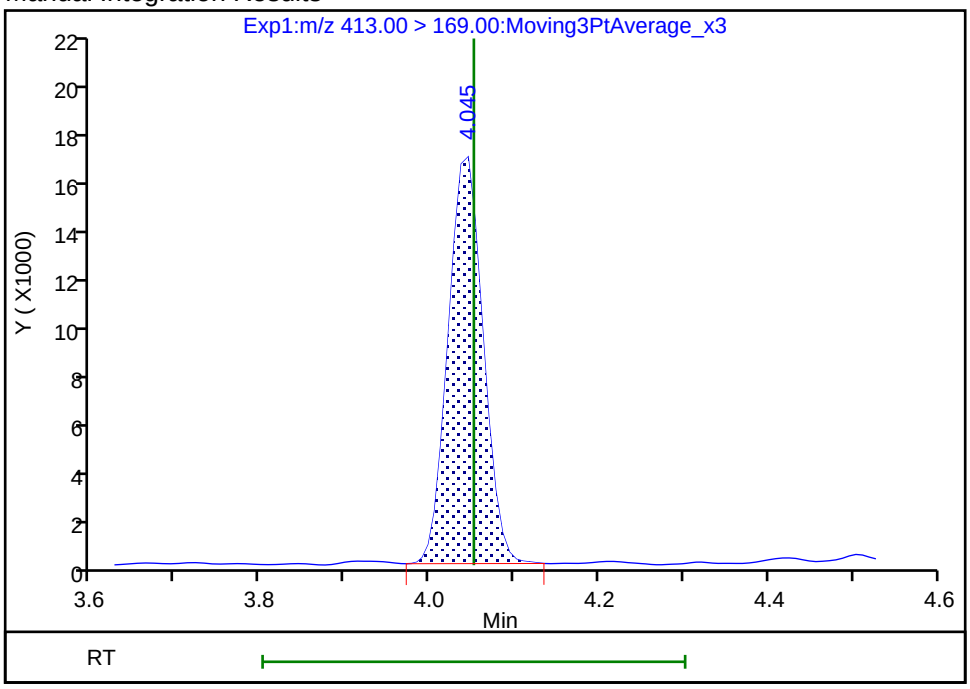
Processing Integration Results

RT: 4.05
Area: 48876
Amount: 0.056993
Amount Units: ng/ml



Manual Integration Results

RT: 4.05
Area: 47187
Amount: 0.049319
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:29:19
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

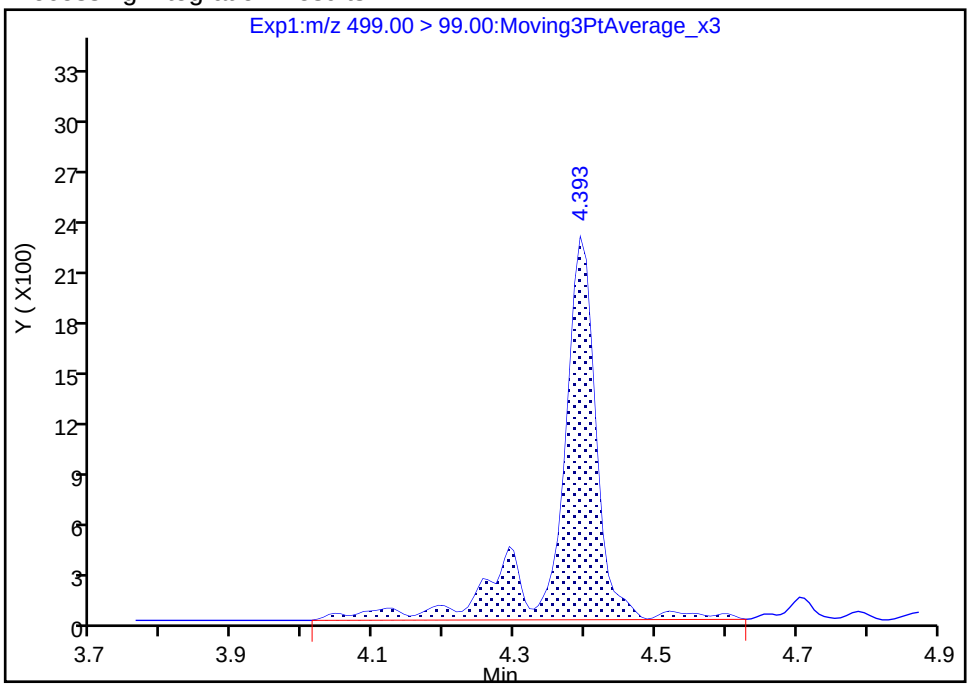
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d				
Injection Date:	04-Jun-2020 12:06:02	Instrument ID:	A15		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

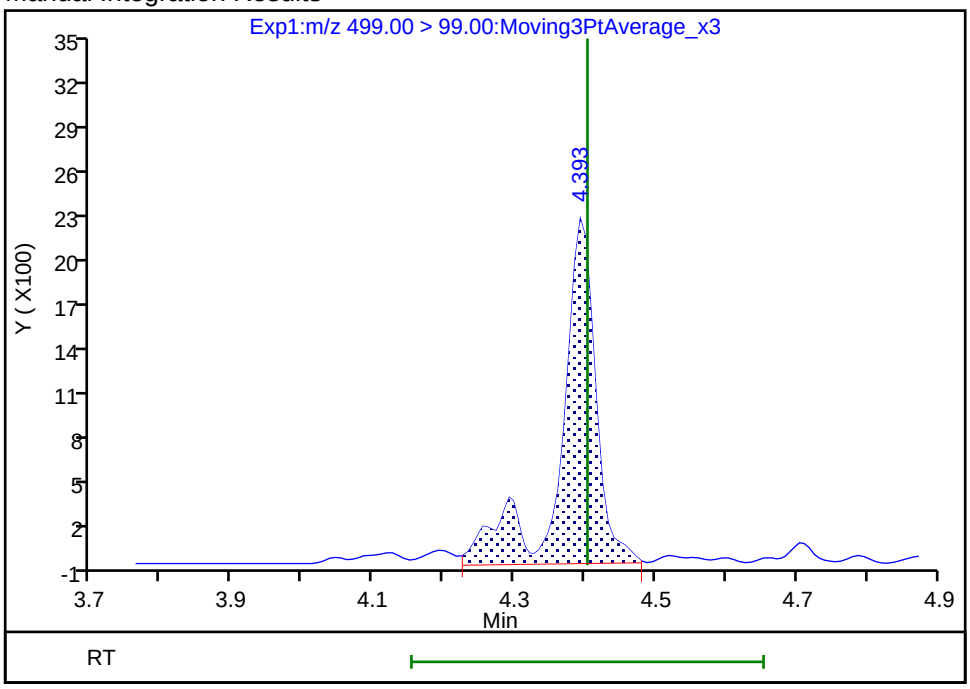
Processing Integration Results

RT: 4.39
Area: 8563
Amount: 0.045902
Amount Units: ng/ml



Manual Integration Results

RT: 4.39
Area: 7850
Amount: 0.044557
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:28:35
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

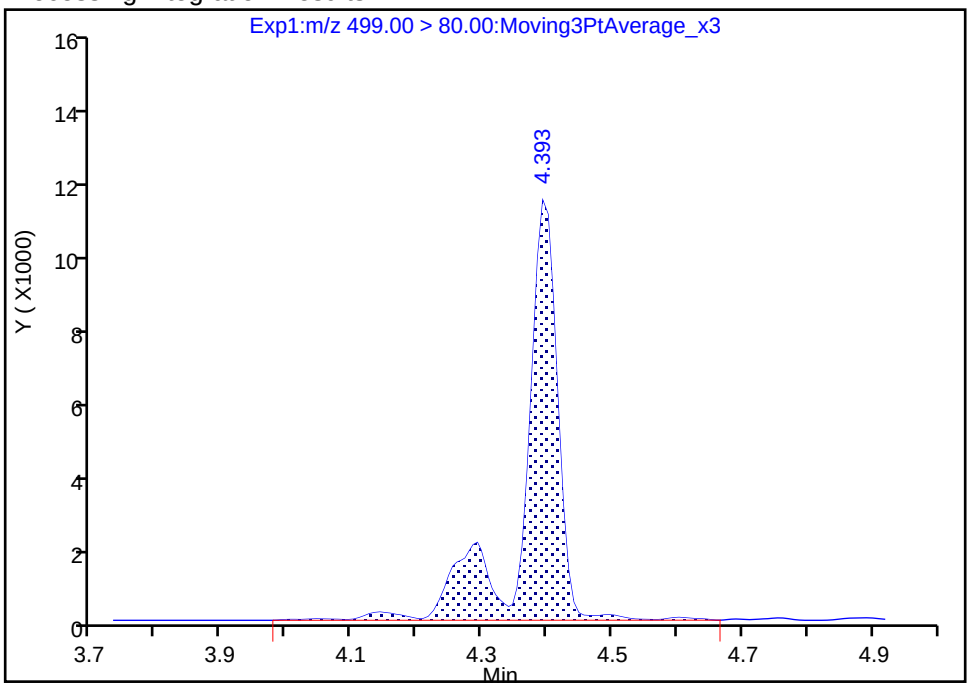
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

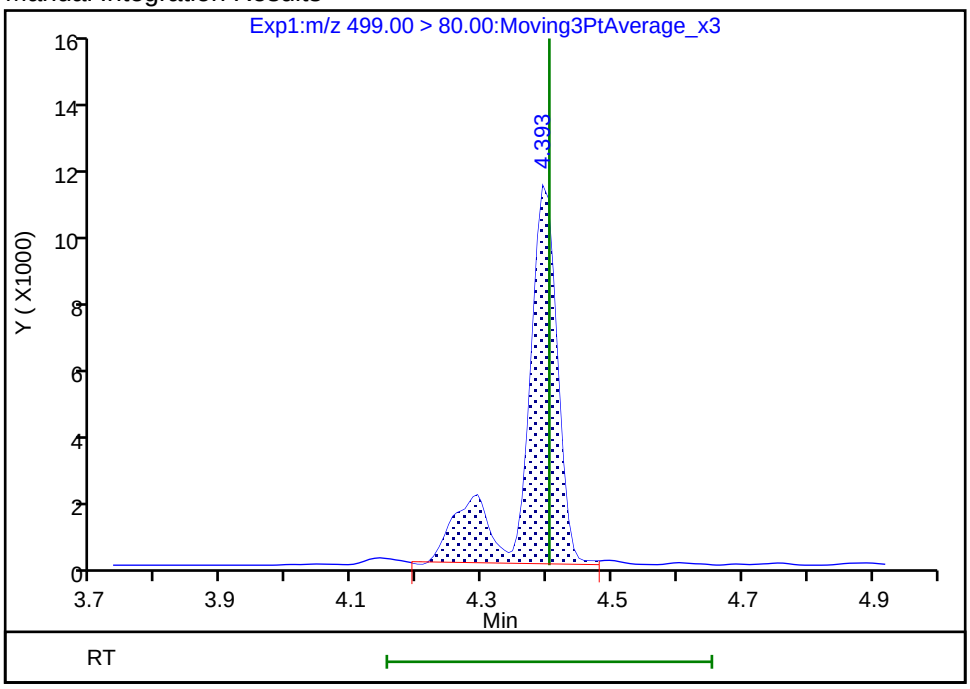
Processing Integration Results

RT: 4.39
Area: 39651
Amount: 0.045902
Amount Units: ng/ml



Manual Integration Results

RT: 4.39
Area: 37206
Amount: 0.044557
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:28:43
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

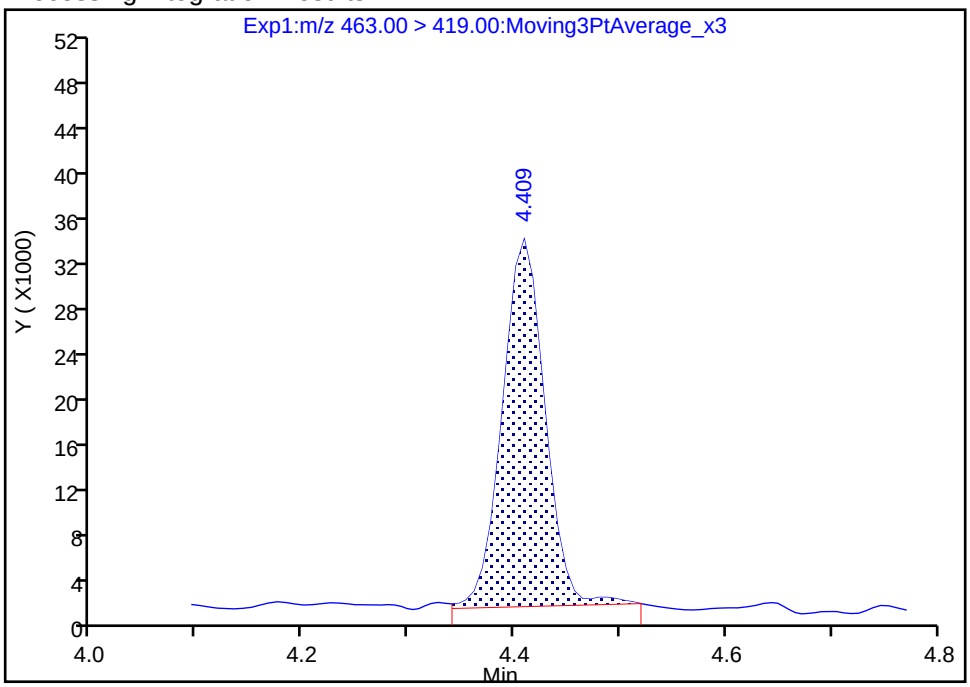
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

31 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

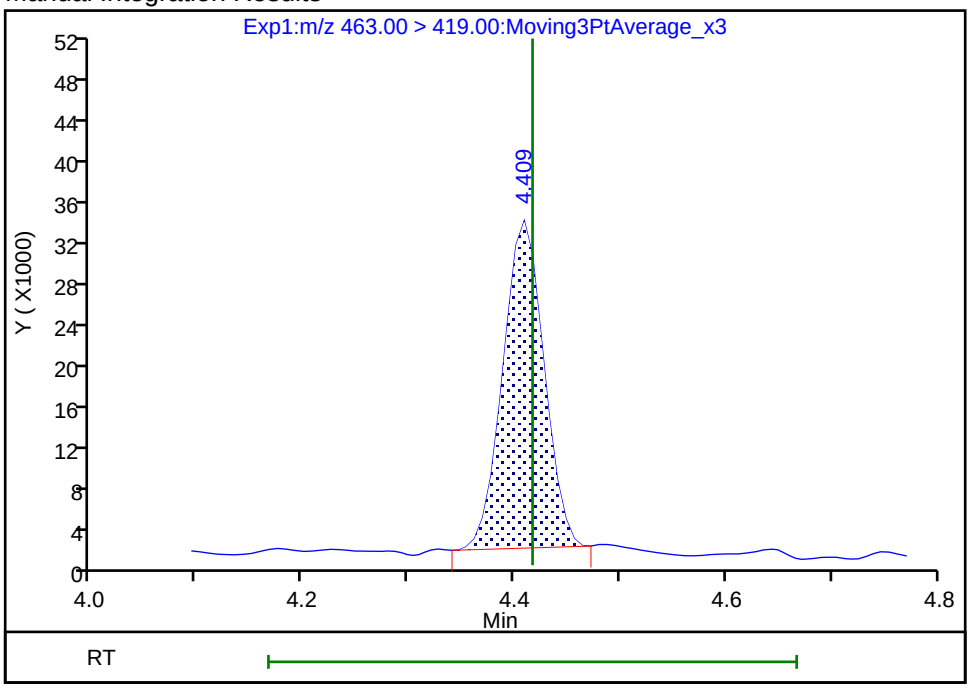
Processing Integration Results

RT: 4.41
Area: 90126
Amount: 0.050392
Amount Units: ng/ml



Manual Integration Results

RT: 4.41
Area: 85362
Amount: 0.047766
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:29:00
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

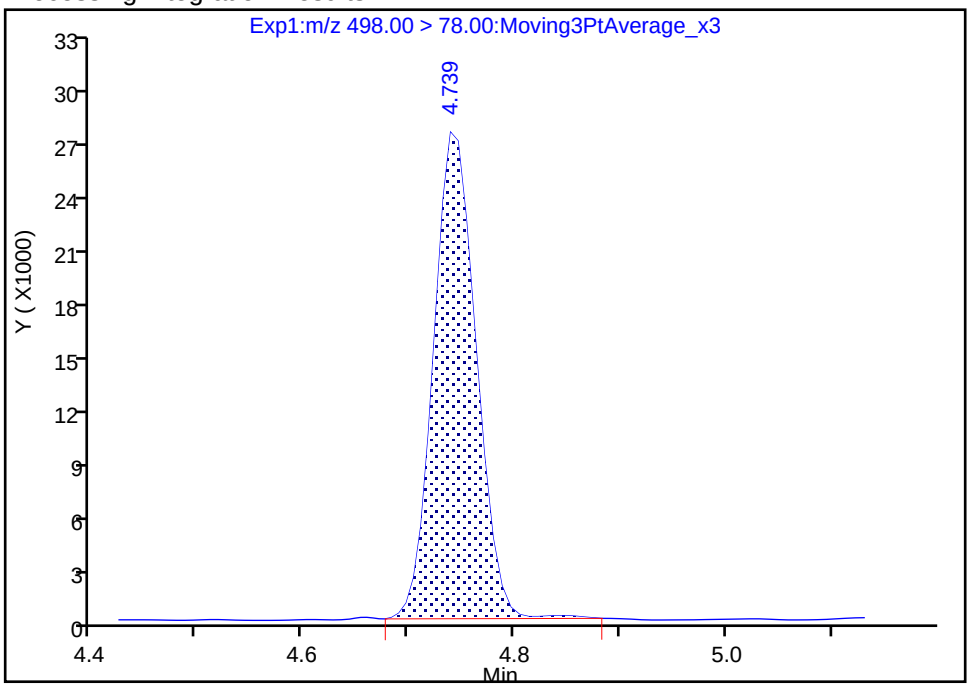
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

34 Perfluorooctanesulfonamide, CAS: 754-91-6

Signal: 1

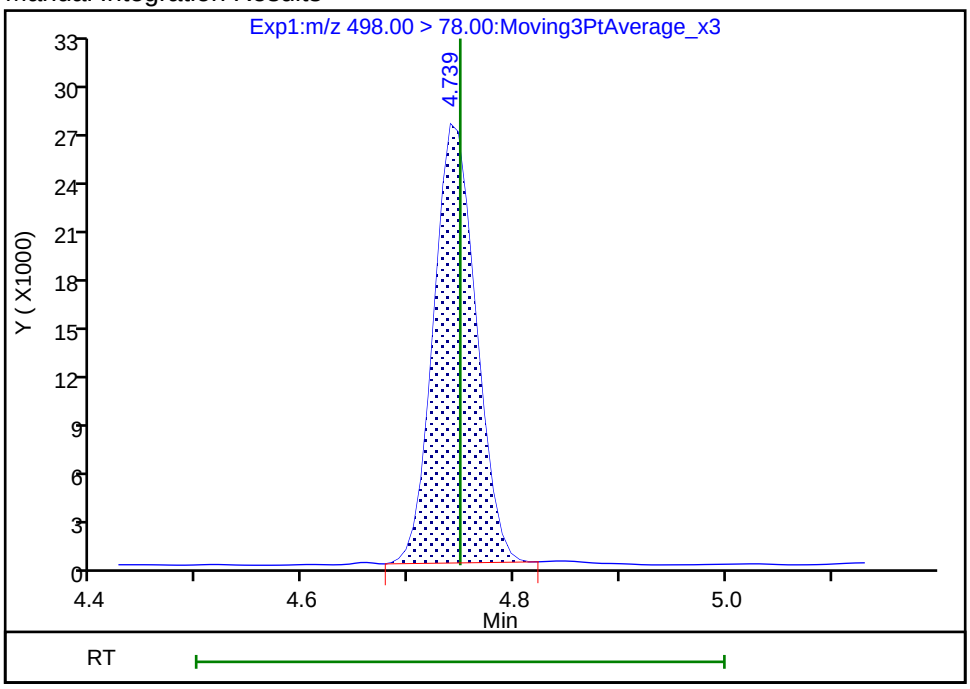
Processing Integration Results

RT: 4.74
Area: 75830
Amount: 0.049020
Amount Units: ng/ml



Manual Integration Results

RT: 4.74
Area: 74988
Amount: 0.048551
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:29:40
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

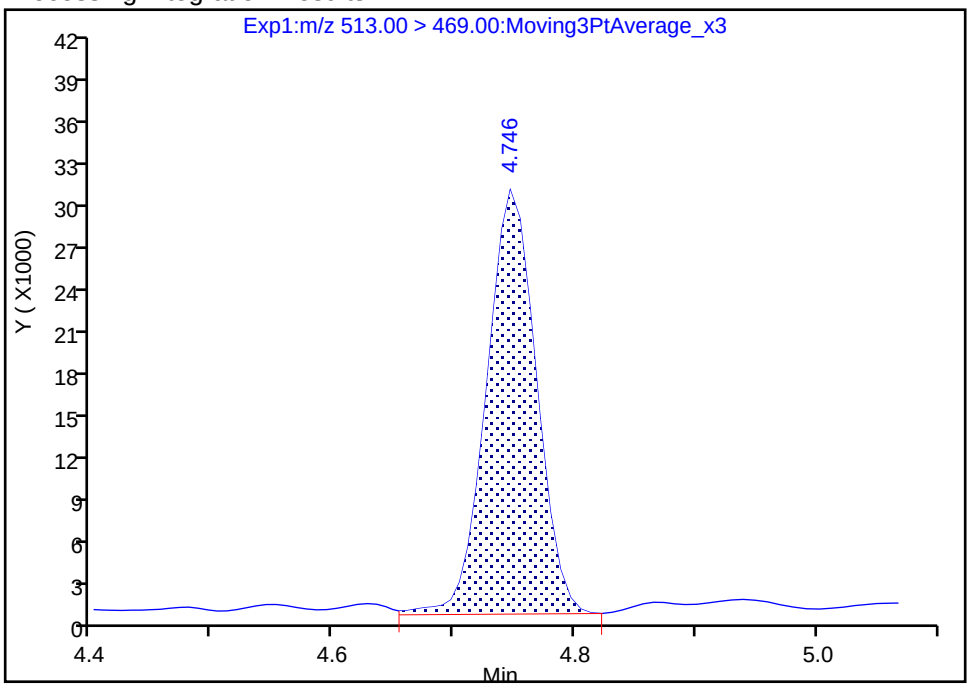
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

37 Perfluorodecanoic acid, CAS: 335-76-2

Signal: 1

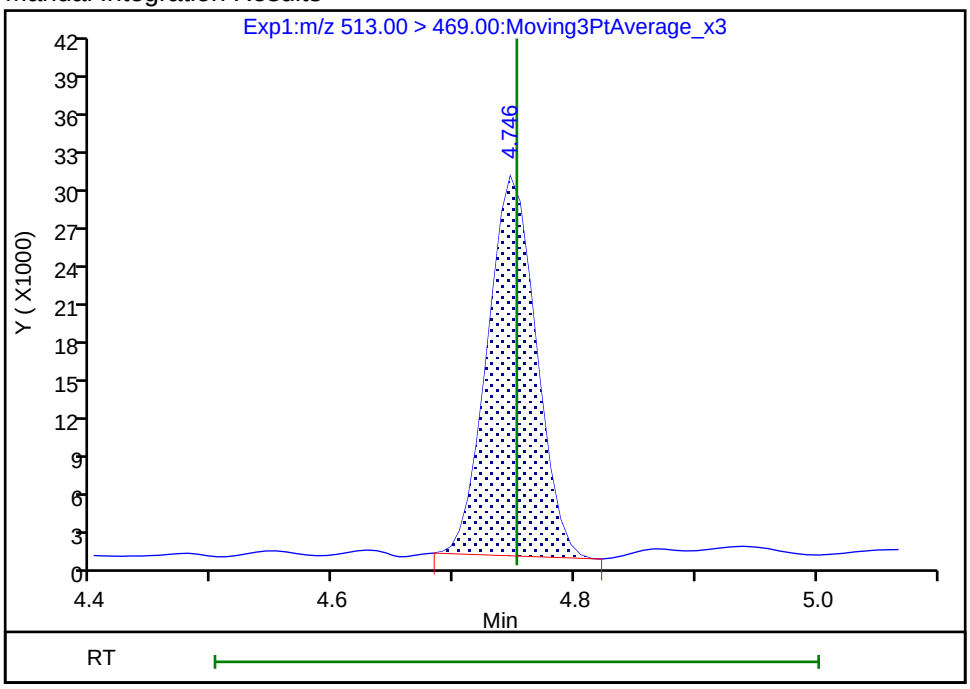
Processing Integration Results

RT: 4.75
Area: 85217
Amount: 0.051121
Amount Units: ng/ml



Manual Integration Results

RT: 4.75
Area: 82296
Amount: 0.051274
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:29:12
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

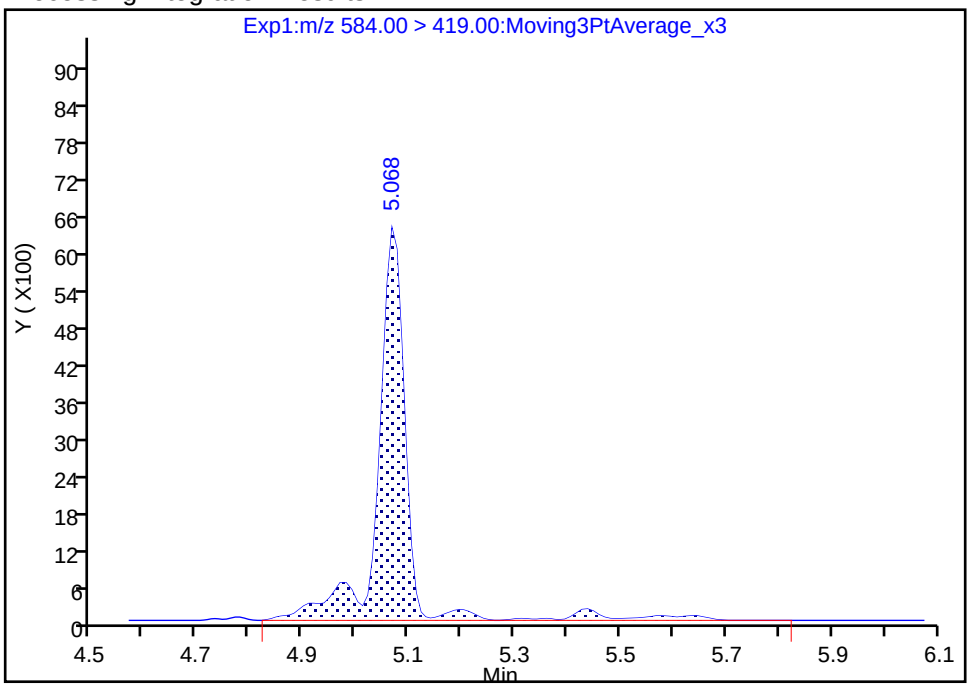
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

46 N-ethylperfluorooctanesulfonamid, CAS: 2991-50-6

Signal: 1

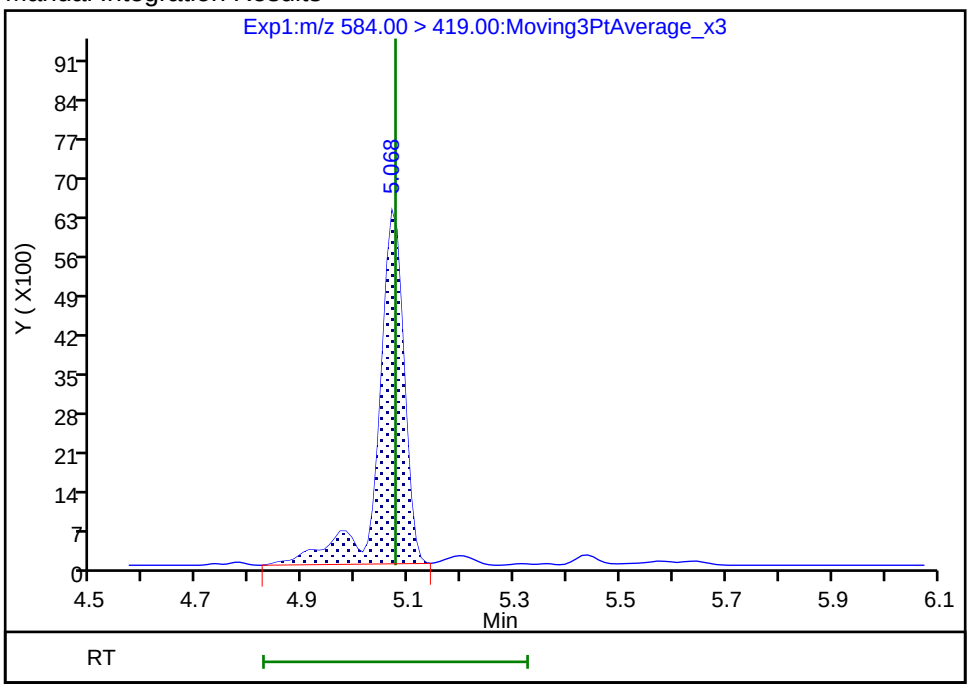
Processing Integration Results

RT: 5.07
Area: 23813
Amount: 0.050846
Amount Units: ng/ml



Manual Integration Results

RT: 5.07
Area: 21533
Amount: 0.045740
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:29:31
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

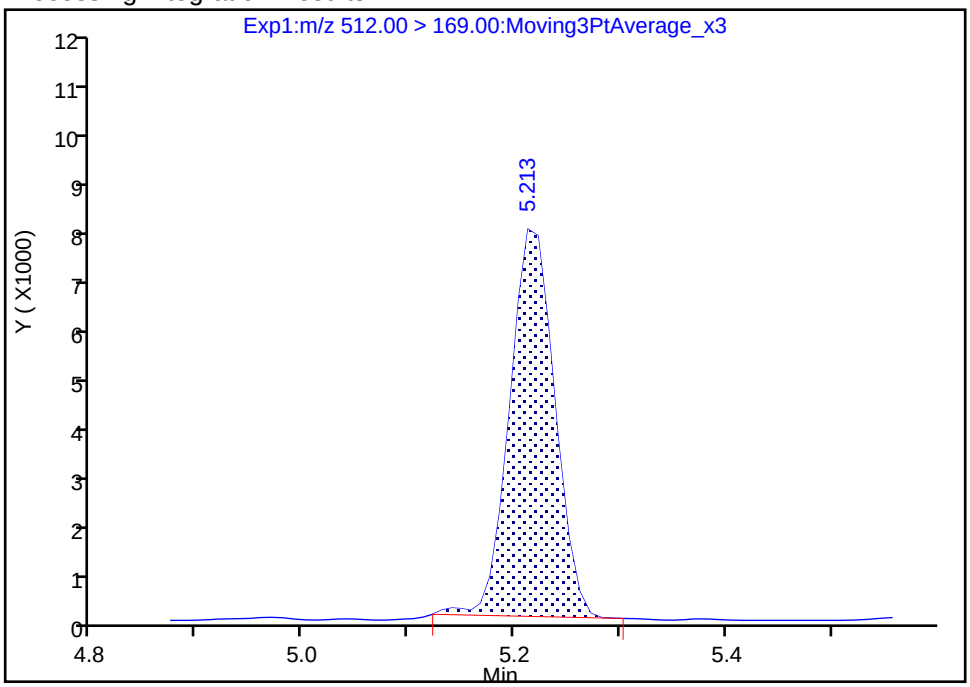
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

50 NMeFOSA, CAS: 31506-32-8

Signal: 1

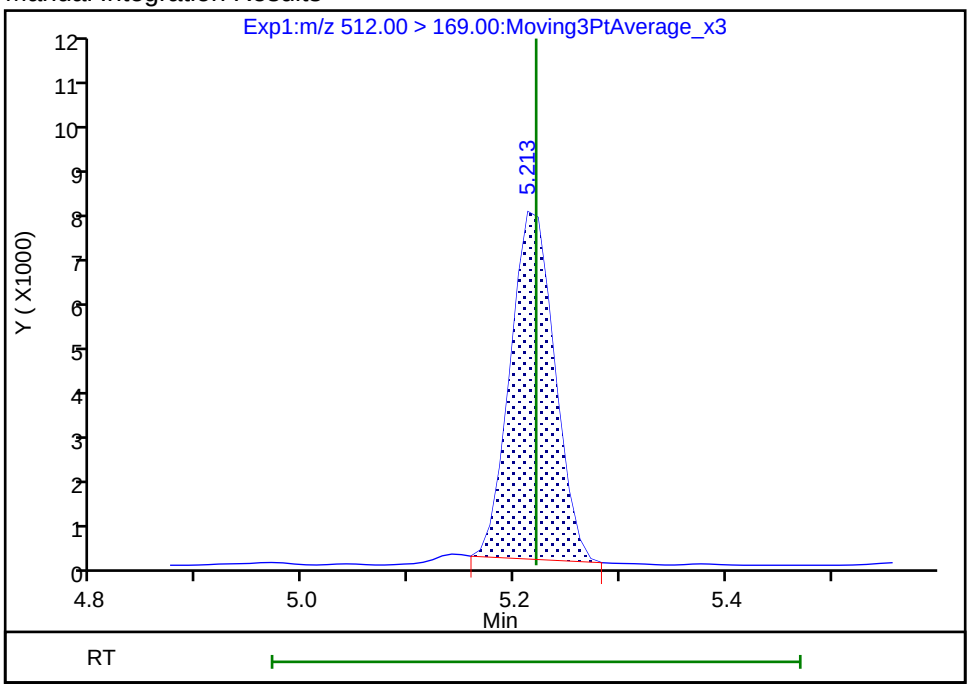
Processing Integration Results

RT: 5.21
Area: 21822
Amount: 0.049597
Amount Units: ng/ml



Manual Integration Results

RT: 5.21
Area: 21251
Amount: 0.043888
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:29:49
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

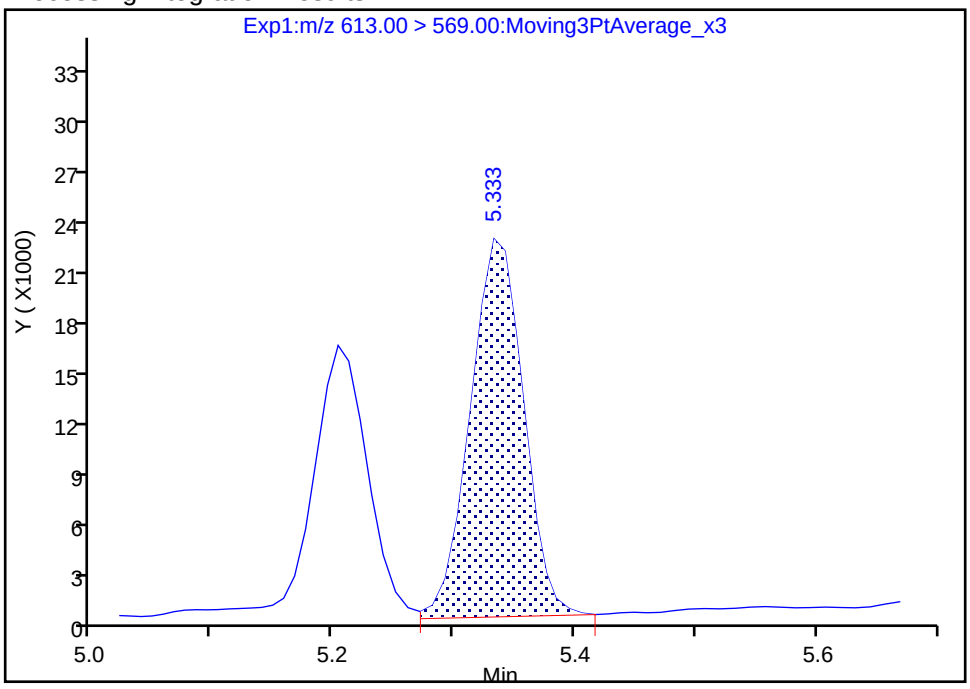
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

57 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

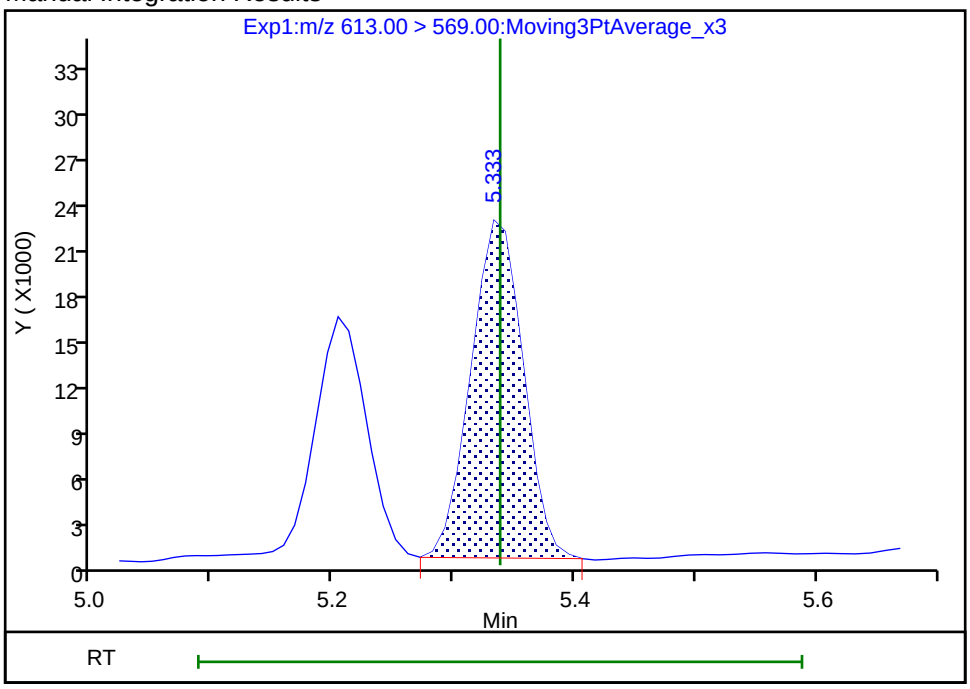
Processing Integration Results

RT: 5.33
Area: 67523
Amount: 0.049815
Amount Units: ng/ml



Manual Integration Results

RT: 5.33
Area: 65400
Amount: 0.049474
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:30:31
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

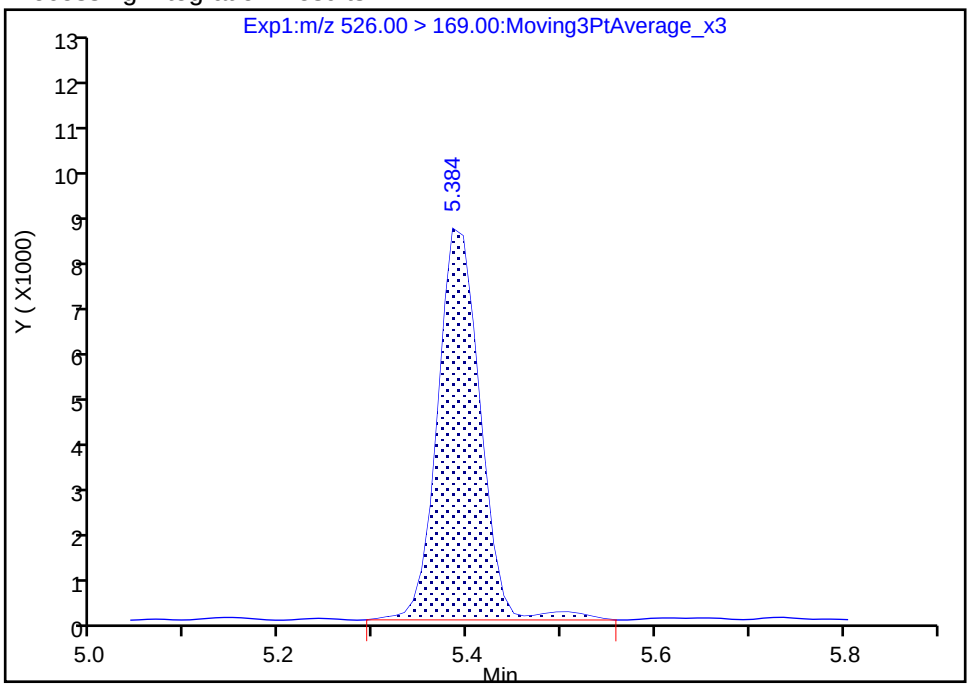
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d				
Injection Date:	04-Jun-2020 12:06:02	Instrument ID:	A15		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

55 N-ethylperfluoro-1-octanesulfona, CAS: 4151-50-2

Signal: 1

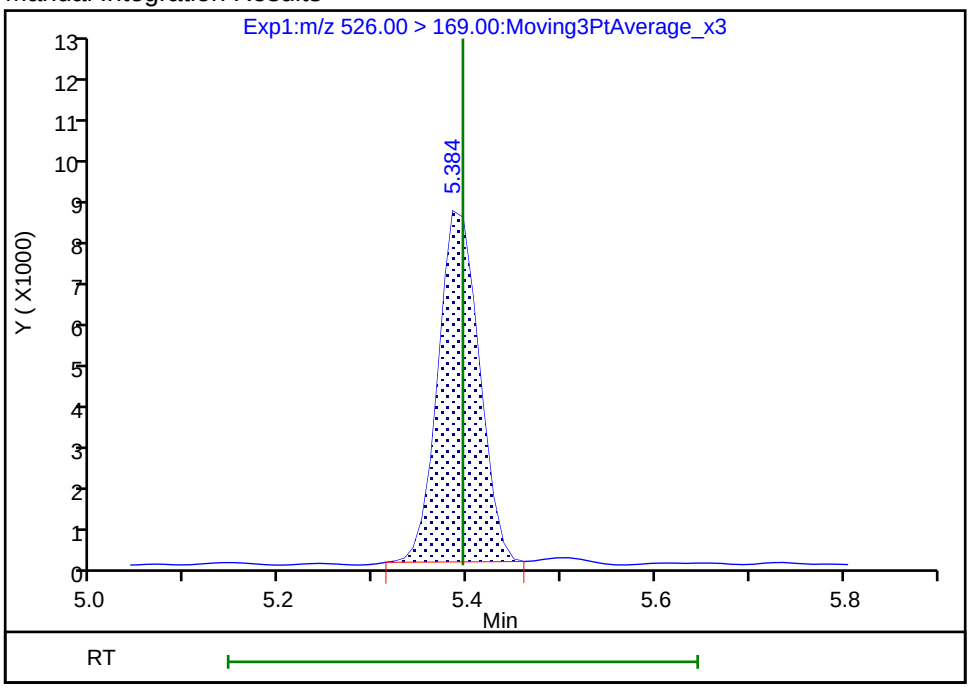
Processing Integration Results

RT: 5.38
Area: 25738
Amount: 0.053759
Amount Units: ng/ml



Manual Integration Results

RT: 5.38
Area: 24512
Amount: 0.046431
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:30:07
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

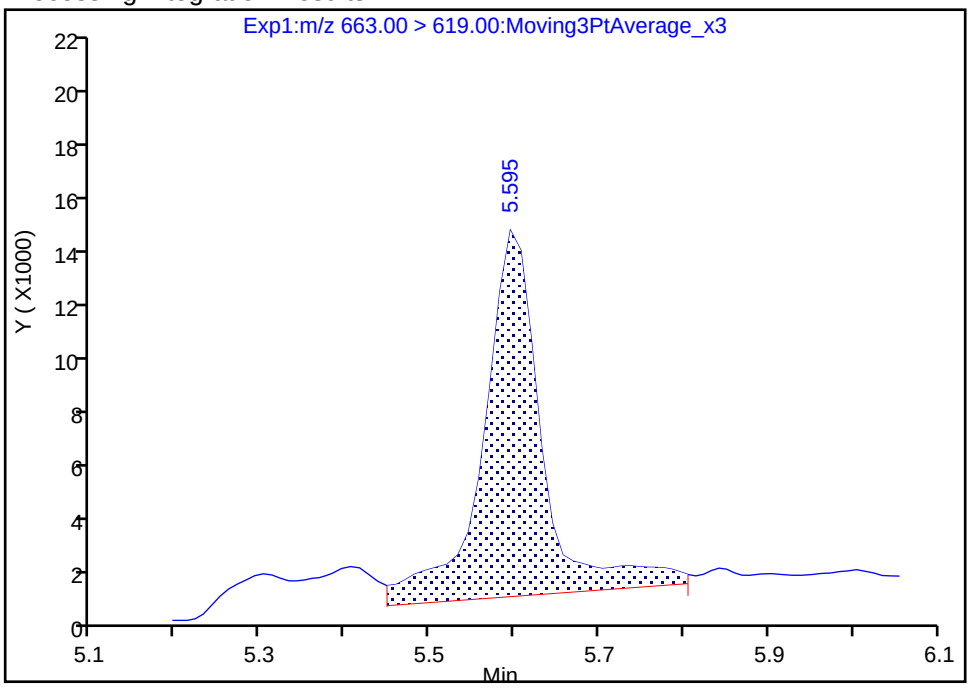
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d				
Injection Date:	04-Jun-2020 12:06:02	Instrument ID:	A15		
Lims ID:	IC L2 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

60 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

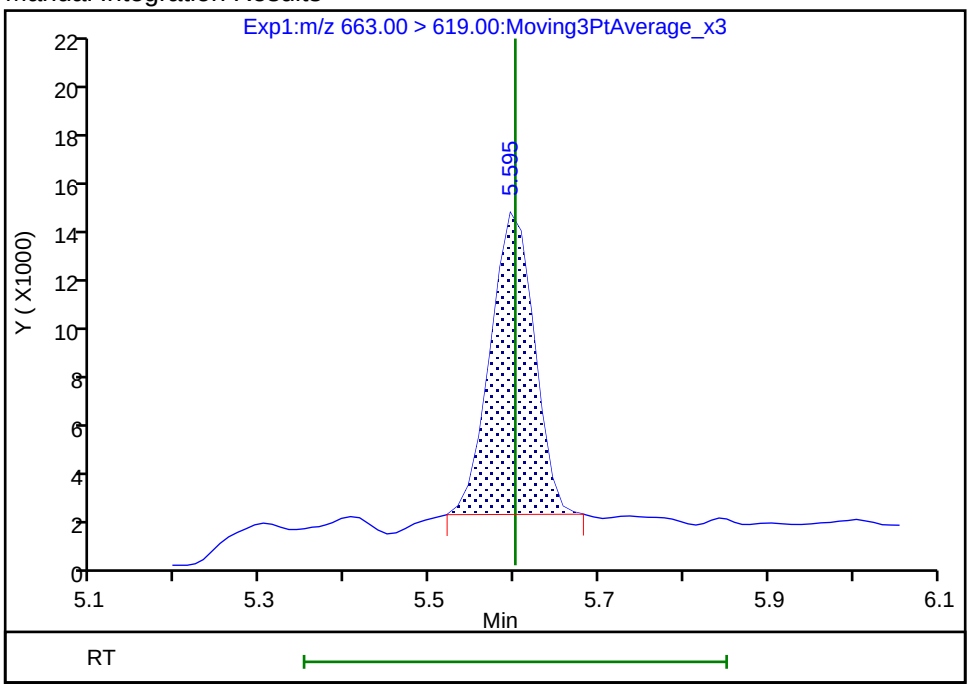
Processing Integration Results

RT: 5.60
Area: 65232
Amount: 0.050142
Amount Units: ng/ml



Manual Integration Results

RT: 5.60
Area: 44007
Amount: 0.041410
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:30:17
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

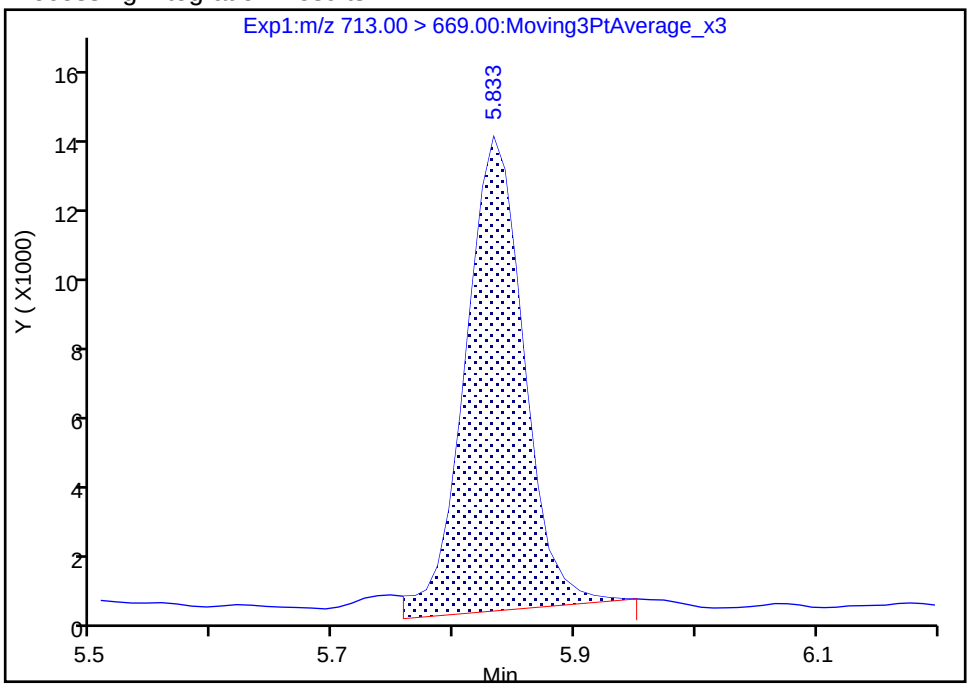
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

62 Perfluorotetradecanoic acid, CAS: 376-06-7

Signal: 1

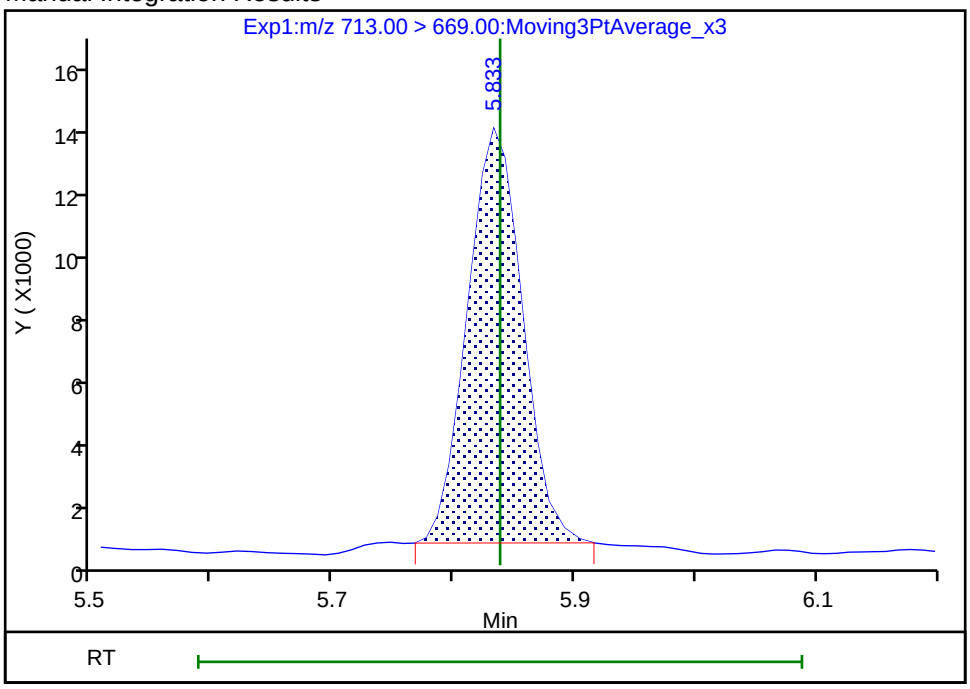
Processing Integration Results

RT: 5.83
Area: 42306
Amount: 0.049161
Amount Units: ng/ml



Manual Integration Results

RT: 5.83
Area: 38411
Amount: 0.047260
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 12:30:27
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

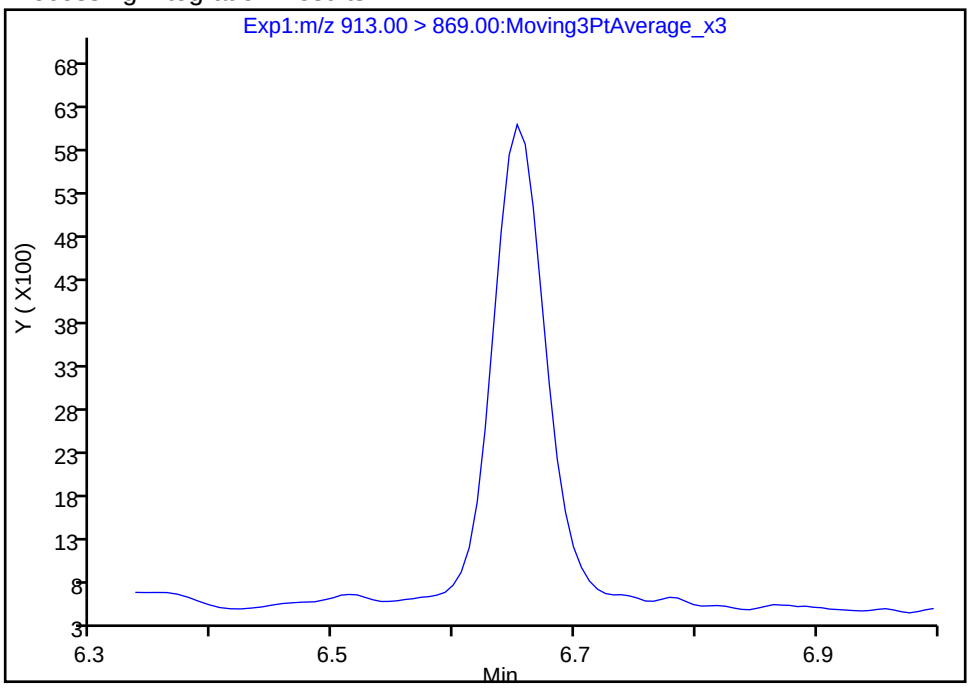
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

65 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 1

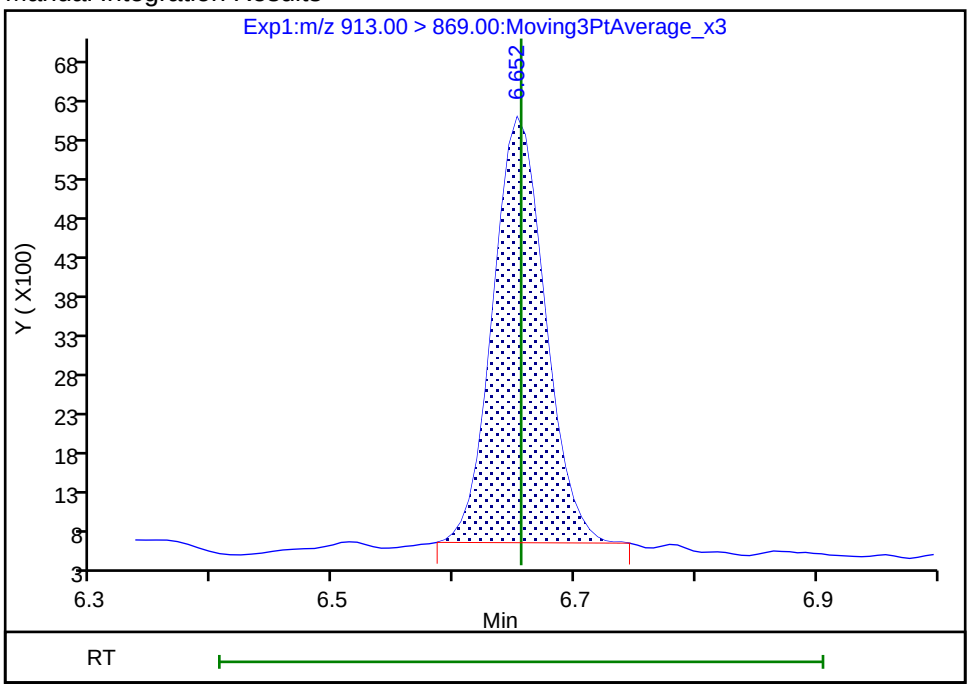
Not Detected
Expected RT: 6.66

Processing Integration Results



Manual Integration Results

RT: 6.65
Area: 16349
Amount: 0.043241
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:15:42
Audit Action: Manually Integrated Audit Reason: Assign Peak

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

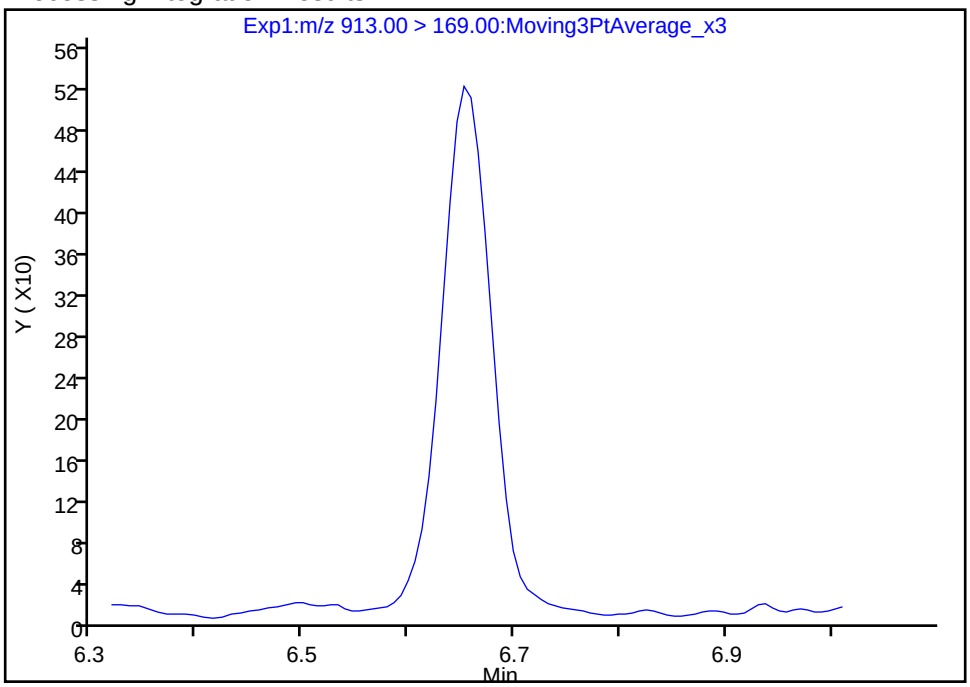
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_005.d
Injection Date: 04-Jun-2020 12:06:02 Instrument ID: A15
Lims ID: IC L2 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

65 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 2

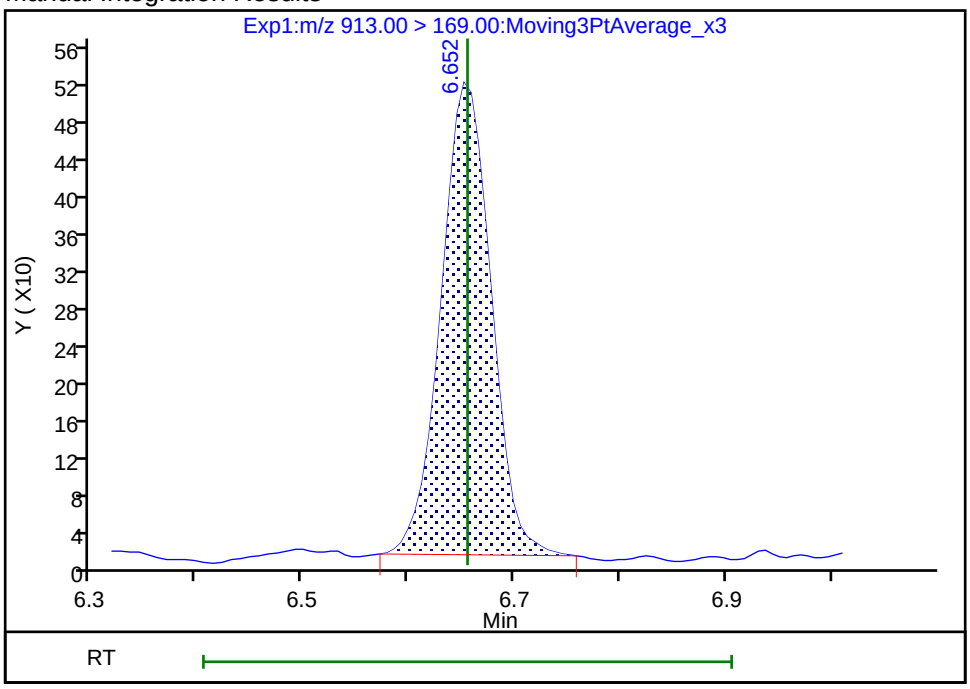
Not Detected
Expected RT: 6.66

Processing Integration Results



Manual Integration Results

RT: 6.65
Area: 1654
Amount: 0.043241
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 13:15:47
Audit Action: Manually Integrated Audit Reason: Assign Peak

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d
Lims ID: IC L3 Full
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 04-Jun-2020 12:15:08 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 3 (19)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:23 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:35:45
Ratio Calibration: Average of Initial Calibration

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	2.557	2.549	0.008	0.630	9448270	2.47		98.9	18613	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.557	2.551	0.006	1.000	843031	0.2409		96.4	216	
D 4 13C5 PFPeA										
267.90 > 223.00	2.899	2.895	0.004	0.714	8287569	2.43		97.1	16340	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.899	2.898	0.001	1.000	792080	0.2372		94.9	57.6	M
D 9 13C3 PFBS										
301.90 > 80.00	2.940	2.930	0.010	0.724	5329078	2.25		96.9	20494	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.940	2.930	0.010	1.000	476364	0.2132	Target=2.14	96.5	256	
298.90 > 99.00	2.940	2.930	0.010	1.000	230964		2.06(1.07-3.21)	96.5	159	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.231	3.226	0.005	0.796	732852	2.33		99.7	1579	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.231	3.227	0.004	1.000	153907	0.2174		93.1	3228	
D 11 13C2 PFHxA										
315.00 > 270.00	3.280	3.267	0.013	0.808	8323323	2.51		100	15511	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.280	3.267	0.013	1.000	777330	0.2490	Target=15.73	99.6	375	
313.00 > 119.00	3.271	3.267	0.004	0.997	48213		16.12(7.86-23.59)	99.6	122	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.290	3.285	0.005	1.119	395420	0.2352	Target=2.69	100	1990	
349.00 > 99.00	3.290	3.285	0.005	1.119	151729		2.61(1.35-4.04)	100	1008	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.397	3.386	0.011	0.837	1892293	2.49		99.7	12880	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.397	3.386	0.011	1.000	168499	0.2437		97.5	3100	
D 18 13C4 PFHpA										
367.00 > 322.00	3.673	3.661	0.012	0.905	6280993	2.39		95.5	13374	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.673	3.662	0.011	1.000	640244	0.2521	Target=3.80	101	241	
363.00 > 169.00	3.673	3.662	0.011	1.000	166684		3.84(1.90-5.71)	101	910	
D 17 18O2 PFHxS										
403.00 > 84.00	3.673	3.667	0.006	0.905	2650257	2.33		98.5	13452	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.673	3.670	0.003	1.000	260169	0.2067	Target=2.99	90.9	1724	
399.00 > 99.00	3.673	3.670	0.003	1.000	93925		2.77(1.50-4.49)	90.9	389	
19 DONA										
377.00 > 251.00	3.712	3.709	0.003	0.842	1480984	0.2356	Target=2.14	100	4198	
377.00 > 85.00	3.712	3.709	0.003	0.842	671213		2.21(1.07-3.21)	100	2449	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.035	4.030	0.005	0.994	851271	2.45		103	5331	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.043	4.032	0.011	1.002	167725	0.2381		100	1705	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.052	4.046	0.006	0.919	224605	0.2402	Target=3.77	101	1834	
449.00 > 99.00	4.052	4.046	0.006	0.919	58377		3.85(1.89-5.66)	101	517	
$ 26 13C8 PFOA										
421.00 > 376.00	4.052	4.046	0.006	0.998	3690520	2.53		103	19166	
D 25 13C4 PFOA										
417.00 > 372.00	4.060	4.051	0.009	1.000	6072440	2.55		102	14639	
* 23 13C2 PFOA										
415.00 > 370.00	4.060	4.051	0.009		6033316	2.50			10649	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.060	4.052	0.008	1.000	573324	0.2234	Target=2.88	89.4	40.7	M
413.00 > 169.00	4.060	4.052	0.008	1.000	221744		2.59(1.44-4.31)	89.4	1355	
$ 28 13C8 PFOS										
507.00 > 99.00	4.407	4.400	0.007	1.086	695576	2.32		96.9	5494	
D 27 13C4 PFOS										
503.00 > 80.00	4.407	4.402	0.005	1.086	2049165	2.32		97.1	7303	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.407	4.403	0.004	1.000	187236	0.2207	Target=4.89	95.1	1322	
499.00 > 99.00	4.407	4.403	0.004	1.000	38989		4.80(2.44-7.33)	95.1	278	
31 Perfluorononanoic acid										M
463.00 > 419.00	4.423	4.417	0.006	1.000	427845	0.2234	Target=7.00	89.4	78.8	M
463.00 > 169.00	4.423	4.417	0.006	1.000	66935		6.39(3.50-10.51)	89.4	562	
D 30 13C5 PFNA										
468.00 > 423.00	4.423	4.417	0.006	1.089	4721149	2.59		104	9107	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.593	4.592	0.001	1.042	528793	0.2260		97.0	2557	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.737	4.732	0.005	1.075	162570	0.2374	Target=2.77	98.9	364	
549.00 > 99.00	4.730	4.732	-0.002	1.073	56770		2.86(1.38-4.15)	98.9	442	
D 33 13C8 FOSA										
506.00 > 78.00	4.752	4.747	0.005	1.171	4398715	2.50		100	6331	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.752	4.749	0.003	1.000	371735	0.2405		96.2	1725	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.752	4.752	0.0	0.998	452204	0.2789	Target=10.36	112	141	
513.00 > 169.00	4.752	4.752	0.0	0.998	40167		11.26(5.18-15.54)	112	144	
D 39 13C2 PFDA										
515.00 > 470.00	4.761	4.754	0.007	1.173	4197427	2.42		96.7	12257	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.761	4.755	0.006	1.000	163721	0.2328		97.2	1066	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.761	4.755	0.006	1.173	1032421	2.49		104	4598	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.917	4.912	0.005	1.211	1541416	2.38		95.2	2062	
41 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.917	4.915	0.002	1.000	107484	0.2389		95.6	151	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.038	5.037	0.001	1.143	139279	0.2318	Target=2.97	96.2	939	
599.00 > 99.00	5.038	5.037	0.001	1.143	46484		3.00(1.49-4.46)	96.2	842	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.065	5.060	0.005	1.000	265127	0.2426	Target=7.56	97.0	175	
563.00 > 169.00	5.065	5.060	0.005	1.000	34836		7.61(3.78-11.34)	97.0	406	
D 43 13C2 PFUnA										
565.00 > 520.00	5.065	5.062	0.003	1.248	3787817	2.56		102	12870	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.075	5.071	0.004	1.250	1646406	2.50		99.8	1969	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.075	5.075	0.0	1.000	106821	0.2295		91.8	551	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.193	5.191	0.002	1.178	507842	0.2296		97.5	1939	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.202	5.198	0.004	1.281	5384514	12.2		97.4	5000	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.210	5.209	0.001	1.002	108107	0.2398		95.9	262	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.219	5.215	0.004	1.286	1283749	2.31		92.5	142	
50 NMeFOSA										M
512.00 > 169.00	5.219	5.220	-0.001	1.000	114727	0.2373		94.9	426	M
57 Perfluorododecanoic acid										
613.00 > 569.00	5.340	5.338	0.002	1.000	312046	0.2341	Target=7.18	93.6	58.1	
613.00 > 169.00	5.340	5.338	0.002	1.000	42747		7.30(3.59-10.76)	93.6	536	
D 56 13C2 PFDoA										
615.00 > 570.00	5.340	5.339	0.001	1.315	3395718	2.59		104	11169	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.358	5.362	-0.004	1.125	120671	0.2176		90.3	1945	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.367	5.364	0.003	1.322	6015322	11.1		88.8	3736	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.375	5.376	-0.001	1.001	133940	0.2719		109	327	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.383	5.387	-0.004	1.326	1289555	2.29		91.6	688	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.394	5.395	-0.001	1.002	135323	0.2618		105	563	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.567	5.562	0.005	1.263	47563	0.2278	Target=0.79	94.2	487	
699.00 > 99.00	5.567	5.562	0.005	1.263	60463		0.79(0.39-1.18)	94.2	935	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.605	5.601	0.004	1.050	246788	0.2303	Target=6.63	92.1	42.8	
663.00 > 169.00	5.605	5.601	0.004	1.050	40373		6.11(3.32-9.95)	92.1	550	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.839	5.835	0.004	1.438	2233755	2.61		104	5581	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.839	5.838	0.001	1.000	217351	0.2432	Target=8.46	97.3	60.4	
713.00 > 219.00	5.830	5.838	-0.008	0.998	23994		9.06(4.23-12.69)	97.3	874	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.263	6.257	0.006	1.543	1674702	2.36		94.3	5461	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.263	6.258	0.005	1.000	155680	0.2496	Target=7.92	99.8	21.9	
813.00 > 169.00	6.254	6.258	-0.004	0.999	18480		8.42(3.96-11.88)	99.8	316	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.656	6.655	0.001	1.063	78914	0.2394	Target=10.24	95.8	16.7	
913.00 > 169.00	6.656	6.655	0.001	1.063	7346		10.74(5.12-15.36)	95.8	142	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00019 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d

Injection Date: 04-Jun-2020 12:15:08 Instrument ID: A15

Lims ID: IC L3 Full

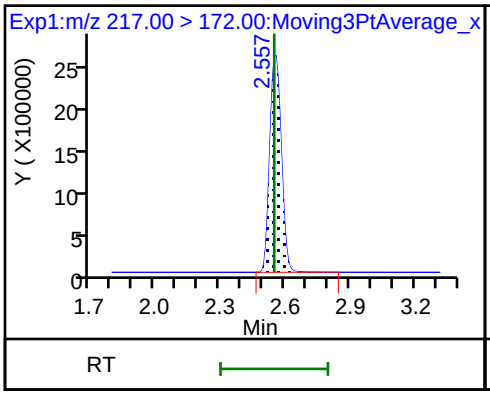
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 3 Worklist Smp#: 4

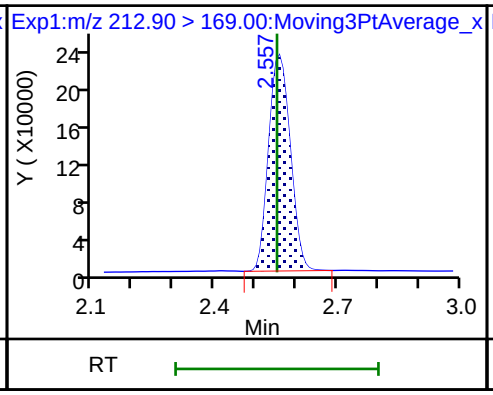
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

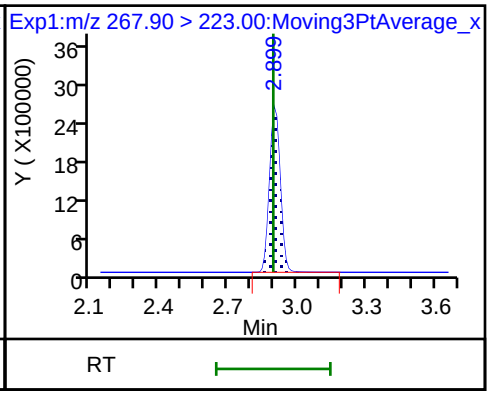
D 1 13C4 PFBA



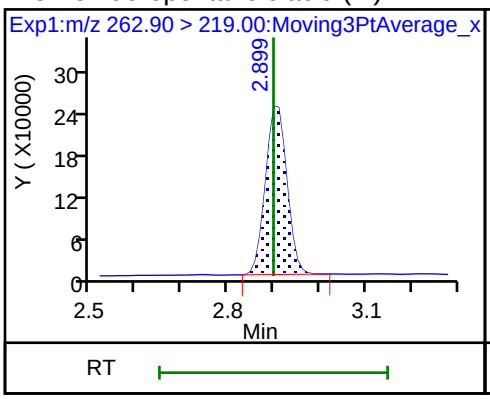
2 Perfluorobutanoic acid



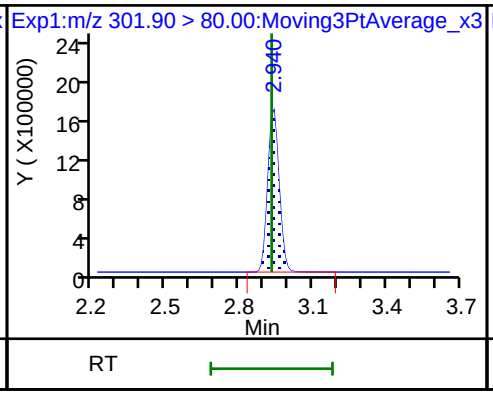
D 4 13C5 PFPeA



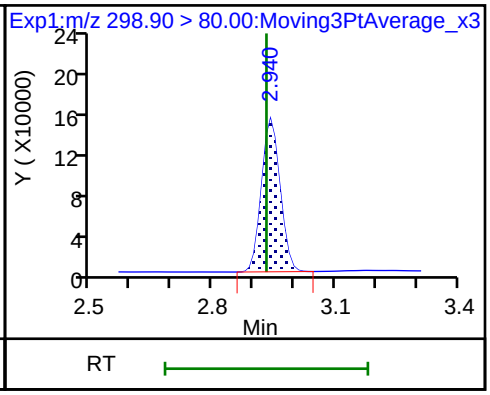
5 Perfluoropentanoic acid (M)



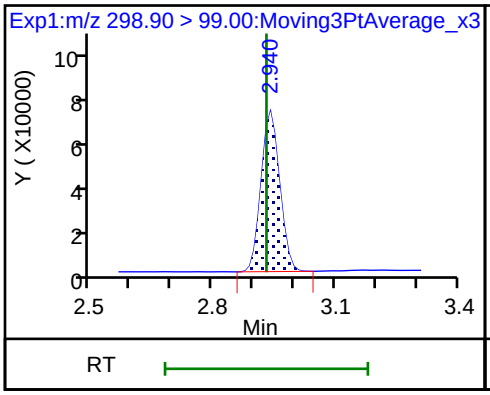
D 9 13C3 PFBS



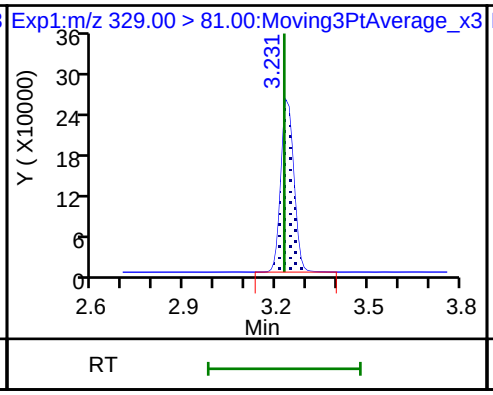
6 Perfluorobutanesulfonic acid



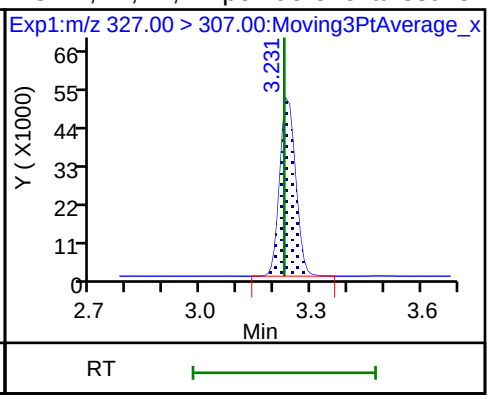
6 Perfluorobutanesulfonic acid



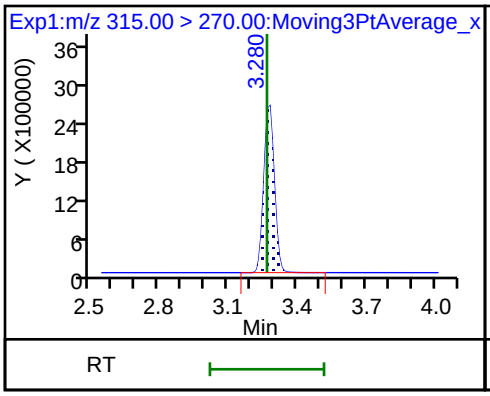
D 7 M2-4:2 FTS



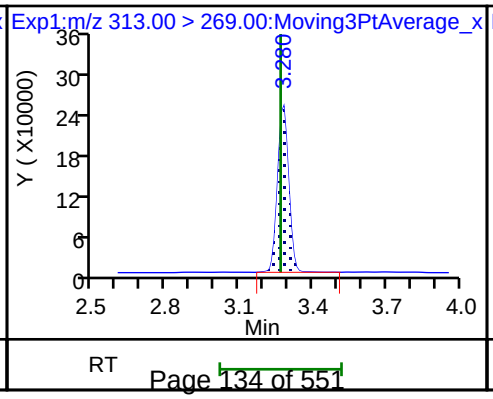
8 1H,1H,2H,2H-perfluorohexanesulfo



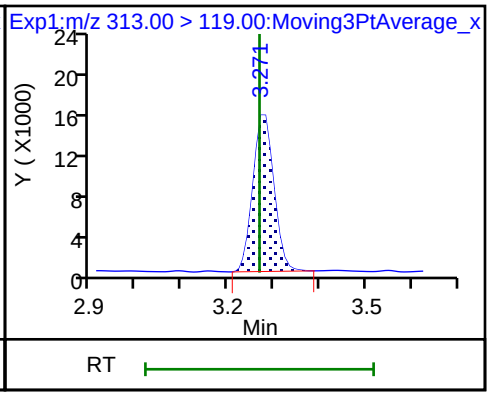
D 11 13C2 PFHxA



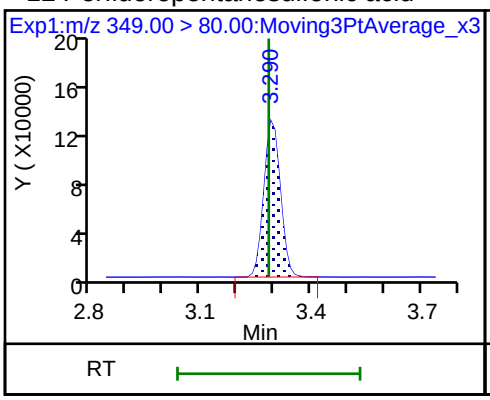
10 Perfluorohexanoic acid



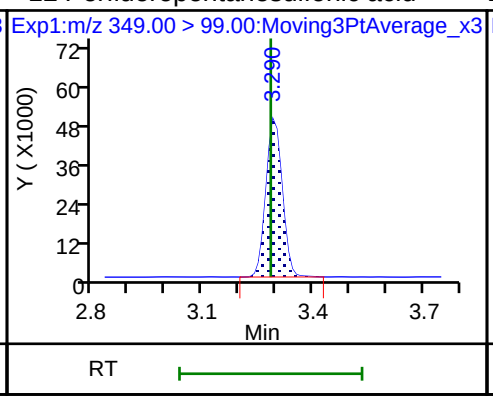
10 Perfluorohexanoic acid



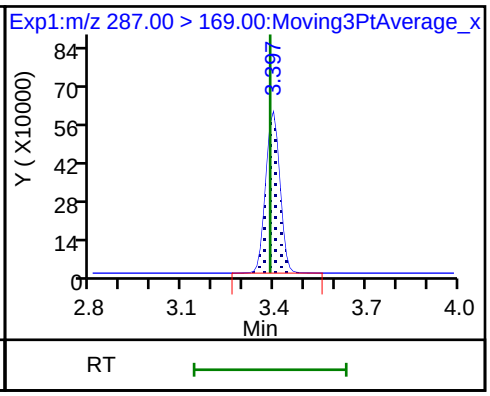
12 Perfluoropentanesulfonic acid



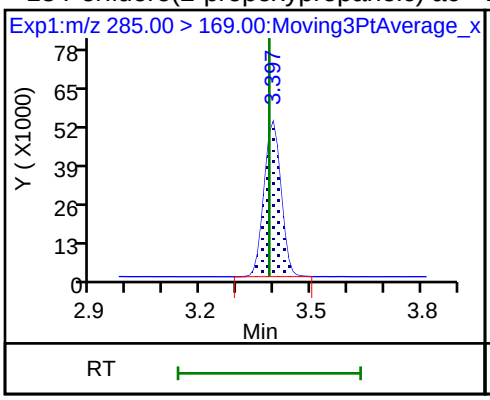
12 Perfluoropentanesulfonic acid



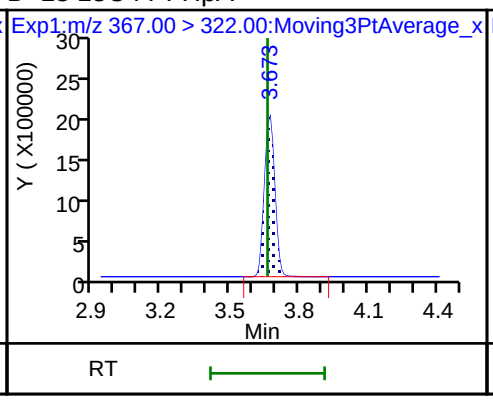
D 14 13C3 HFPO-DA



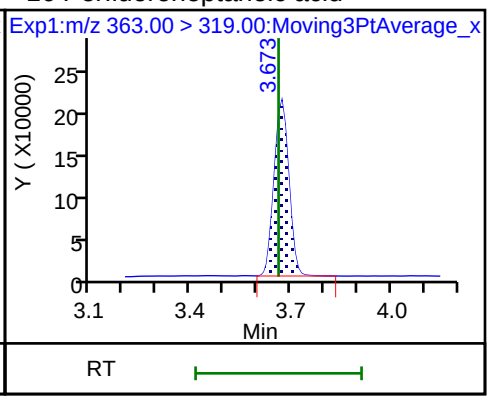
13 Perfluoro(2-propoxypropanoic) ac



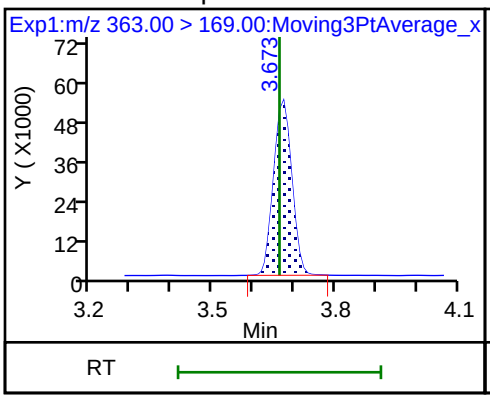
D 18 13C4 PFHpA



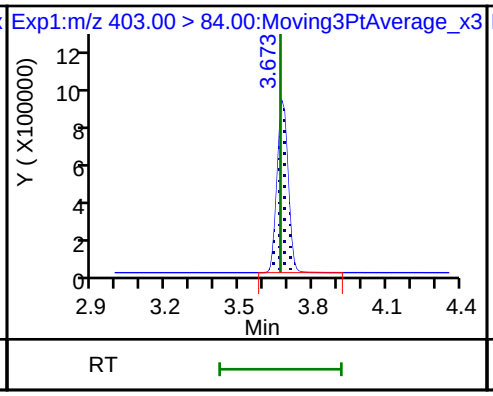
16 Perfluoroheptanoic acid



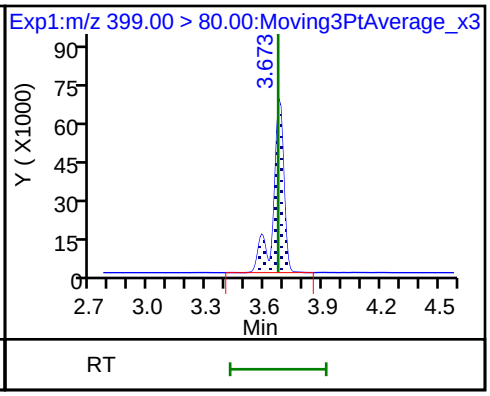
16 Perfluoroheptanoic acid



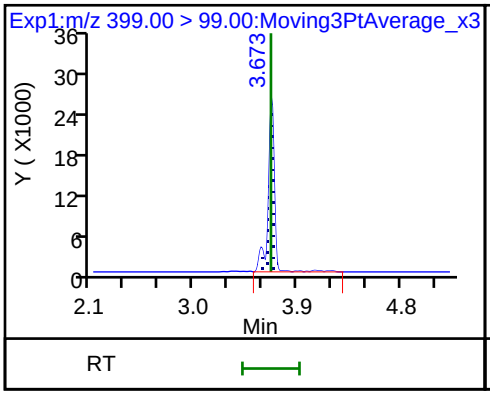
D 17 18O2 PFHxS



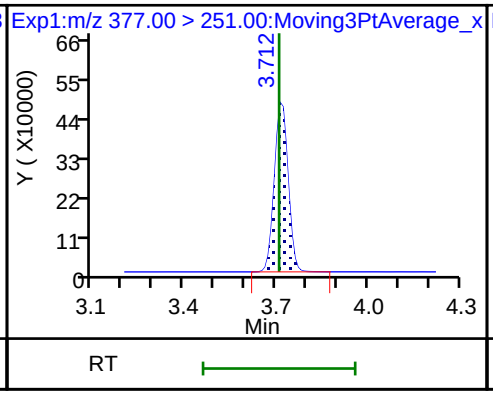
15 Perfluorohexanesulfonic acid



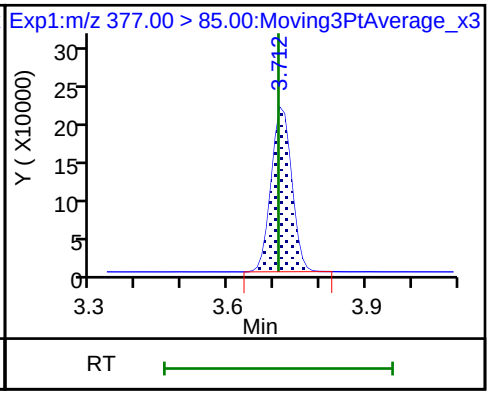
15 Perfluorohexanesulfonic acid



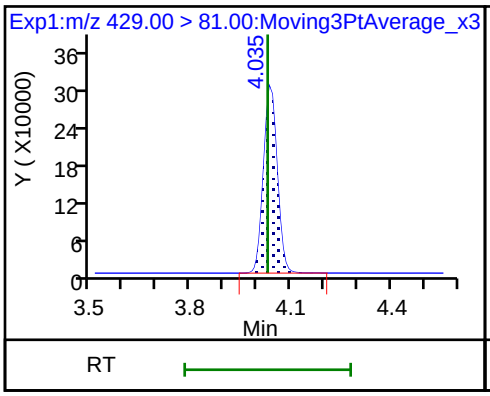
19 DONA



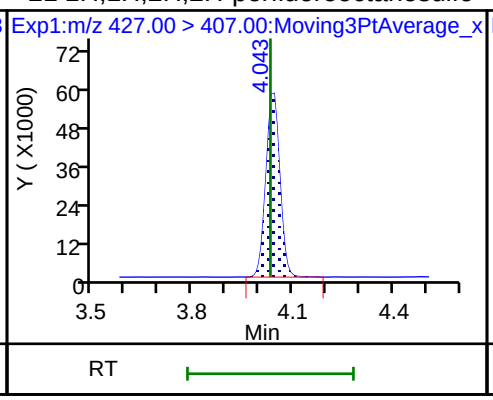
19 DONA



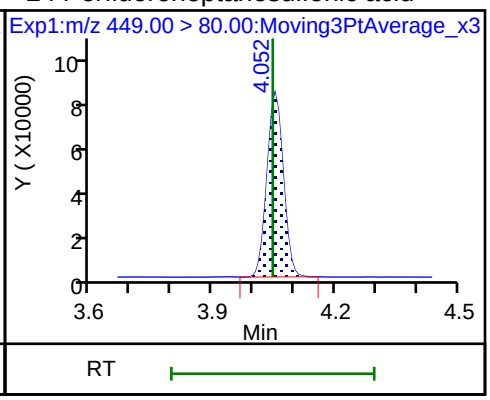
D 20 M2-6:2 FTS



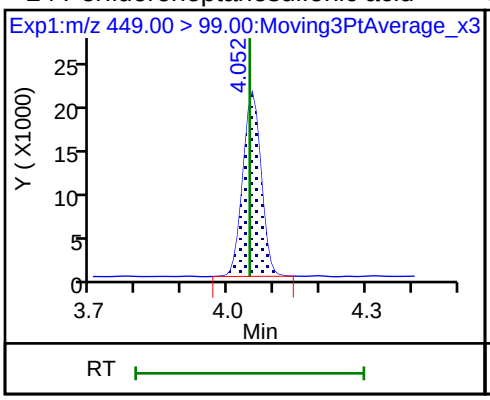
21 1H,1H,2H,2H-perfluorooctanesulfo



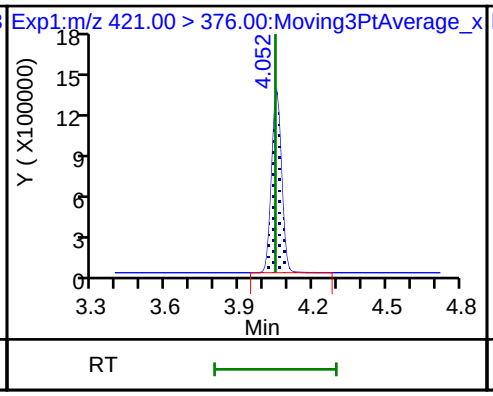
24 Perfluoroheptanesulfonic acid



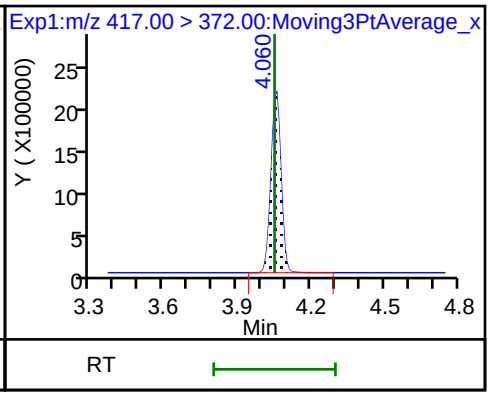
24 Perfluoroheptanesulfonic acid



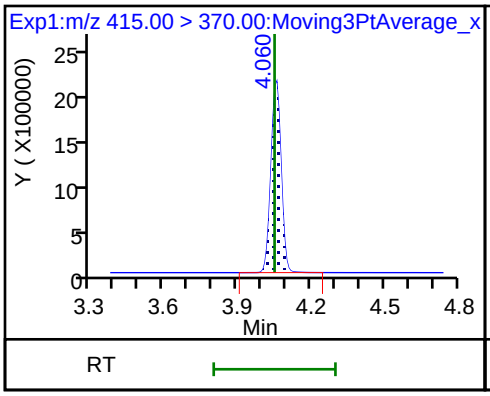
$ 26 13C8 PFOA



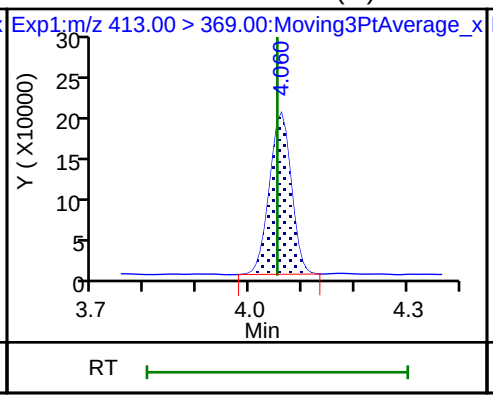
D 25 13C4 PFOA



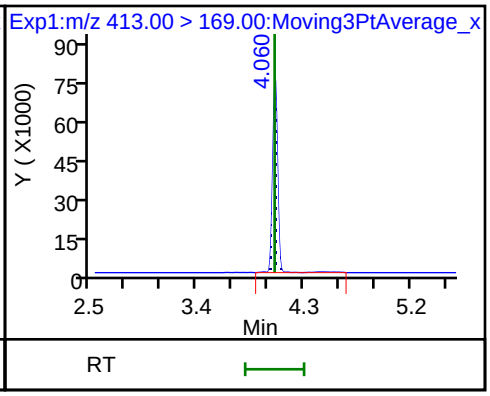
* 23 13C2 PFOA



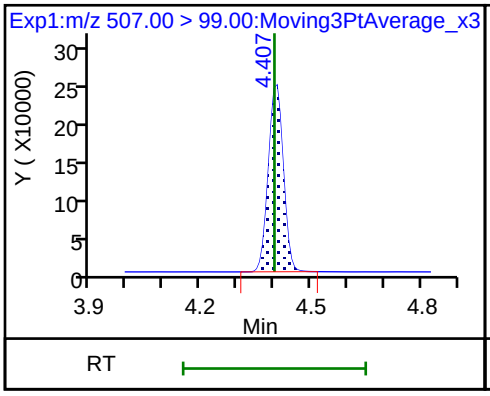
22 Perfluorooctanoic acid (M)



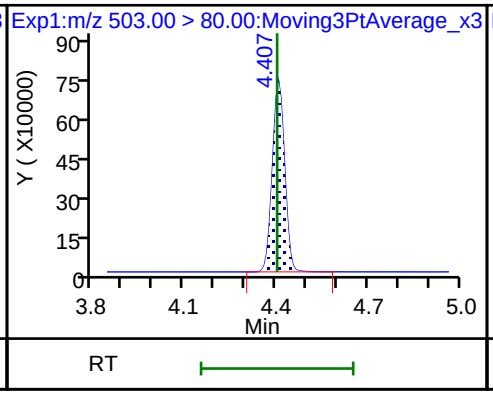
22 Perfluorooctanoic acid



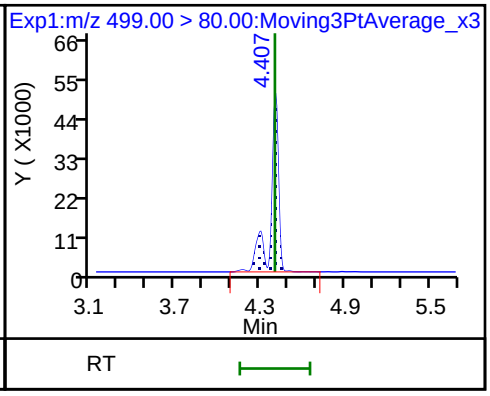
$ 28 13C8 PFOS



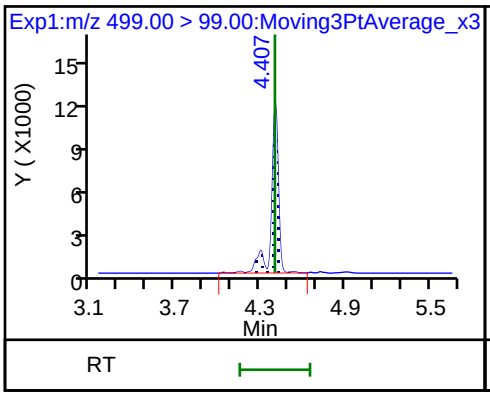
D 27 13C4 PFOS



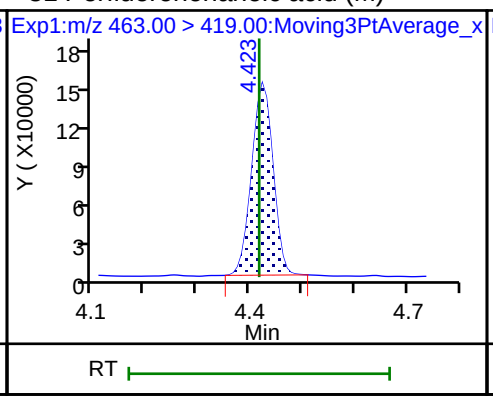
29 Perfluorooctanesulfonic acid



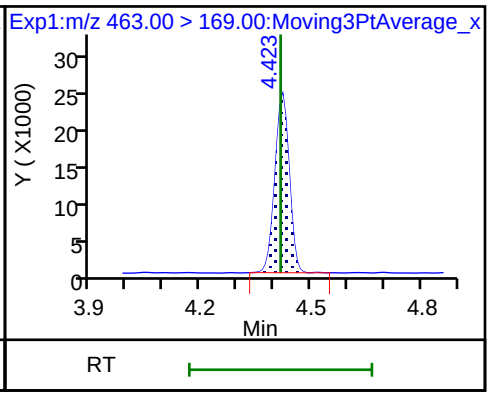
29 Perfluorooctanesulfonic acid



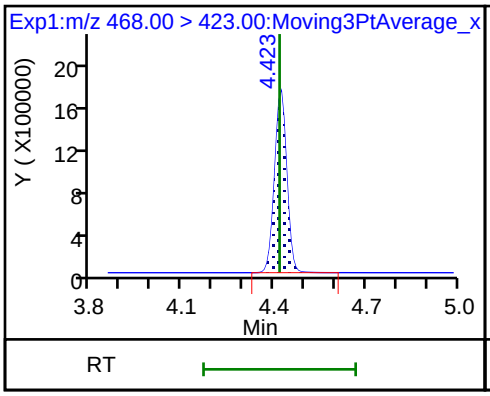
31 Perfluorononanoic acid (M)



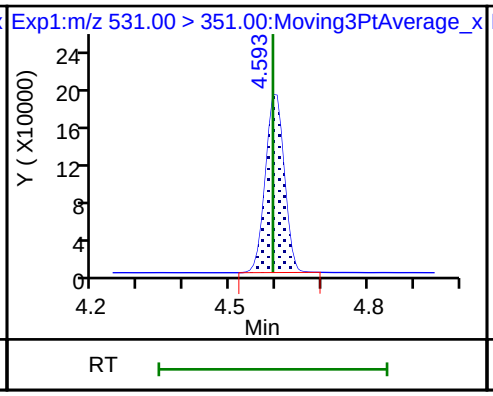
31 Perfluorononanoic acid



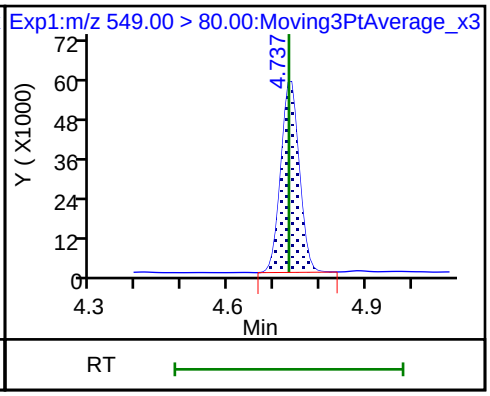
D 30 13C5 PFNA



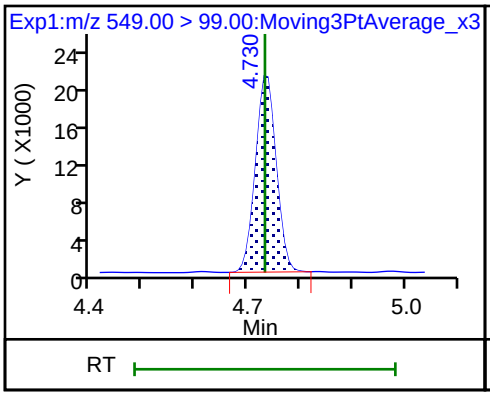
32 9-Chlorohexadecafluoro-3-oxanona



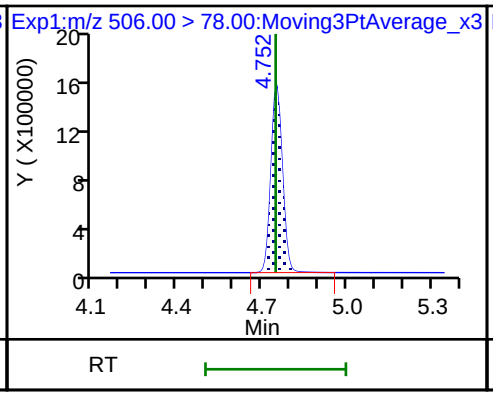
35 Perfluorononanesulfonic acid



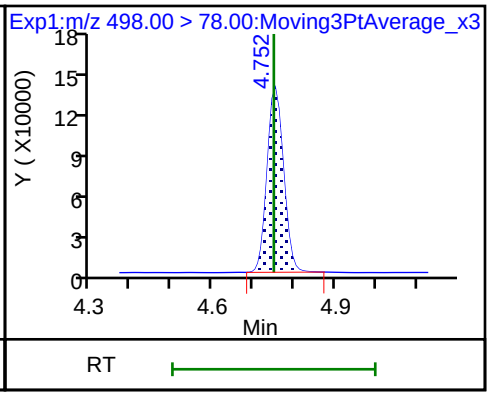
35 Perfluorononanesulfonic acid



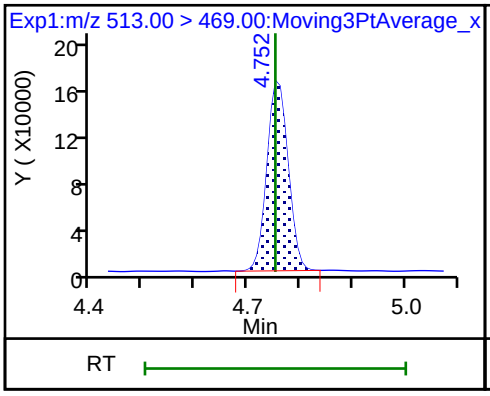
D 33 13C8 FOSA



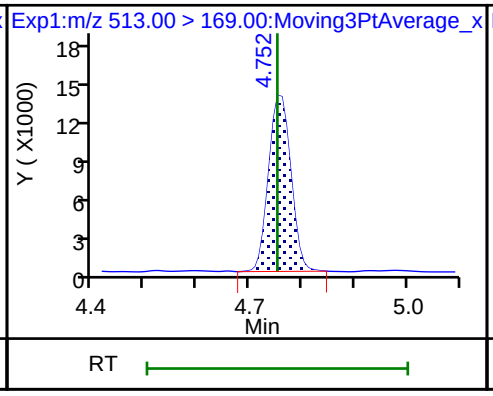
34 Perfluorooctanesulfonamide



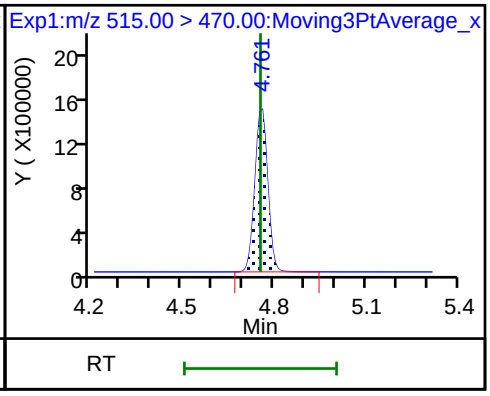
37 Perfluorodecanoic acid



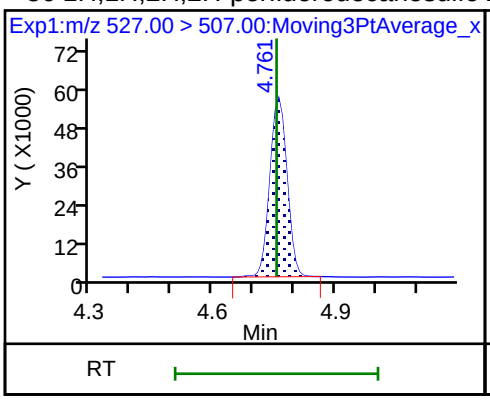
37 Perfluorodecanoic acid



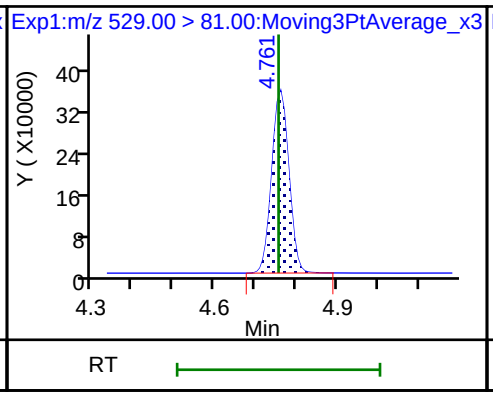
D 39 13C2 PFDA



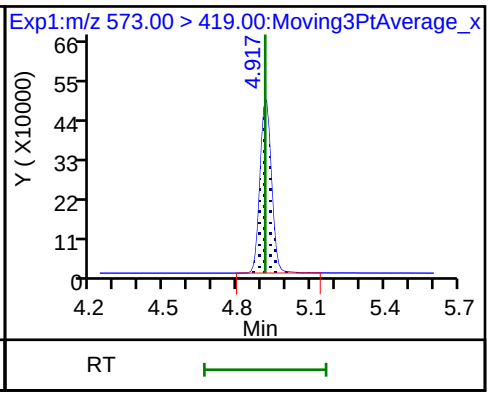
36 1H,1H,2H,2H-perfluorodecanesulfo



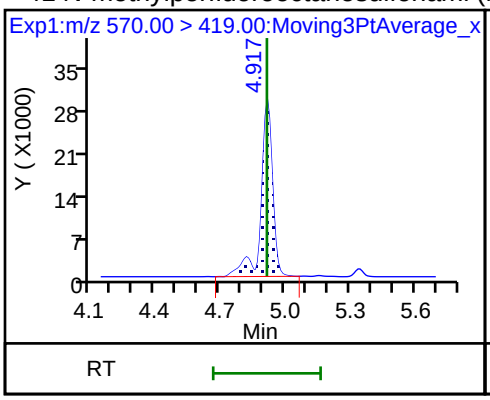
D 38 M2-8:2 FTS



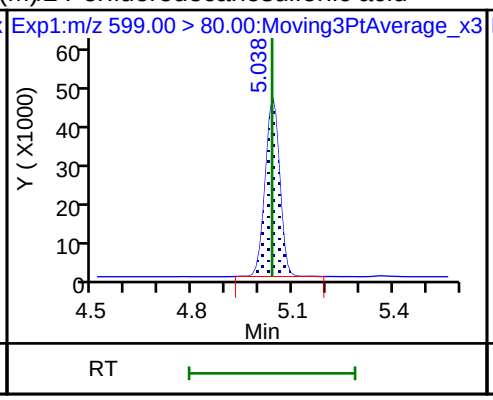
D 40 d3-NMeFOSAA



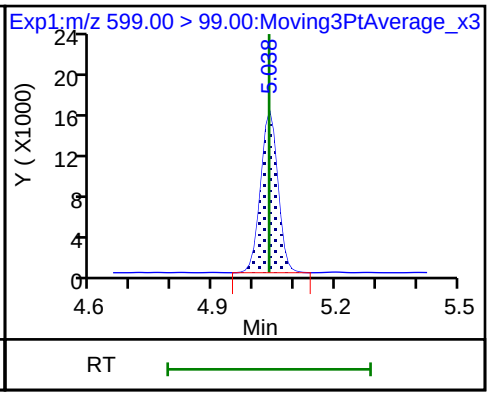
41 N-methylperfluorooctanesulfonami (M)



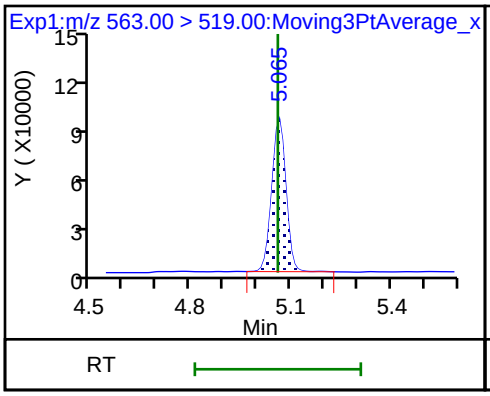
42 Perfluorodecanesulfonic acid



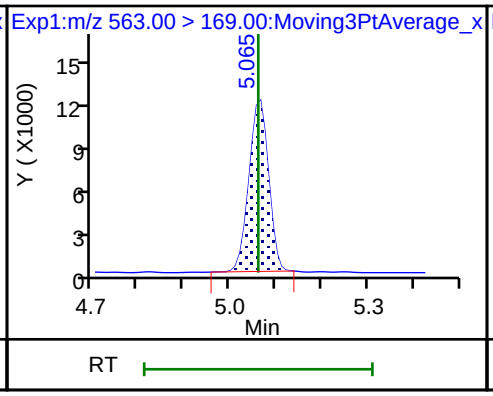
42 Perfluorodecanesulfonic acid



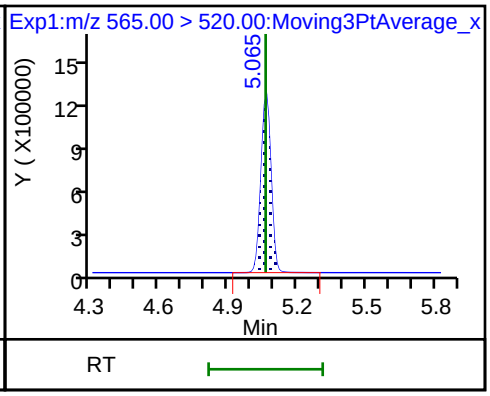
45 Perfluoroundecanoic acid



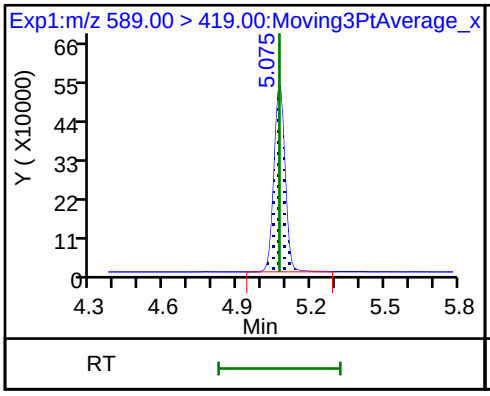
45 Perfluoroundecanoic acid



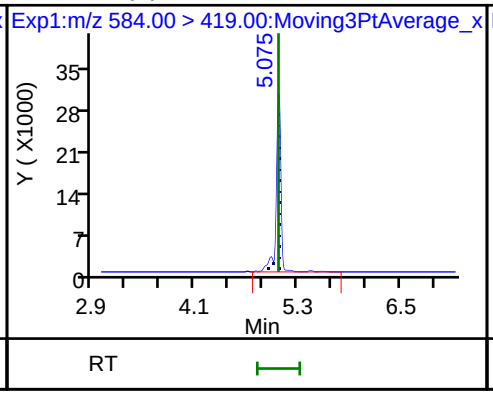
D 43 13C2 PFUnA



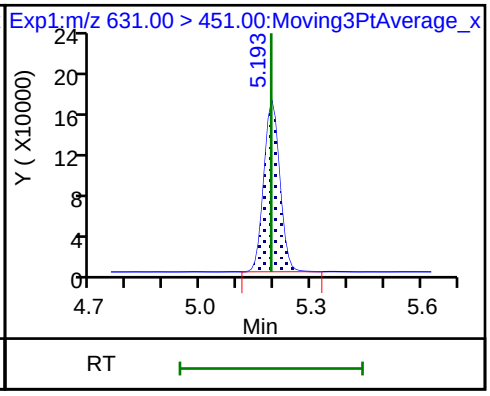
D 44 d5-NEtFOSAA



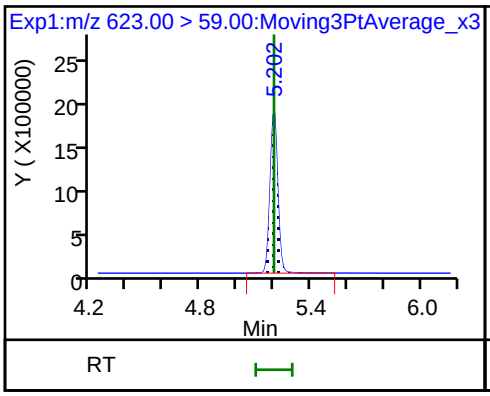
46 N-ethylperfluorooctanesulfonamid



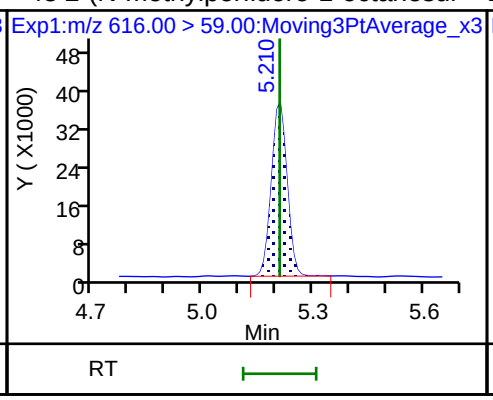
51 11-Chloroeicosafluoro-3-oxaundec



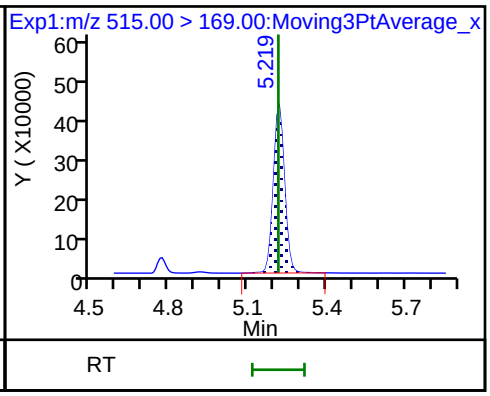
D 47 d7-N-MeFOSE-M



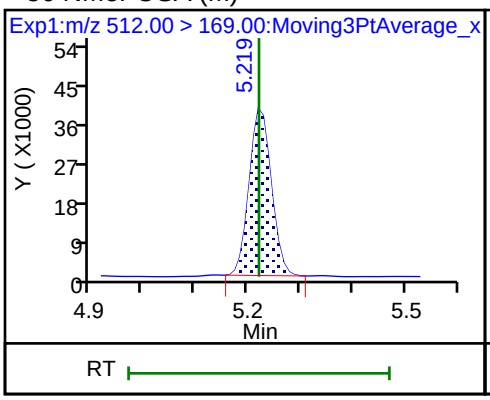
48 2-(N-methylperfluoro-1-octanesul



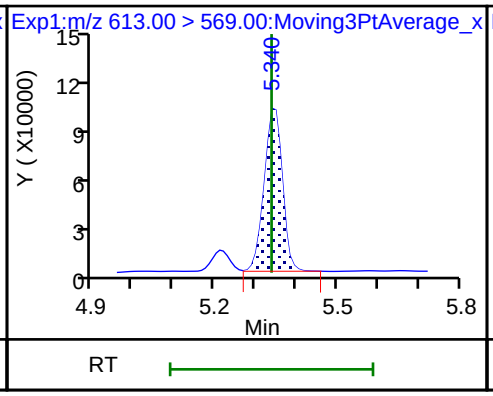
D 49 d-N-MeFOSA-M



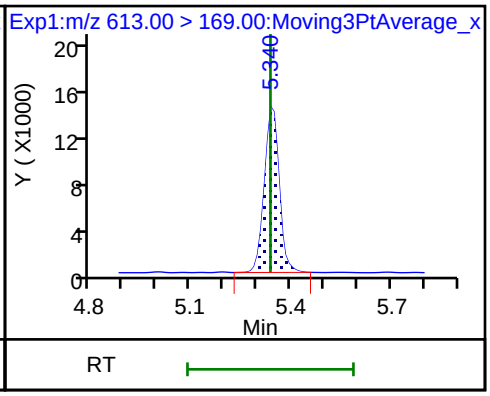
50 NMeFOSA (M)



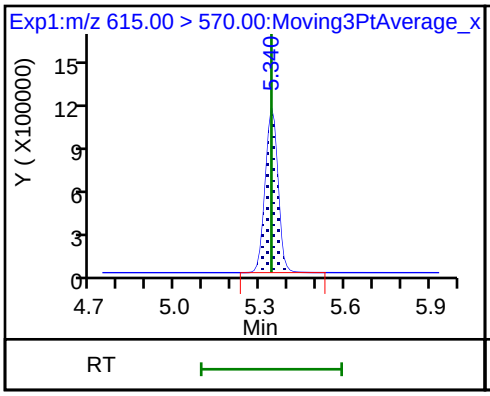
57 Perfluorododecanoic acid



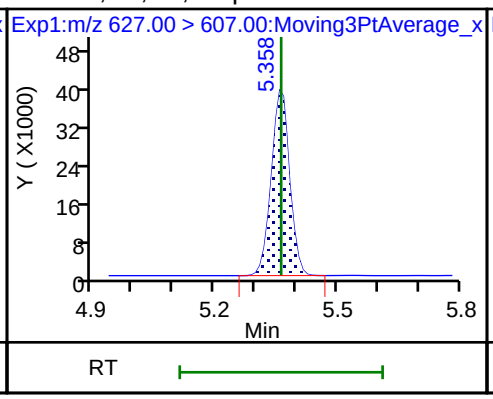
57 Perfluorododecanoic acid



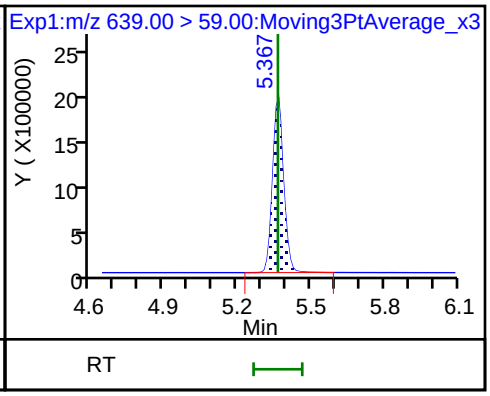
D 56 13C2 PFDoA



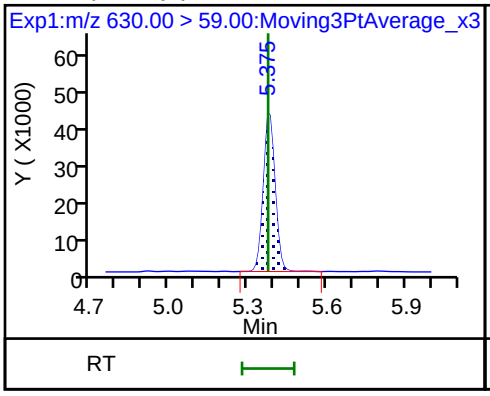
58 1H,1H,2H,2H-perfluorododecanesul



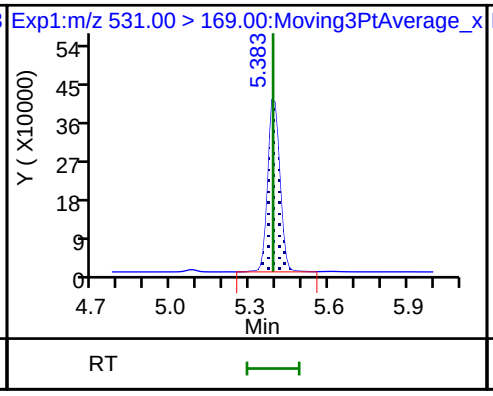
D 52 d9-N-EtFOSE-M



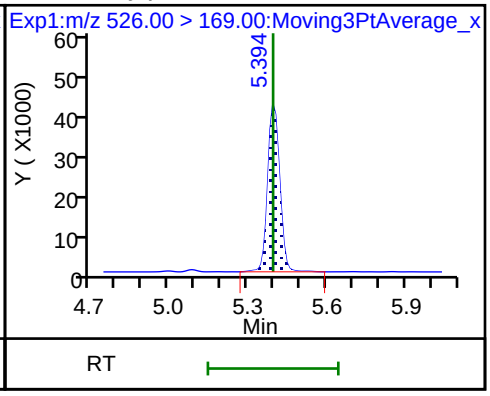
53 2-(N-ethylperfluoro-1-octanesulf



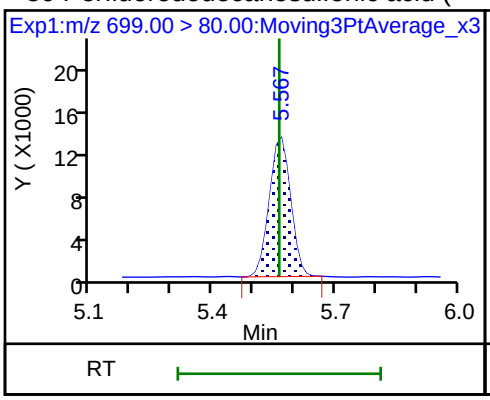
D 54 d-N-EtFOSA-M



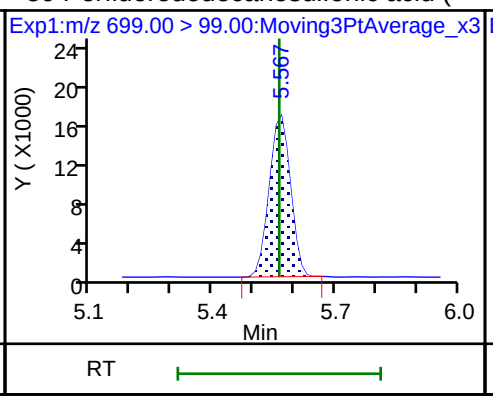
55 N-ethylperfluoro-1-octanesulfona



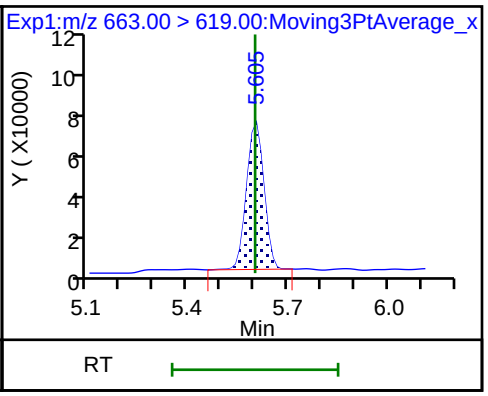
59 Perfluorododecanesulfonic acid (



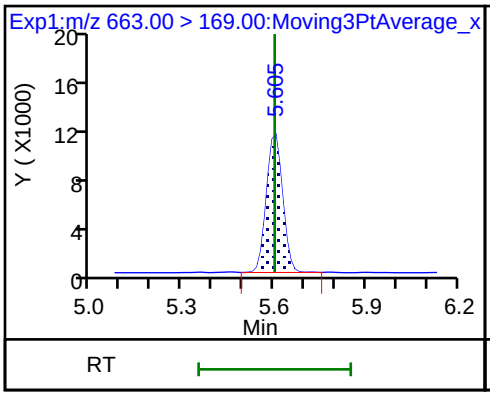
59 Perfluorododecanesulfonic acid (



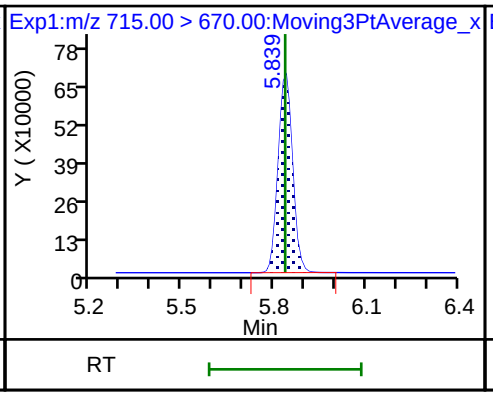
60 Perfluorotridecanoic acid



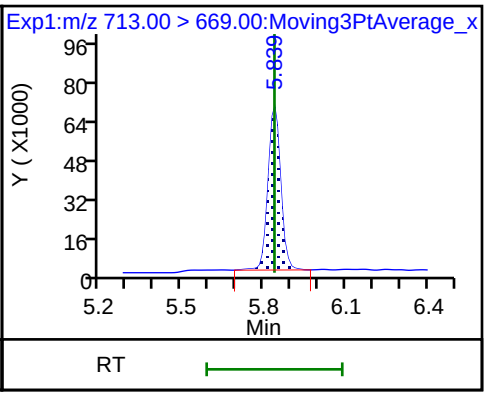
60 Perfluorotridecanoic acid



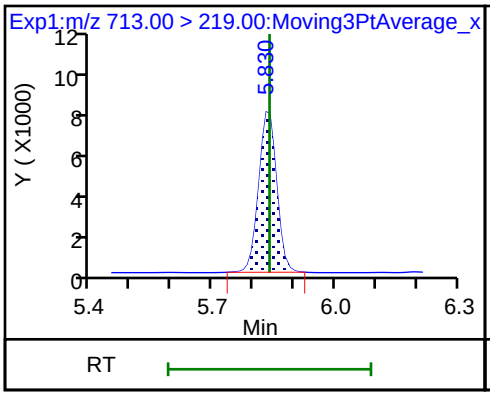
D 61 13C2 PFTeDA



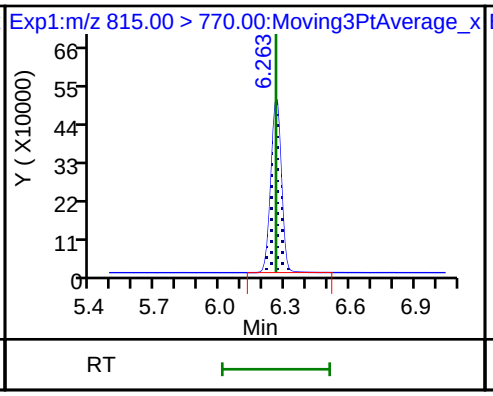
62 Perfluorotetradecanoic acid



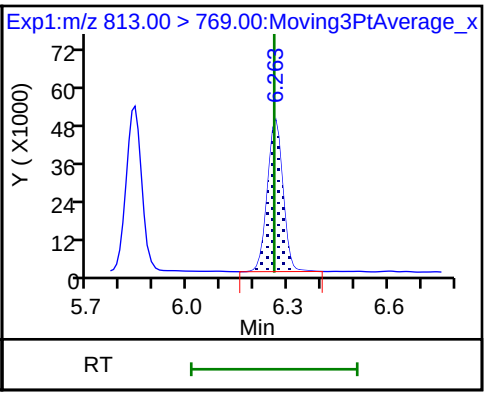
62 Perfluorotetradecanoic acid



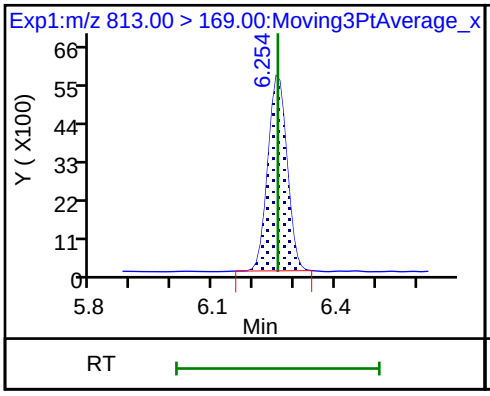
D 64 13C2 PFHxDA



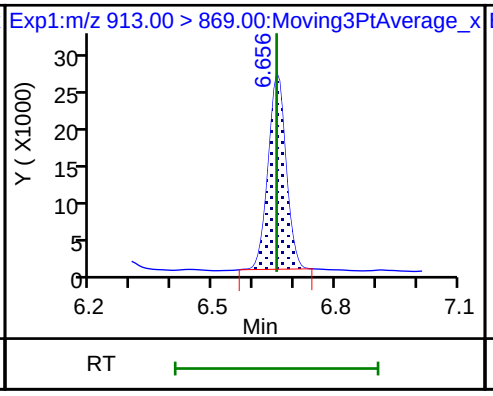
63 Perfluorohexadecanoic acid



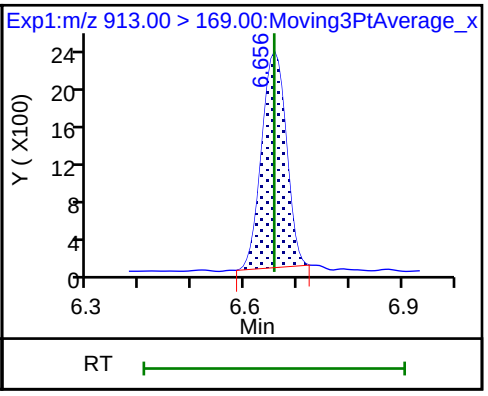
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

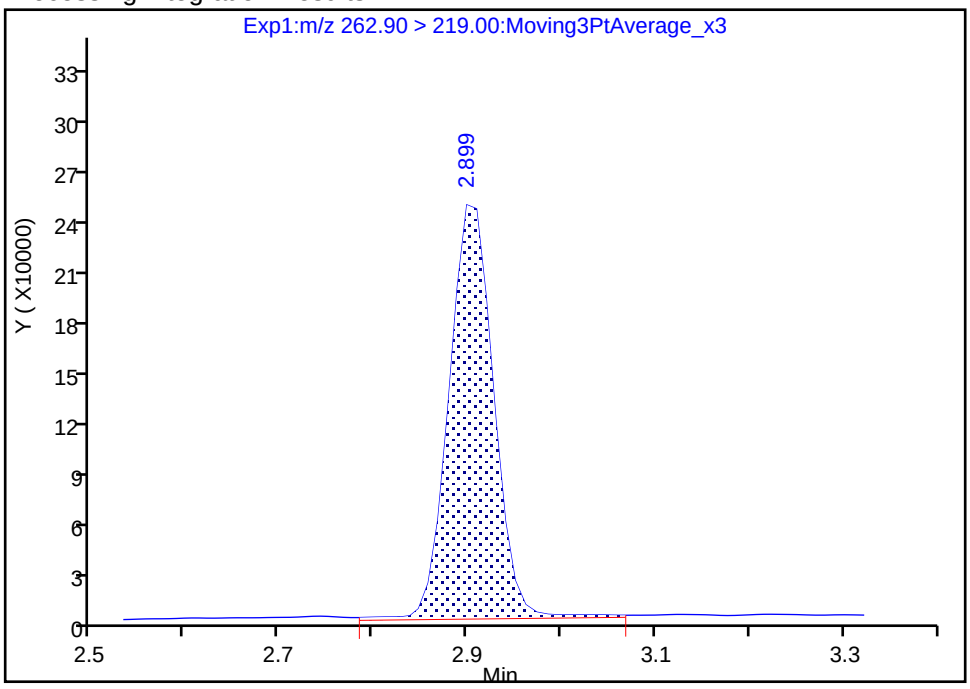
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d
Injection Date: 04-Jun-2020 12:15:08 Instrument ID: A15
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

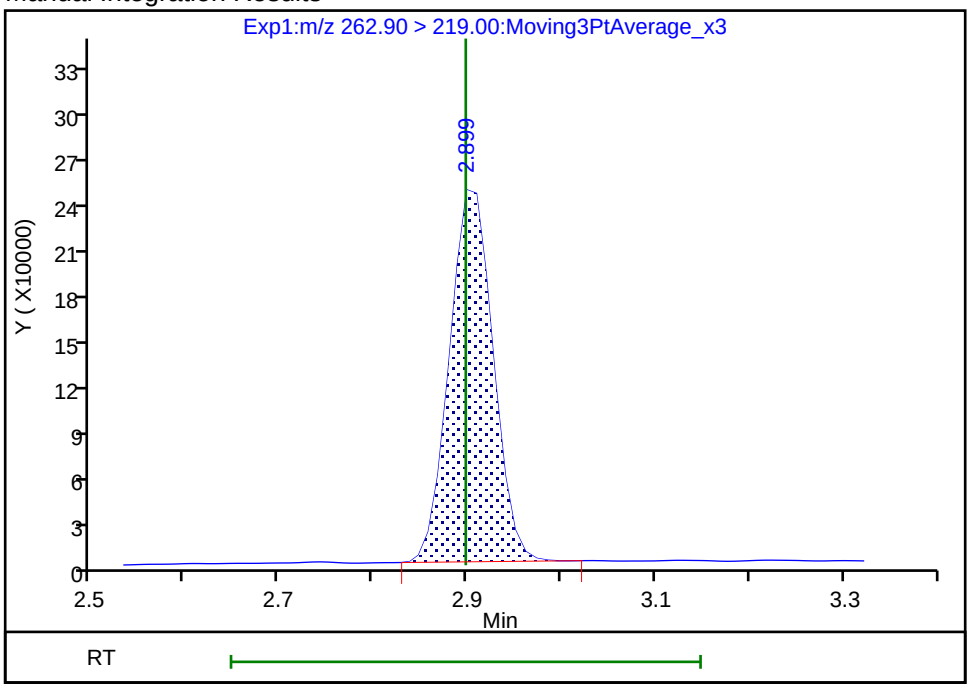
Processing Integration Results

RT: 2.90
Area: 821997
Amount: 0.244886
Amount Units: ng/ml



Manual Integration Results

RT: 2.90
Area: 792080
Amount: 0.237182
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:33:21
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

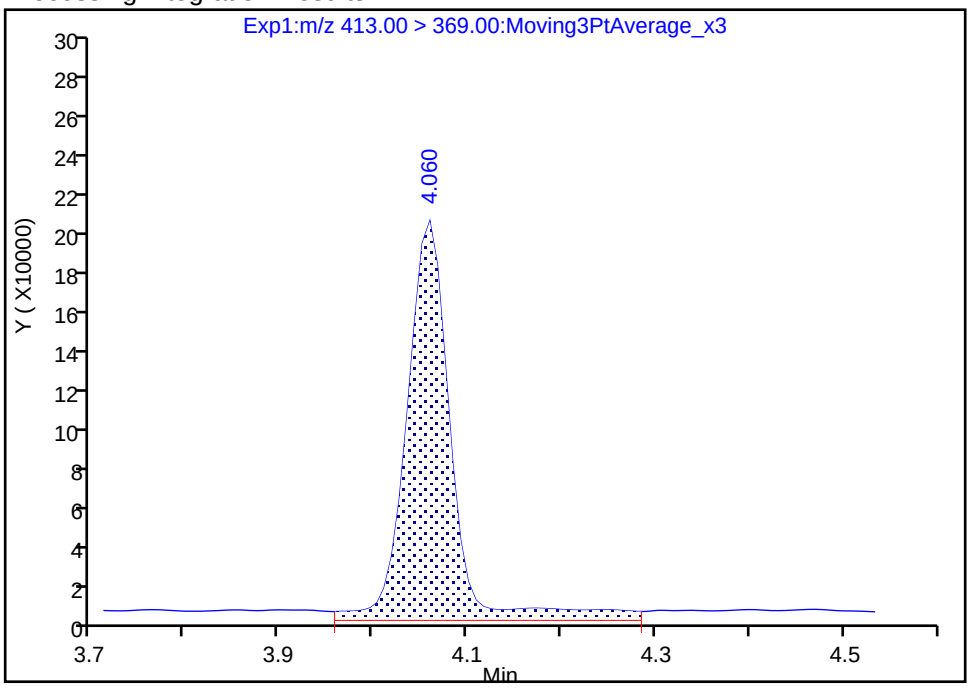
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d
Injection Date: 04-Jun-2020 12:15:08 Instrument ID: A15
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

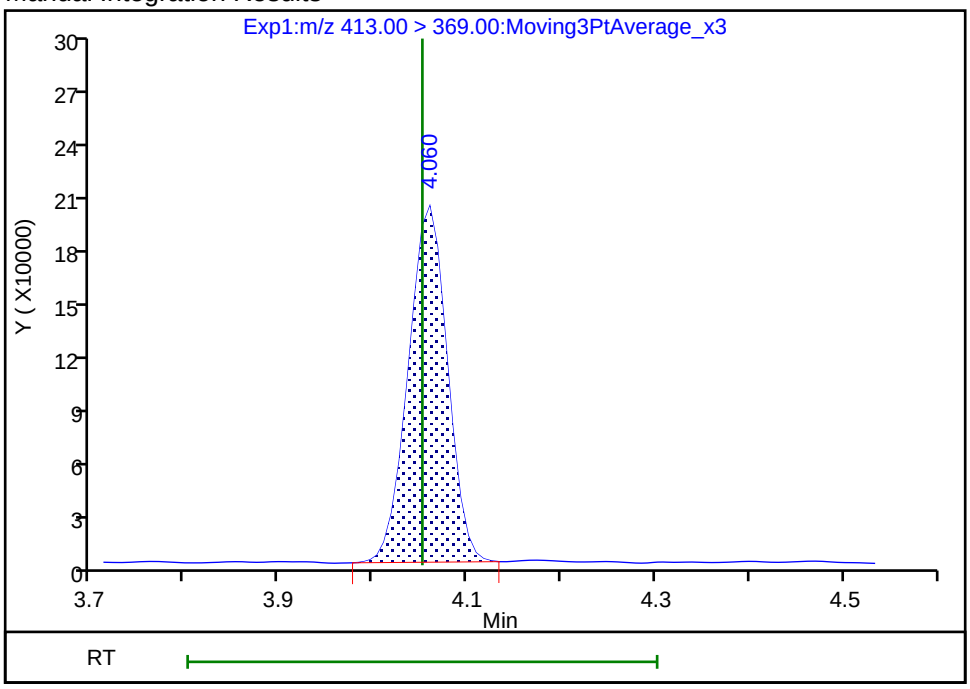
Processing Integration Results

RT: 4.06
Area: 675308
Amount: 0.257298
Amount Units: ng/ml



Manual Integration Results

RT: 4.06
Area: 573324
Amount: 0.223401
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:33:45
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

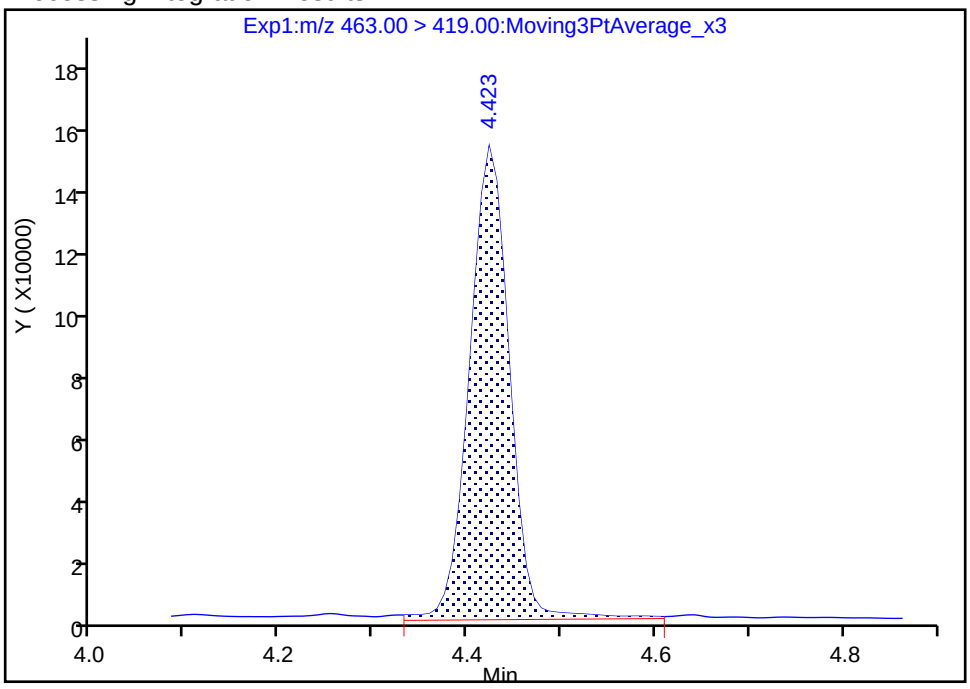
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d
Injection Date: 04-Jun-2020 12:15:08 Instrument ID: A15
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

31 Perfluorononanoic acid, CAS: 375-95-1

Signal: 1

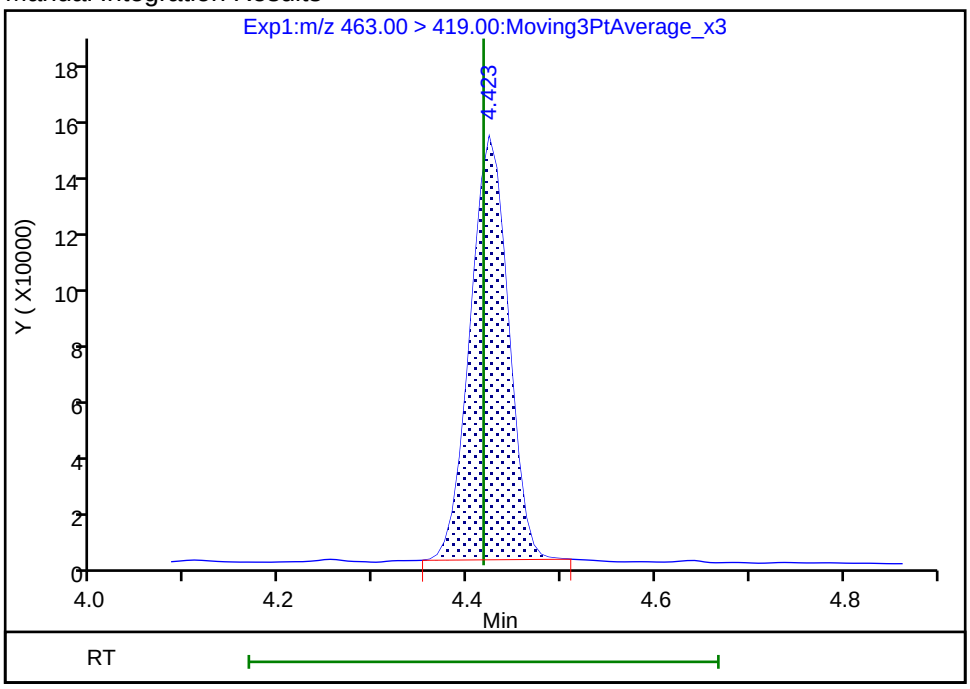
RT: 4.42
Area: 453816
Amount: 0.235127
Amount Units: ng/ml

Processing Integration Results



RT: 4.42
Area: 427845
Amount: 0.223389
Amount Units: ng/ml

Manual Integration Results



Reviewer: maxwellm, 04-Jun-2020 14:34:11
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

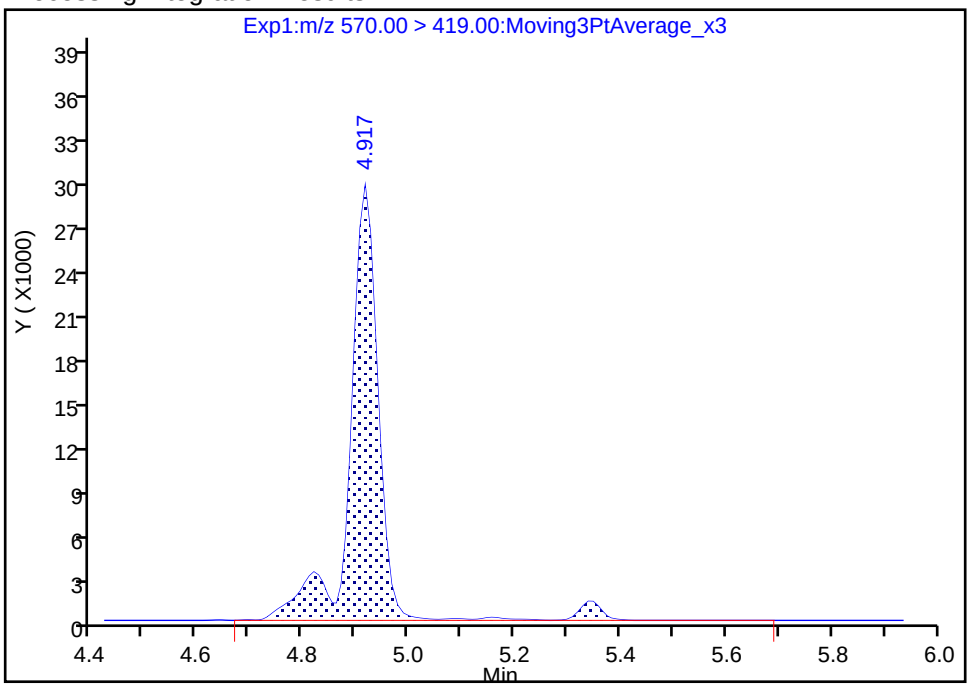
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d				
Injection Date:	04-Jun-2020 12:15:08	Instrument ID:	A15		
Lims ID:	IC L3 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

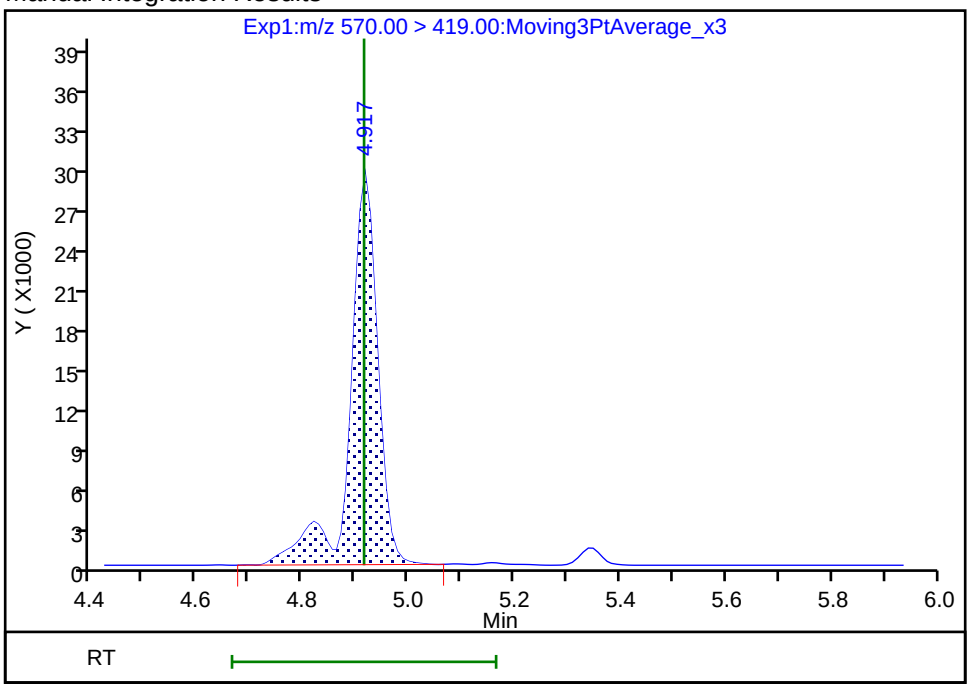
Processing Integration Results

RT: 4.92
Area: 113028
Amount: 0.249465
Amount Units: ng/ml



Manual Integration Results

RT: 4.92
Area: 107484
Amount: 0.238899
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:34:29
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

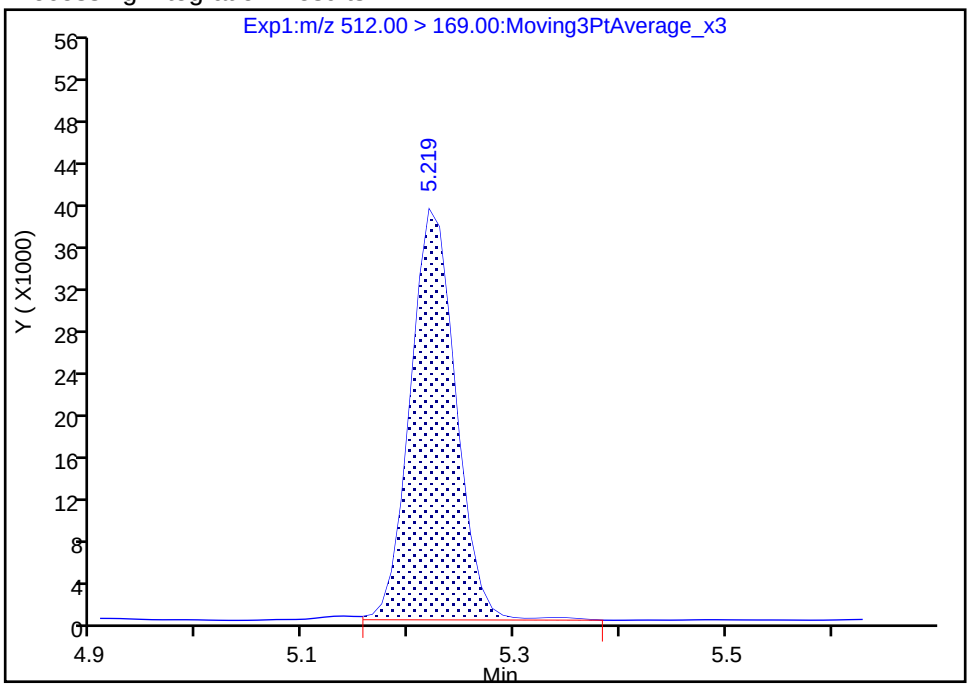
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_006.d
Injection Date: 04-Jun-2020 12:15:08 Instrument ID: A15
Lims ID: IC L3 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

50 NMeFOSA, CAS: 31506-32-8

Signal: 1

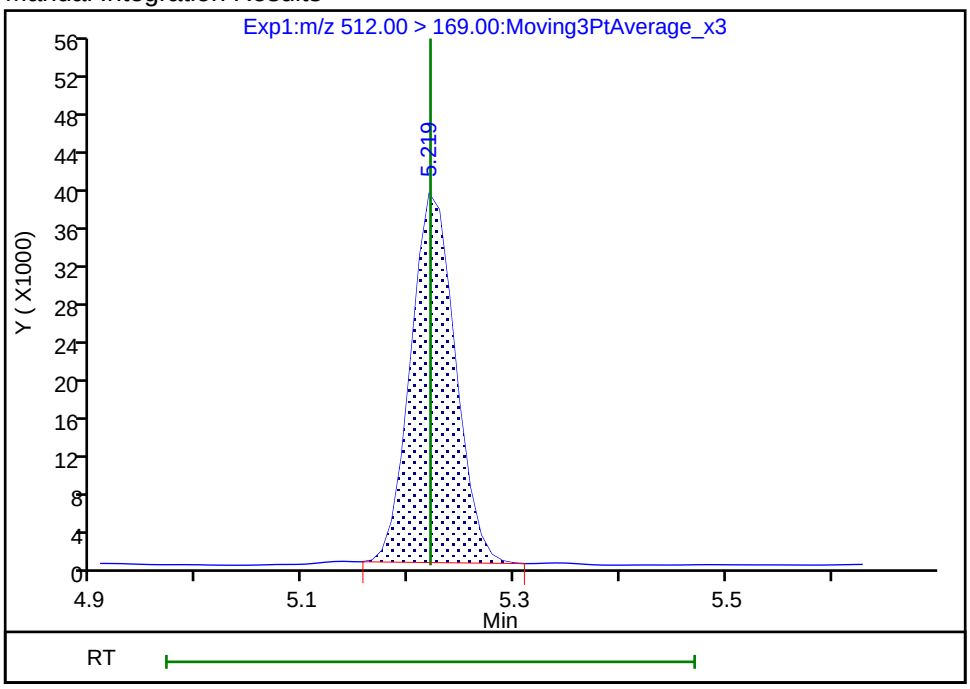
Processing Integration Results

RT: 5.22
Area: 117405
Amount: 0.242059
Amount Units: ng/ml



Manual Integration Results

RT: 5.22
Area: 114727
Amount: 0.237286
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:35:03
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_007.d
Lims ID: IC L4 Full
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 04-Jun-2020 12:24:14 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 4 (26)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:32 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:37:40
Ratio Calibration: Average of Initial Calibration

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	2.546	2.549	-0.003	0.629	9136872	2.37		94.7	18601	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.554	2.551	0.003	1.003	3470137	1.03		103	942	
D 4 13C5 PFPeA										
267.90 > 223.00	2.896	2.895	0.001	0.716	8414937	2.44		97.6	13950	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.896	2.898	-0.002	1.000	3218181	0.9491		94.9	244	
D 9 13C3 PFBS										
301.90 > 80.00	2.927	2.930	-0.003	0.723	5371544	2.25		96.6	14868	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.927	2.930	-0.003	1.000	1950584	0.8660	Target=2.14	98.0	900	
298.90 > 99.00	2.927	2.930	-0.003	1.000	918450		2.12(1.07-3.21)	98.0	581	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.228	3.226	0.002	0.798	710696	2.23		95.7	1646	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.228	3.227	0.001	1.000	665002	0.9688		104	9818	
D 11 13C2 PFHxA										
315.00 > 270.00	3.265	3.267	-0.002	0.807	8154944	2.43		97.4	17502	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.265	3.267	-0.002	1.000	2966517	0.9700	Target=15.73	97.0	1448	
313.00 > 119.00	3.265	3.267	-0.002	1.000	202253		14.67(7.86-23.59)	97.0	557	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.285	3.285	0.0	1.122	1588606	0.9374	Target=2.69	99.9	6700	
349.00 > 99.00	3.285	3.285	0.0	1.122	588797		2.70(1.35-4.04)	99.9	2955	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.381	3.386	-0.005	0.835	1765106	2.30		92.1	9143	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.381	3.386	-0.005	1.000	689188	1.07		107	7370	
D 18 13C4 PFHpA										
367.00 > 322.00	3.656	3.661	-0.005	0.904	6413151	2.41		96.5	14801	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.656	3.662	-0.006	1.000	2719950	1.05	Target=3.80	105	986	
363.00 > 169.00	3.656	3.662	-0.006	1.000	708487		3.84(1.90-5.71)	105	2915	
D 17 18O2 PFHxS										
403.00 > 84.00	3.666	3.667	-0.001	0.906	2649716	2.30		97.4	8664	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.666	3.670	-0.004	1.000	1068371	0.8491	Target=2.99	93.3	4934	
399.00 > 99.00	3.666	3.670	-0.004	1.000	375355		2.85(1.50-4.49)	93.3	996	
19 DONA										
377.00 > 251.00	3.706	3.709	-0.003	0.843	6190367	0.9871	Target=2.14	105	13407	
377.00 > 85.00	3.706	3.709	-0.003	0.843	2878704		2.15(1.07-3.21)	105	6933	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.030	4.030	0.0	0.996	829038	2.36		99.4	5226	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.030	4.032	-0.002	1.000	652691	0.9513		100	4723	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.039	4.046	-0.007	0.919	898706	0.9632	Target=3.77	101	3702	
449.00 > 99.00	4.039	4.046	-0.007	0.919	245852		3.66(1.89-5.66)	101	2588	
$ 26 13C8 PFOA										
421.00 > 376.00	4.039	4.046	-0.007	0.998	3199649	2.17		88.6	9868	
D 25 13C4 PFOA										
417.00 > 372.00	4.047	4.051	-0.004	1.000	5864633	2.44		97.6	12184	
* 23 13C2 PFOA										
415.00 > 370.00	4.047	4.051	-0.004		6096629	2.50			10754	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.047	4.052	-0.005	1.000	2550630	1.03	Target=2.88	103	169	
413.00 > 169.00	4.047	4.052	-0.005	1.000	823931		3.10(1.44-4.31)	103	7327	
$ 28 13C8 PFOS										
507.00 > 99.00	4.395	4.400	-0.005	1.086	679528	2.24		93.7	4369	
D 27 13C4 PFOS										
503.00 > 80.00	4.395	4.402	-0.007	1.086	2044276	2.29		95.8	7422	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.403	4.403	0.0	1.002	763648	0.9023	Target=4.89	97.2	4331	
499.00 > 99.00	4.395	4.403	-0.008	1.000	151424		5.04(2.44-7.33)	97.2	794	M
31 Perfluorononanoic acid										
463.00 > 419.00	4.411	4.417	-0.006	1.000	1874281	0.99	Target=7.00	99.0	373	
463.00 > 169.00	4.411	4.417	-0.006	1.000	266260		7.04(3.50-10.51)	99.0	1225	
D 30 13C5 PFNA										
468.00 > 423.00	4.411	4.417	-0.006	1.090	4666713	2.54		101	10610	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.589	4.592	-0.003	1.044	2244602	0.9614		103	7849	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.728	4.732	-0.004	1.076	681848	1.00	Target=2.77	104	1954	
549.00 > 99.00	4.728	4.732	-0.004	1.076	239776		2.84(1.38-4.15)	104	2262	
D 33 13C8 FOSA										
506.00 > 78.00	4.742	4.747	-0.005	1.172	4426342	2.49		99.8	7590	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.742	4.749	-0.007	1.000	1526209	0.9814		98.1	2743	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.750	4.752	-0.002	1.000	1788273	1.03	Target=10.36	103	513	
513.00 > 169.00	4.750	4.752	-0.002	1.000	160098		11.17(5.18-15.54)	103	218	
D 39 13C2 PFDA										
515.00 > 470.00	4.750	4.754	-0.004	1.174	4515884	2.57		103	12475	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.750	4.755	-0.005	1.000	654827	0.9724		101	3896	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.750	4.755	-0.005	1.174	988595	2.36		98.6	5582	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.904	4.912	-0.008	1.212	1579238	2.41		96.5	2280	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.914	4.915	-0.001	1.002	445393	0.9662		96.6	7475	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.037	5.037	0.0	1.146	592449	0.9882	Target=2.97	103	2411	
599.00 > 99.00	5.037	5.037	0.0	1.146	206001		2.88(1.49-4.46)	103	1855	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.055	5.060	-0.005	1.000	1205393	1.13	Target=7.56	113	659	
563.00 > 169.00	5.064	5.060	0.004	1.002	161770		7.45(3.78-11.34)	113	1042	
D 43 13C2 PFUnA										
565.00 > 520.00	5.055	5.062	-0.007	1.249	3702710	2.48		99.0	10707	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.064	5.071	-0.007	1.251	1593419	2.39		95.6	1927	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.073	5.075	-0.002	1.002	428790	0.9520		95.2	1534	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.191	5.191	0.0	1.181	2113979	0.9582		102	8176	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.191	5.198	-0.007	1.283	5680746	12.7		102	4227	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.209	5.209	0.0	1.003	495182	1.04		104	1080	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.209	5.215	-0.006	1.287	1288669	2.30		91.9	304	
50 NMeFOSA										
512.00 > 169.00	5.217	5.220	-0.003	1.002	543254	1.12		112	557	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.338	5.338	0.0	1.000	1327041	0.9421	Target=7.18	94.2	230	
613.00 > 169.00	5.338	5.338	0.0	1.000	159454		8.32(3.59-10.76)	94.2	1628	
D 56 13C2 PFDoA										
615.00 > 570.00	5.338	5.339	-0.001	1.319	3587872	2.71		108	8736	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.356	5.362	-0.006	1.128	500599	0.9426		97.8	4367	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.365	5.364	0.001	1.326	6515560	11.9		95.2	5236	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.373	5.376	-0.003	1.001	564377	1.06		106	1299	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.381	5.387	-0.006	1.330	1298529	2.28		91.2	617	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.392	5.395	-0.003	1.002	574700	1.10		110	782	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.553	5.562	-0.009	1.263	211017	1.01	Target=0.79	105	2733	
699.00 > 99.00	5.553	5.562	-0.009	1.263	252730		0.83(0.39-1.18)	105	2548	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.590	5.601	-0.011	1.047	1033363	0.9125	Target=6.63	91.2	170	
663.00 > 169.00	5.590	5.601	-0.011	1.047	146952		7.03(3.32-9.95)	91.2	1116	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.829	5.835	-0.006	1.440	1889089	2.18		87.3	5930	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.838	5.838	0.0	1.002	931047	1.23	Target=8.46	123	255	
713.00 > 219.00	5.829	5.838	-0.009	1.000	104064		8.95(4.23-12.69)	123	1725	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.254	6.257	-0.003	1.546	1480897	2.06		82.5	4206	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.254	6.258	-0.004	1.000	595962	1.16	Target=7.92	116	84.8	
813.00 > 169.00	6.254	6.258	-0.004	1.000	74498		8.00(3.96-11.88)	116	952	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.656	6.655	0.001	1.064	342848	1.18	Target=10.24	118	65.8	
913.00 > 169.00	6.649	6.655	-0.006	1.063	32557		10.53(5.12-15.36)	118	573	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:34 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_007.d

Injection Date: 04-Jun-2020 12:24:14 Instrument ID: A15

Lims ID: IC L4 Full

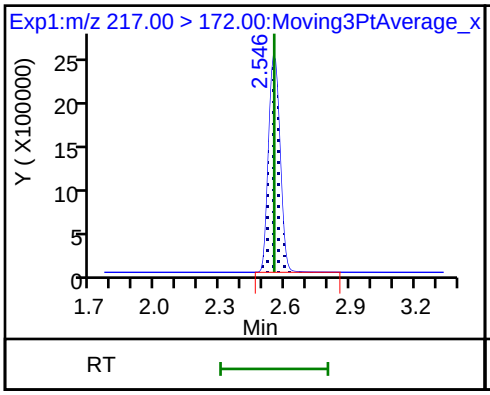
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 4 Worklist Smp#: 5

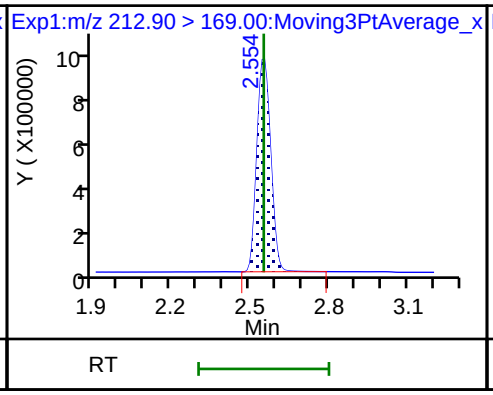
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

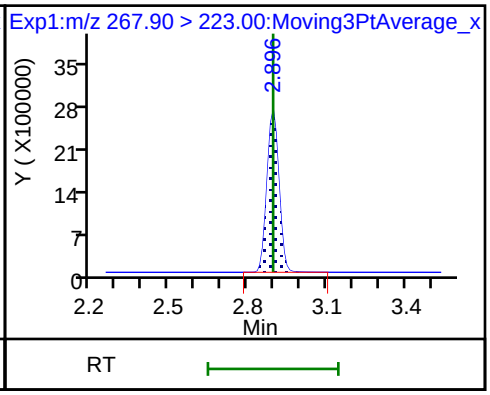
D 1 13C4 PFBA



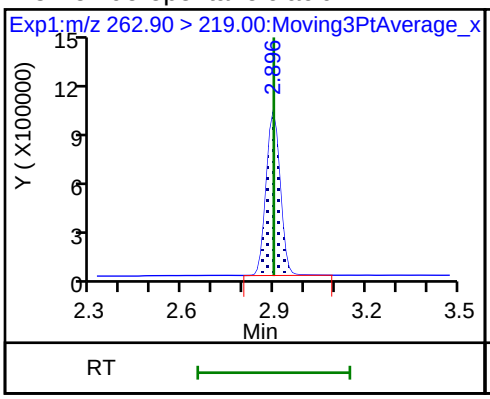
2 Perfluorobutanoic acid



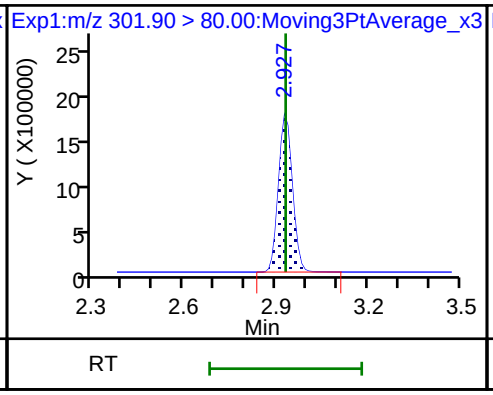
D 4 13C5 PFPeA



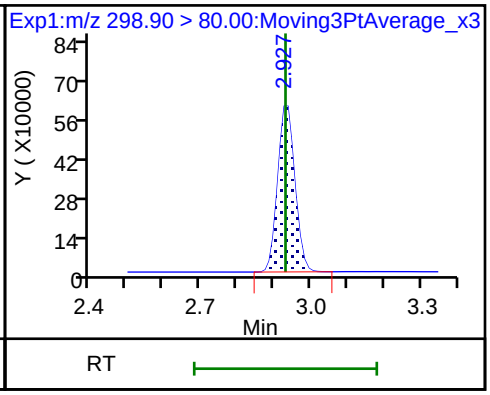
5 Perfluoropentanoic acid



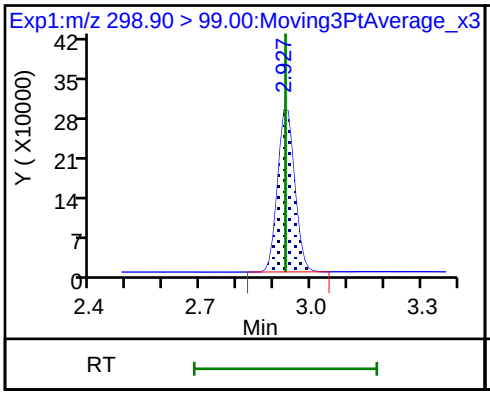
D 9 13C3 PFBS



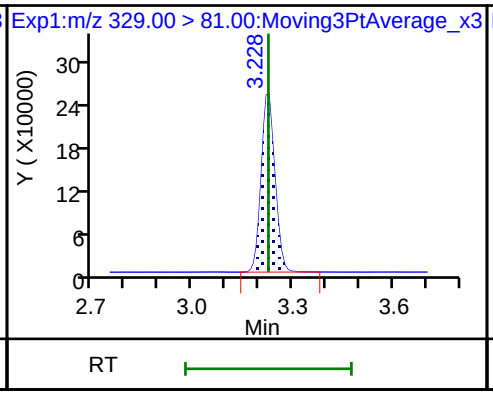
6 Perfluorobutanesulfonic acid



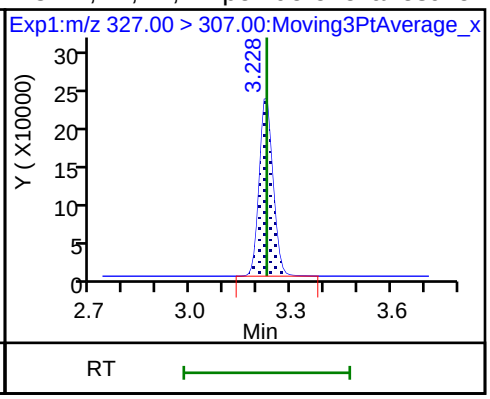
6 Perfluorobutanesulfonic acid



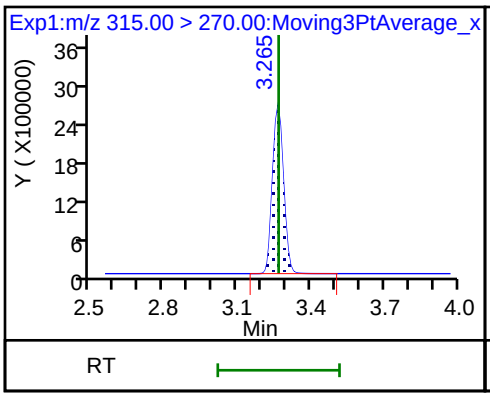
D 7 M2-4:2 FTS



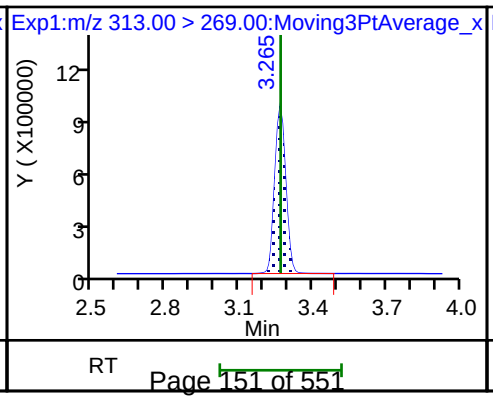
8 1H,1H,2H,2H-perfluorohexanesulfo



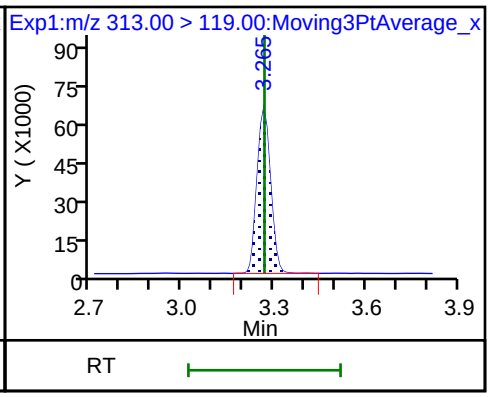
D 11 13C2 PFHxA



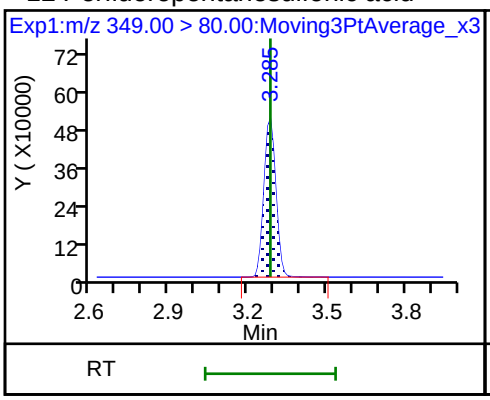
10 Perfluorohexanoic acid



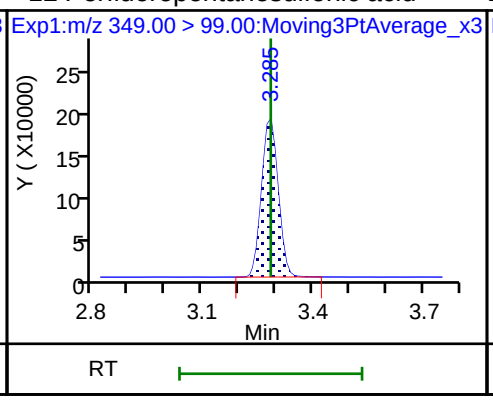
10 Perfluorohexanoic acid



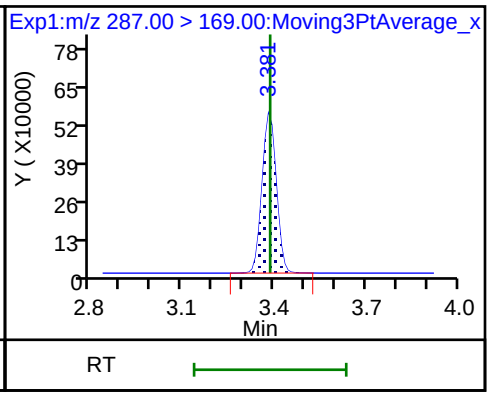
12 Perfluoropentanesulfonic acid



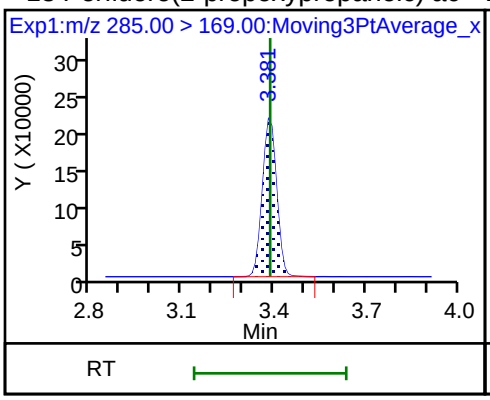
12 Perfluoropentanesulfonic acid



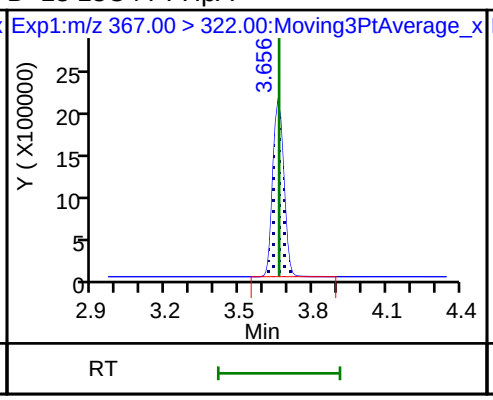
D 14 13C3 HFPO-DA



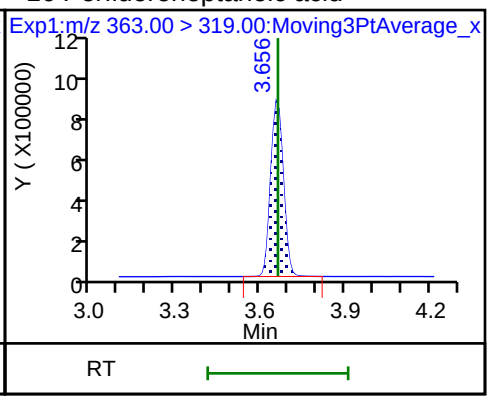
13 Perfluoro(2-propoxypropanoic) ac



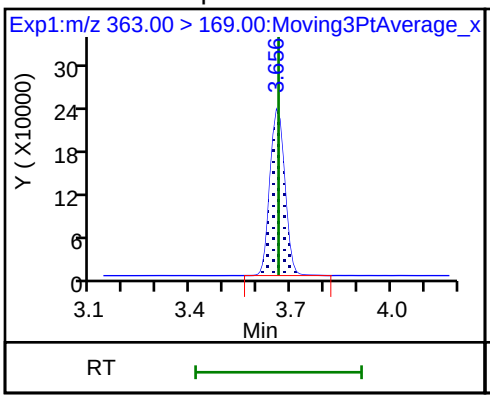
D 18 13C4 PFHpA



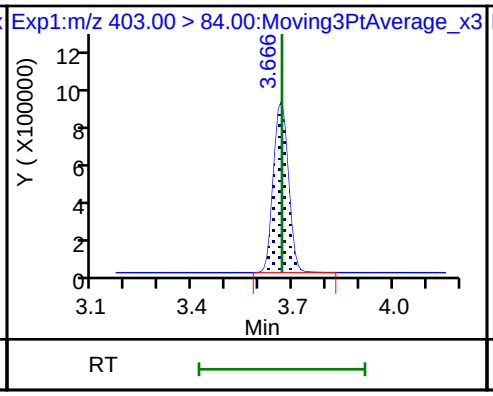
16 Perfluoroheptanoic acid



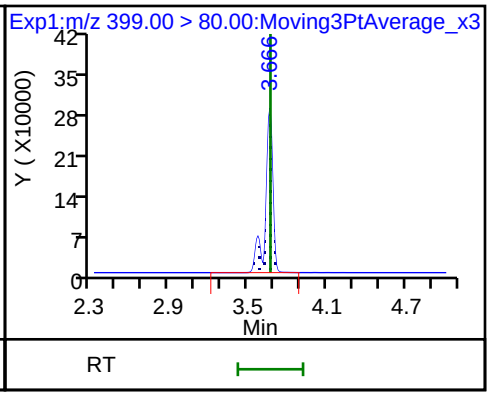
16 Perfluoroheptanoic acid



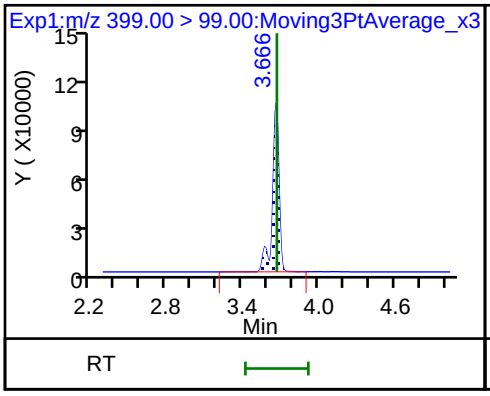
D 17 18O2 PFHxS



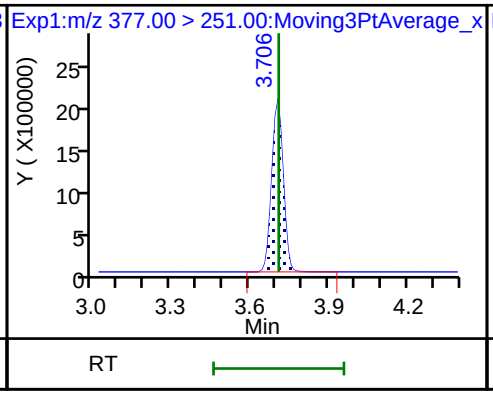
15 Perfluorohexanesulfonic acid



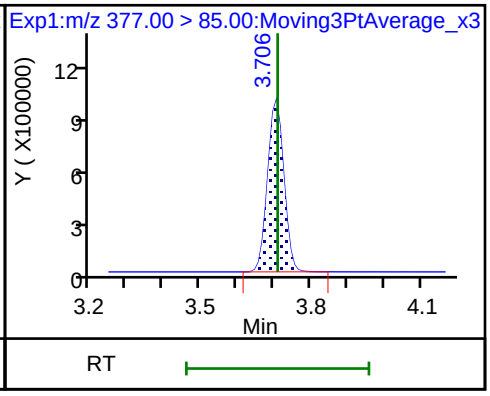
15 Perfluorohexanesulfonic acid



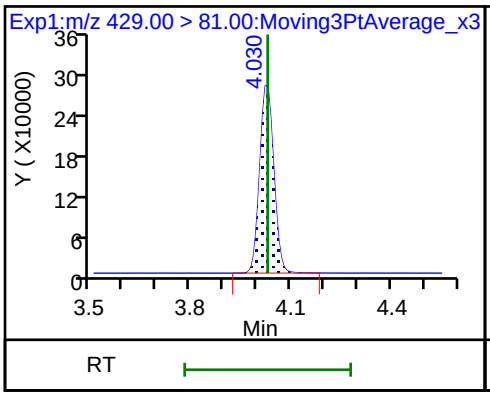
19 DONA



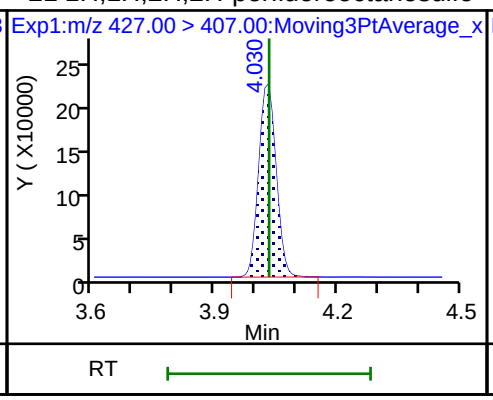
19 DONA



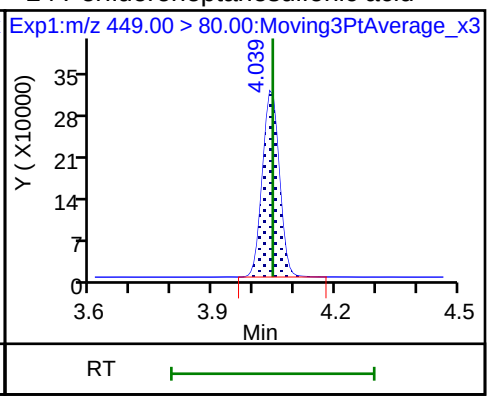
D 20 M2-6:2 FTS



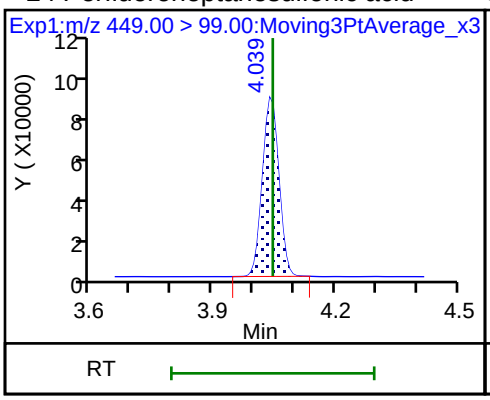
21 1H,1H,2H,2H-perfluorooctanesulfo



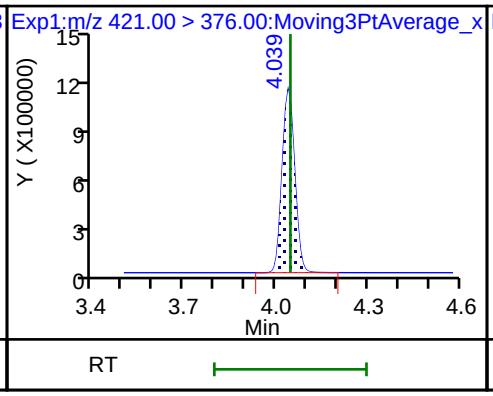
24 Perfluoroheptanesulfonic acid



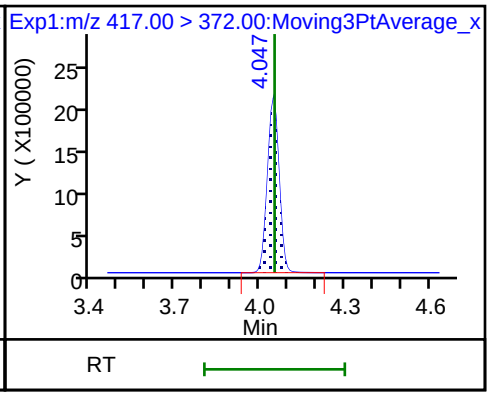
24 Perfluoroheptanesulfonic acid



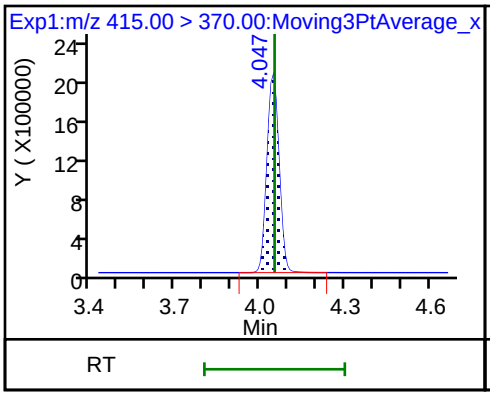
$ 26 13C8 PFOA



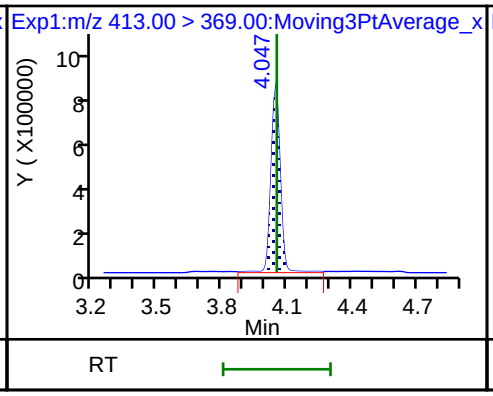
D 25 13C4 PFOA



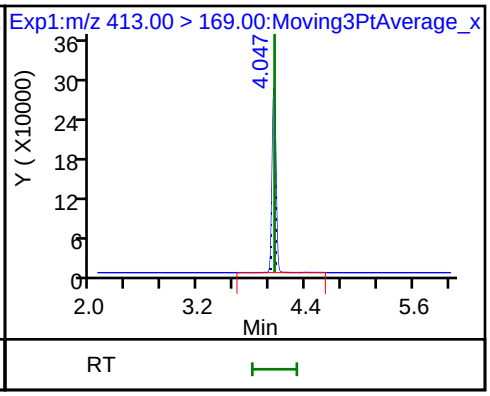
* 23 13C2 PFOA



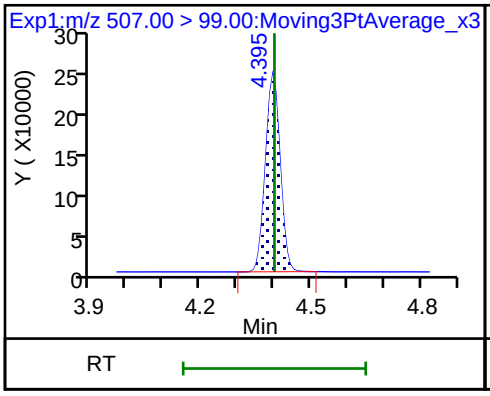
22 Perfluorooctanoic acid



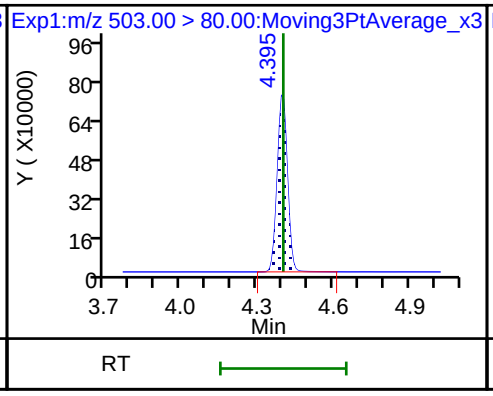
22 Perfluorooctanoic acid



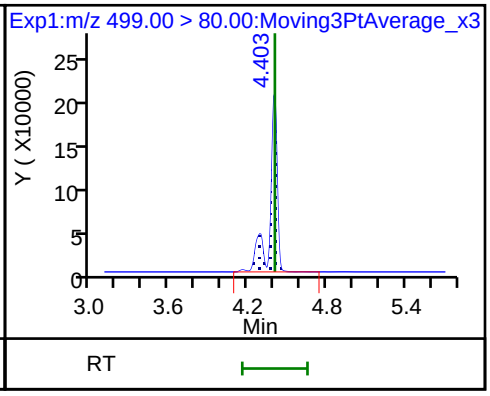
$ 28 13C8 PFOS



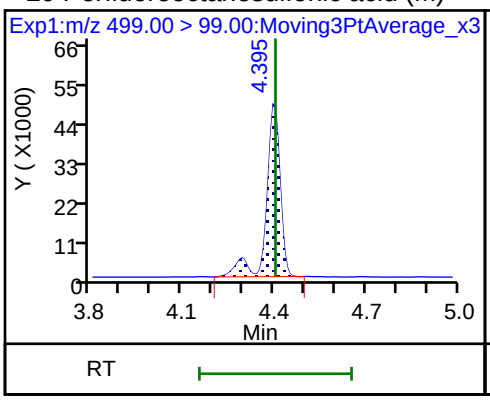
D 27 13C4 PFOS



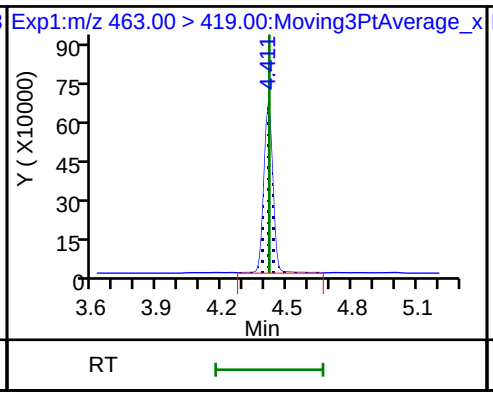
29 Perfluorooctanesulfonic acid



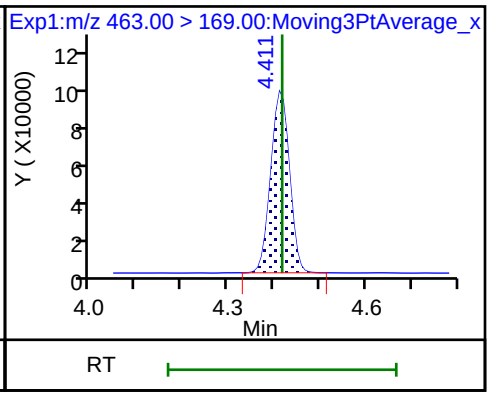
29 Perfluorooctanesulfonic acid (M)



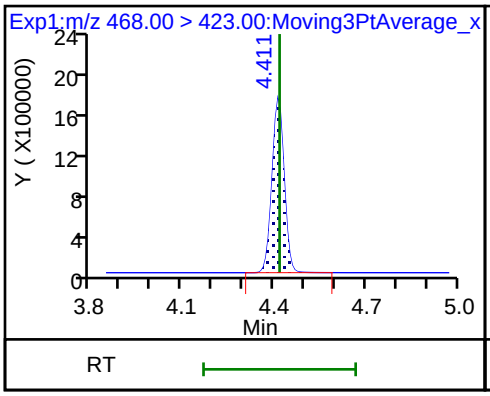
31 Perfluorononanoic acid



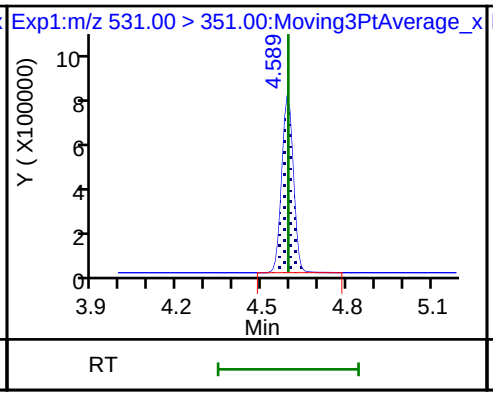
31 Perfluorononanoic acid



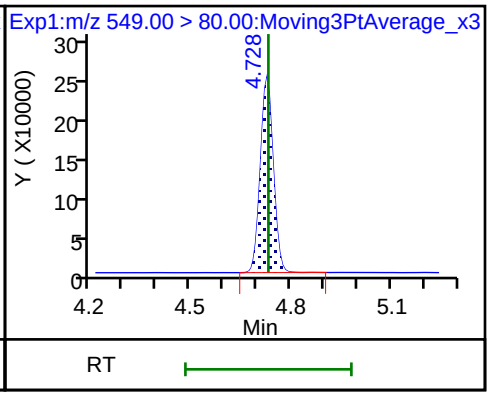
D 30 13C5 PFNA



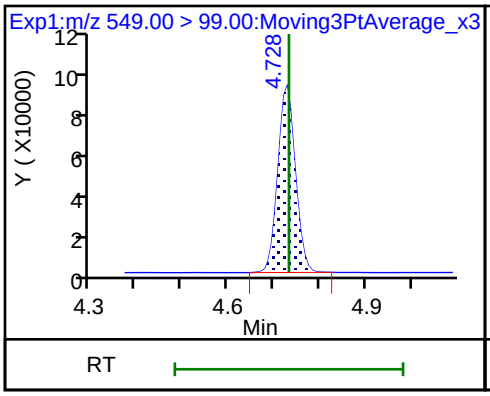
32 9-Chlorohexadecafluoro-3-oxanona



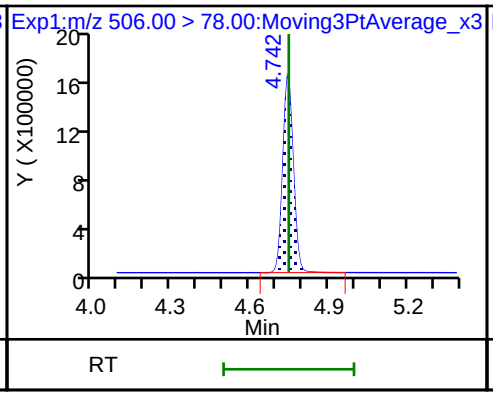
35 Perfluorononanesulfonic acid



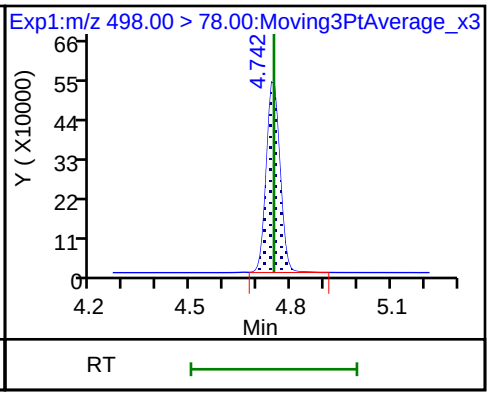
35 Perfluorononanesulfonic acid



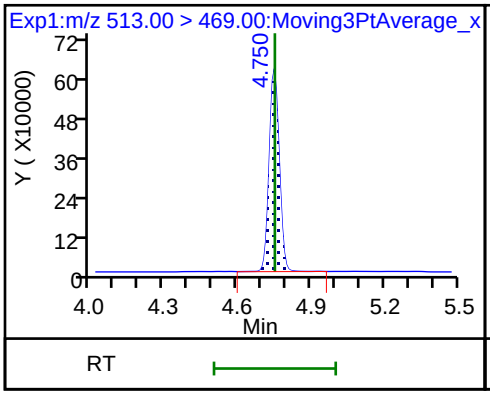
D 33 13C8 FOSA



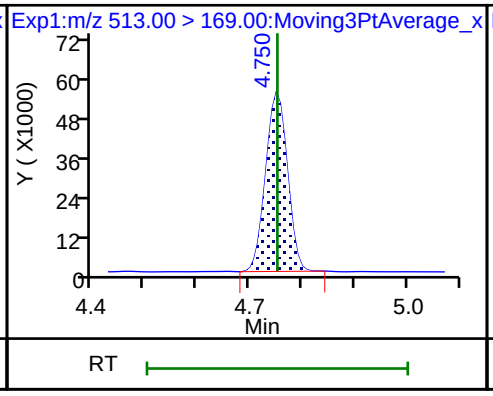
34 Perfluorooctanesulfonamide



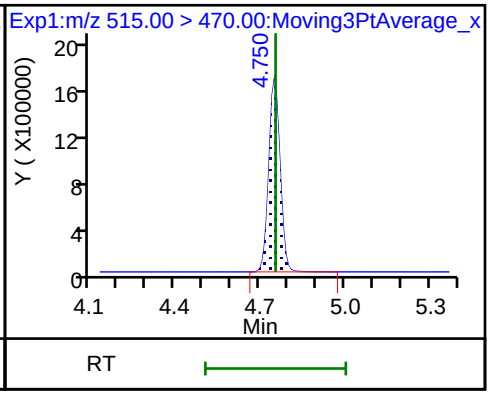
37 Perfluorodecanoic acid



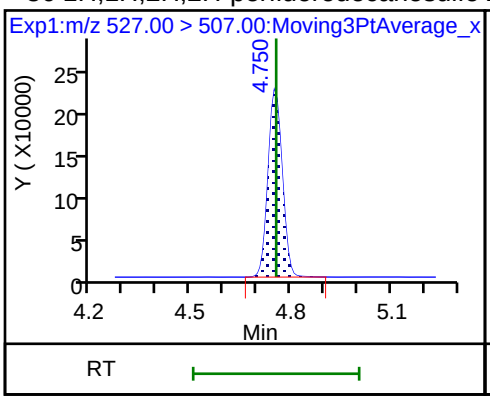
37 Perfluorodecanoic acid



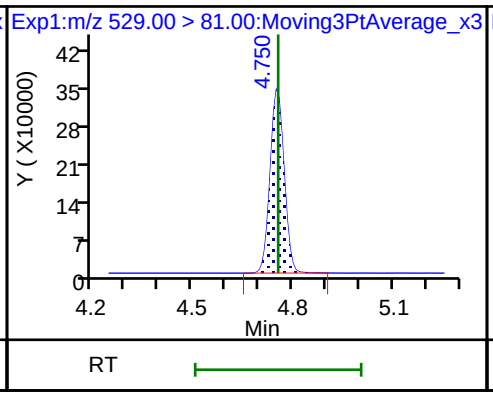
D 39 13C2 PFDA



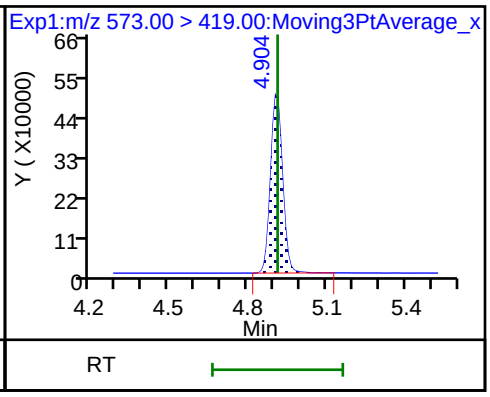
36 1H,1H,2H,2H-perfluorodecanesulfo



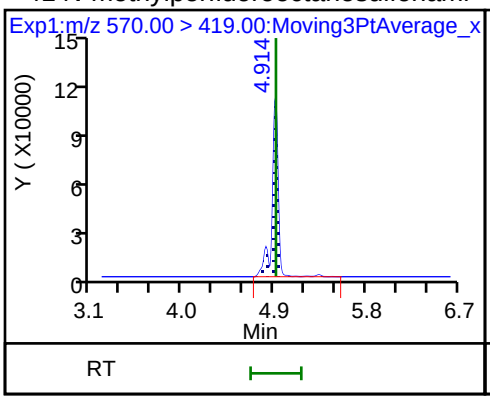
D 38 M2-8:2 FTS



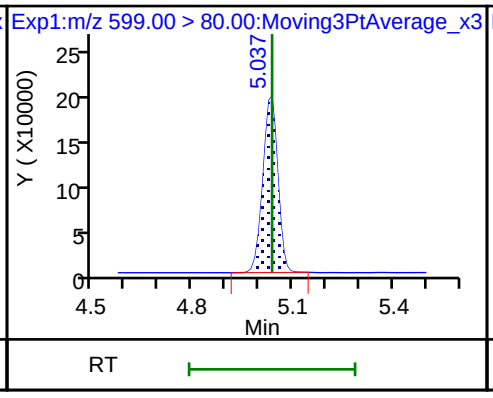
D 40 d3-NMeFOSAA



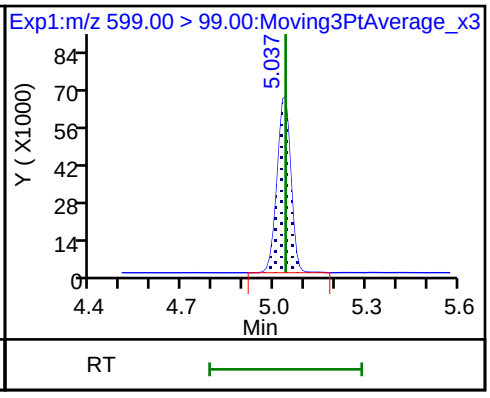
41 N-methylperfluorooctanesulfonami



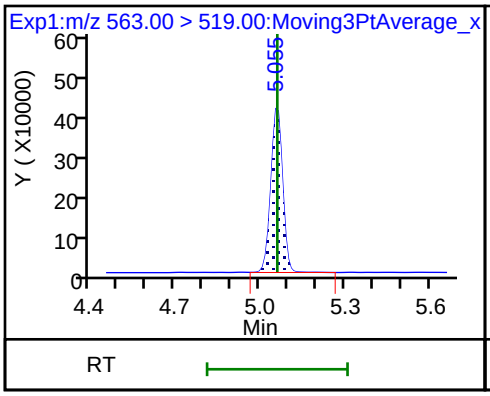
42 Perfluorodecanesulfonic acid



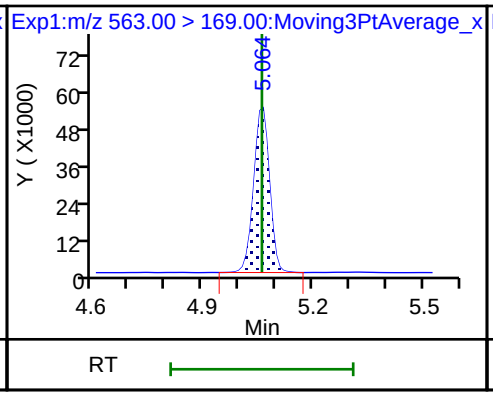
42 Perfluorodecanesulfonic acid



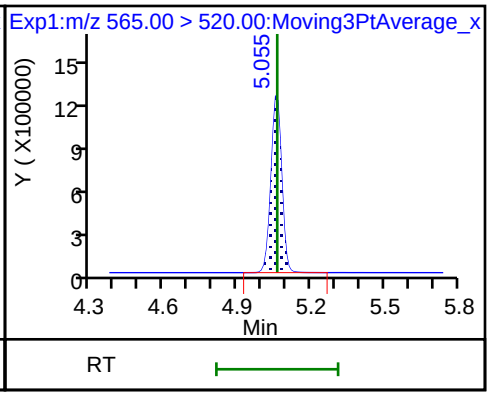
45 Perfluoroundecanoic acid



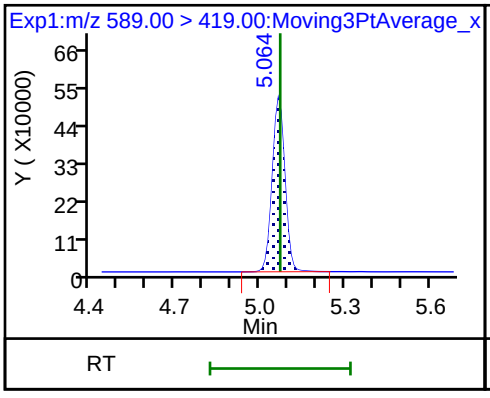
45 Perfluoroundecanoic acid



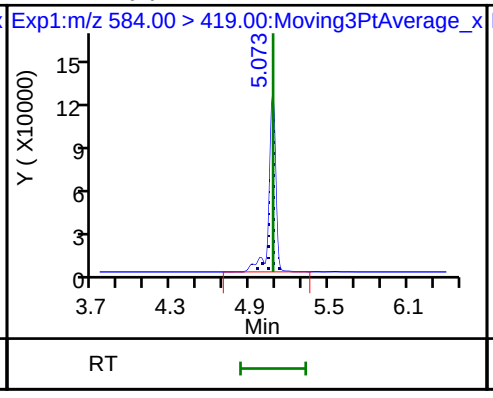
D 43 13C2 PFUnA



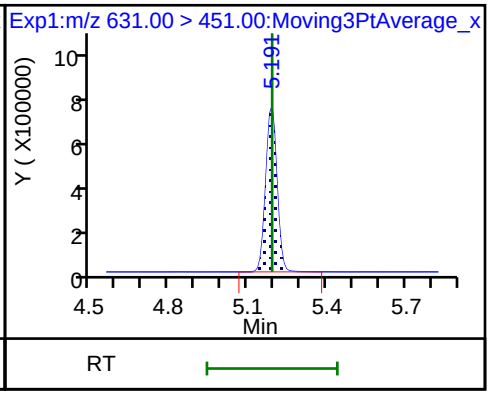
D 44 d5-NEtFOSAA



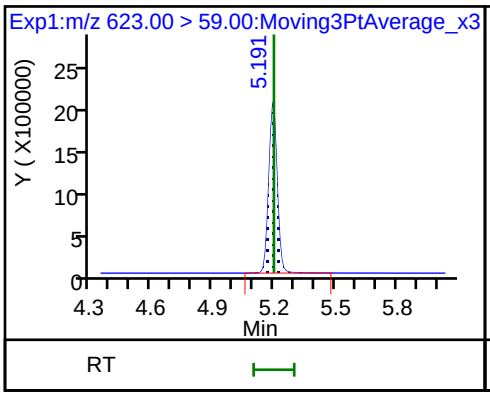
46 N-ethylperfluorooctanesulfonamid



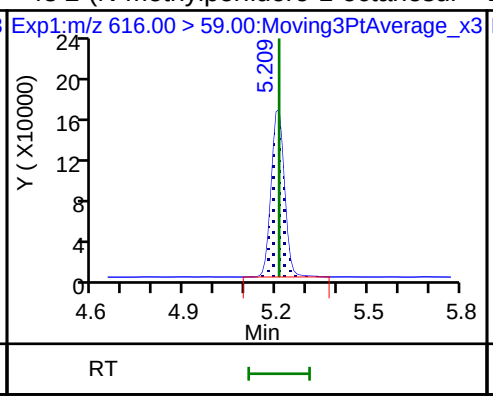
51 11-Chloroeicosafluoro-3-oxaundec



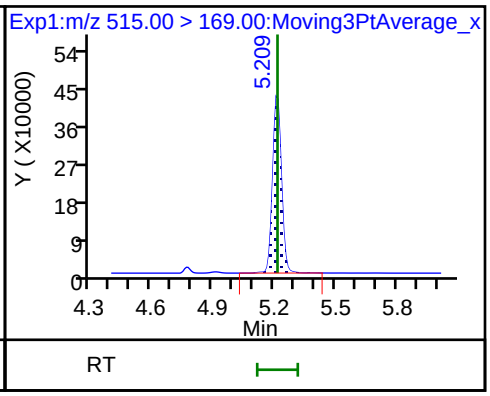
D 47 d7-N-MeFOSE-M



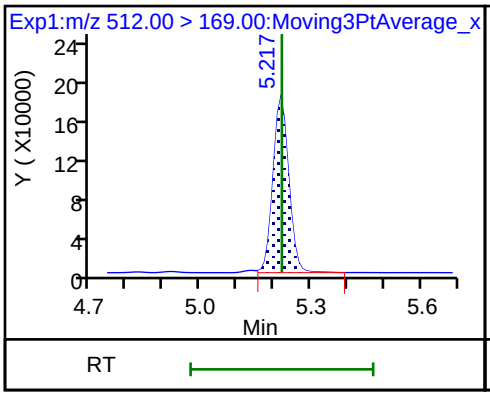
48 2-(N-methylperfluoro-1-octanesul



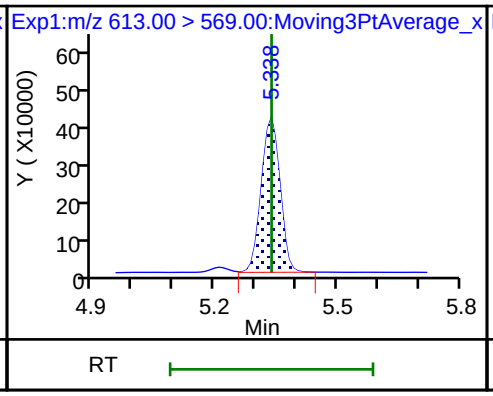
D 49 d-N-MeFOSA-M



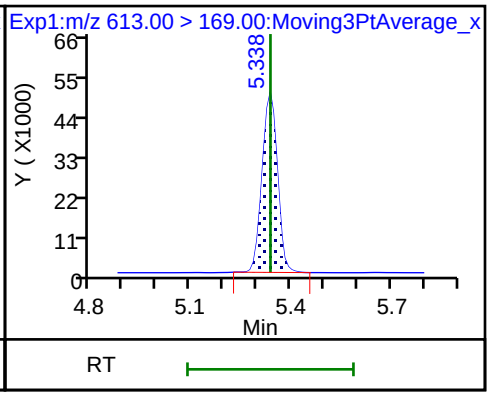
50 NMeFOSA



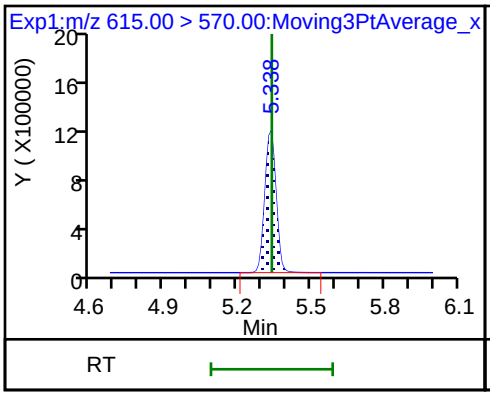
57 Perfluorododecanoic acid



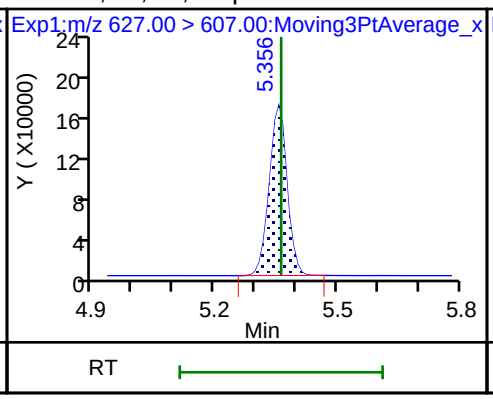
57 Perfluorododecanoic acid



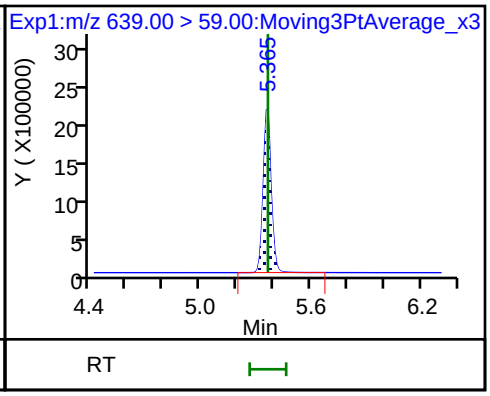
D 56 13C2 PFDoA



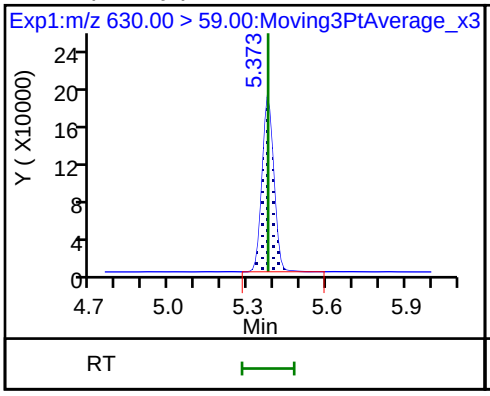
58 1H,1H,2H,2H-perfluorododecanesul



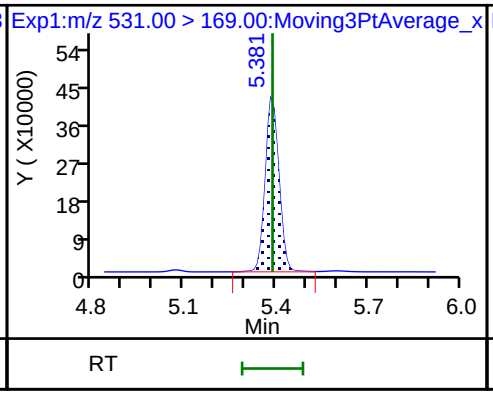
D 52 d9-N-EtFOSE-M



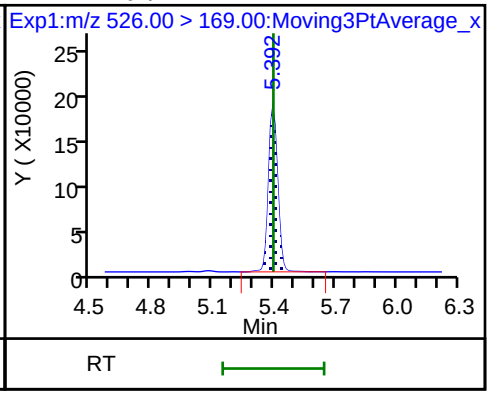
53 2-(N-ethylperfluoro-1-octanesulf



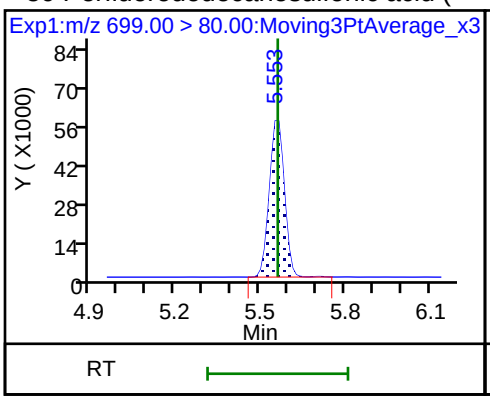
D 54 d-N-EtFOSA-M



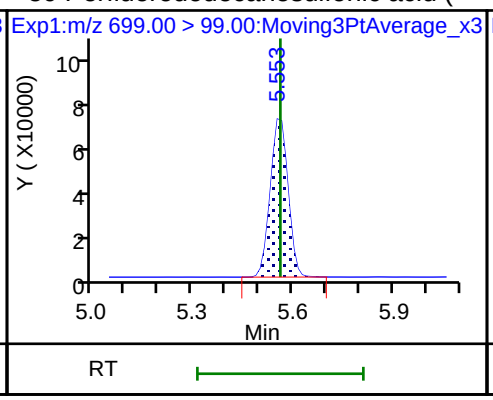
55 N-ethylperfluoro-1-octanesulfona



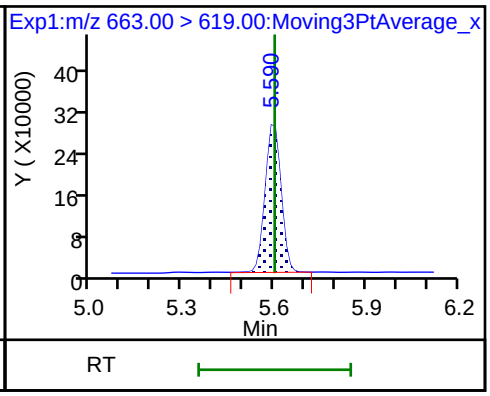
59 Perfluorododecanesulfonic acid (



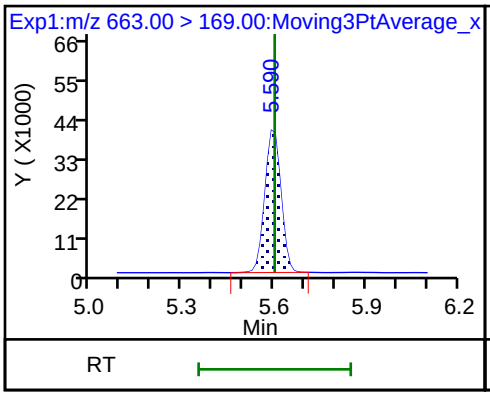
59 Perfluorododecanesulfonic acid (



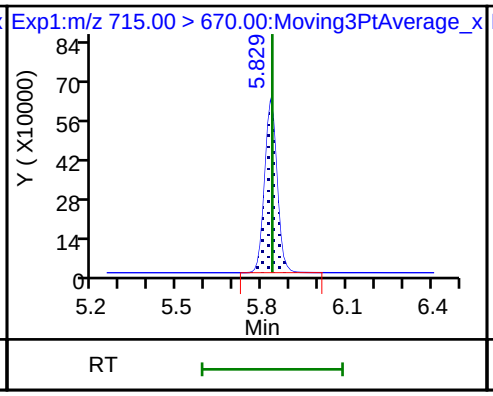
60 Perfluorotridecanoic acid



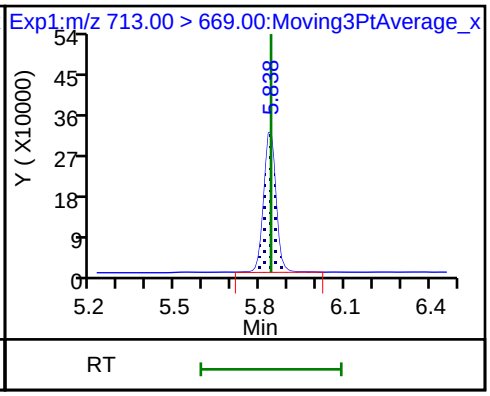
60 Perfluorotridecanoic acid



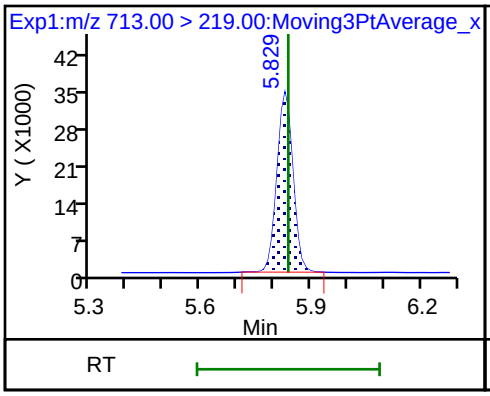
D 61 13C2 PFTeDA



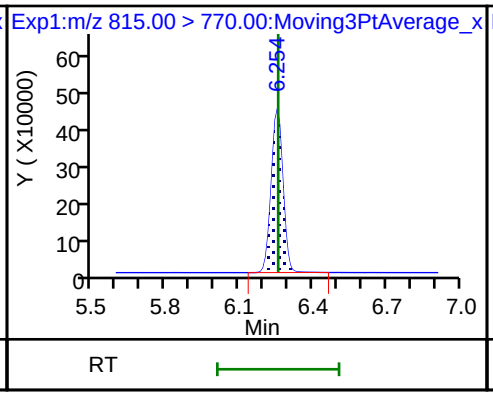
62 Perfluorotetradecanoic acid



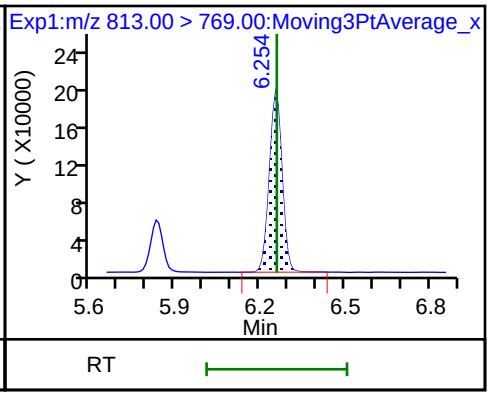
62 Perfluorotetradecanoic acid



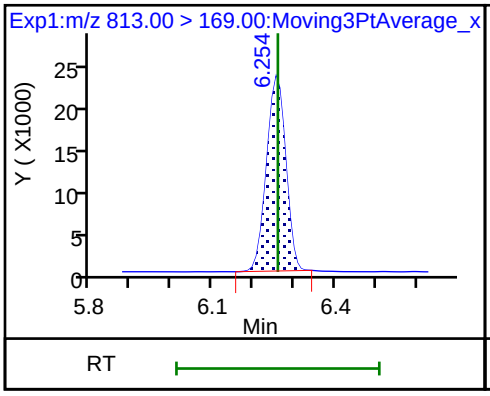
D 64 13C2 PFHxDA



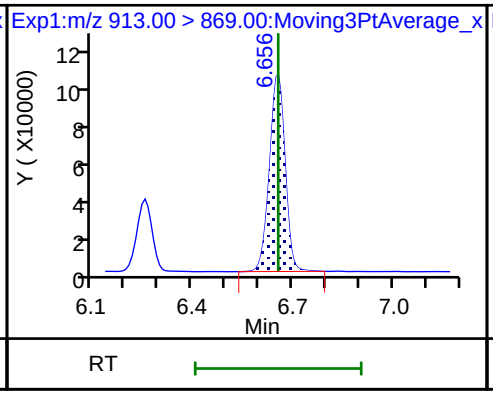
63 Perfluorohexadecanoic acid



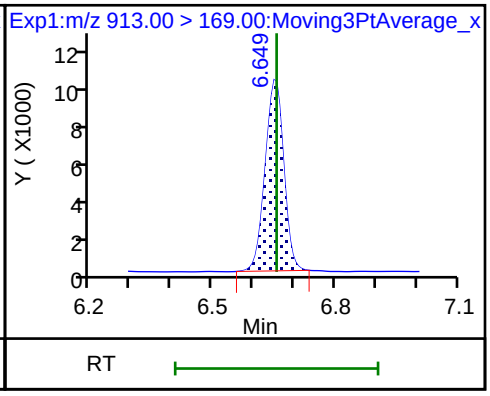
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

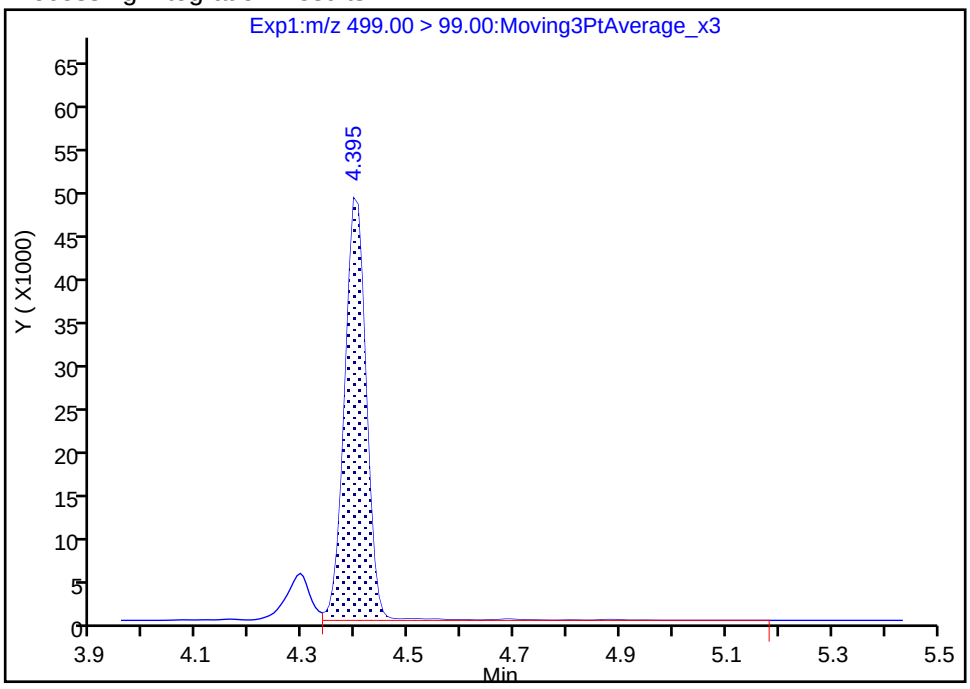
Data File:	\\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_007.d				
Injection Date:	04-Jun-2020 12:24:14	Instrument ID:	A15		
Lims ID:	IC L4 Full				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	4	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

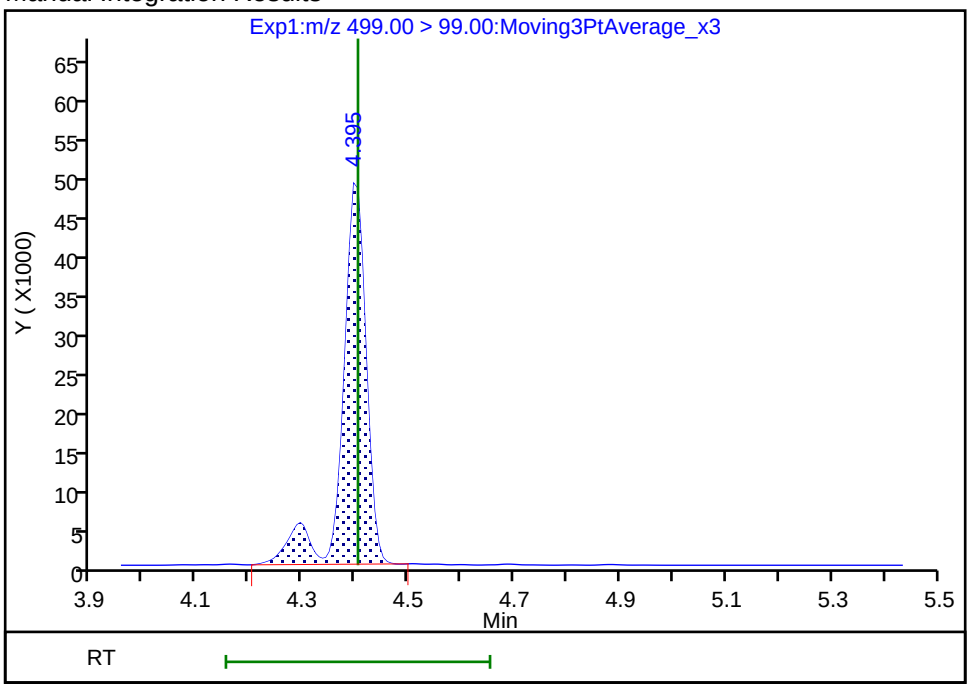
Processing Integration Results

RT: 4.40
Area: 138132
Amount: 0.902345
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 151424
Amount: 0.902345
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:36:58
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_008.d
Lims ID: IC L5 Full
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 04-Jun-2020 12:33:23 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 5 (27)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:41 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:39:35
Ratio Calibration: Average of Initial Calibration

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	2.554	2.549	0.005	0.630	9027703	2.43		97.4	17372	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.563	2.551	0.012	1.003	8607524	2.57		103	2294	
D 4 13C5 PFPeA										
267.90 > 223.00	2.896	2.895	0.001	0.715	8137666	2.46		98.2	16235	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.906	2.898	0.008	1.004	7792020	2.38		95.0	598	
D 9 13C3 PFBS										
301.90 > 80.00	2.938	2.930	0.008	0.725	5198591	2.26		97.3	17059	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.938	2.930	0.008	1.000	4878139	2.24	Target=2.14	101	2213	
298.90 > 99.00	2.938	2.930	0.008	1.000	2361241		2.07(1.07-3.21)	101	1537	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.233	3.226	0.007	0.798	669176	2.19		93.8	1399	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.233	3.227	0.006	1.000	1563862	2.42		104	11400	
D 11 13C2 PFHxA										
315.00 > 270.00	3.272	3.267	0.005	0.808	7954661	2.47		98.8	14433	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.272	3.267	0.005	1.000	7282094	2.44	Target=15.73	97.6	3342	
313.00 > 119.00	3.272	3.267	0.005	1.000	475398		15.32(7.86-23.59)	97.6	1231	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.293	3.285	0.008	1.121	4032245	2.46	Target=2.69	105	11375	
349.00 > 99.00	3.293	3.285	0.008	1.121	1492623		2.70(1.35-4.04)	105	5027	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.389	3.386	0.003	0.836	1799762	2.44		97.7	14373	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.389	3.386	0.003	1.000	1748448	2.66		106	8610	
D 18 13C4 PFHpA										
367.00 > 322.00	3.664	3.661	0.003	0.904	6188566	2.42		96.9	18224	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.673	3.662	0.011	1.003	6482928	2.59	Target=3.80	104	2295	
363.00 > 169.00	3.664	3.662	0.002	1.000	1672884		3.88(1.90-5.71)	104	5133	
D 17 18O2 PFHxS										
403.00 > 84.00	3.673	3.667	0.006	0.907	2541523	2.30		97.3	11106	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.673	3.670	0.003	1.000	2657927	2.20	Target=2.99	96.8	6725	
399.00 > 99.00	3.673	3.670	0.003	1.000	909567		2.92(1.50-4.49)	96.8	2608	
19 DONA										
377.00 > 251.00	3.713	3.709	0.004	0.842	14689211	2.34	Target=2.14	99.6	16893	
377.00 > 85.00	3.713	3.709	0.004	0.842	6997251		2.10(1.07-3.21)	99.6	11588	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.036	4.030	0.006	0.996	772132	2.29		96.3	4521	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.036	4.032	0.004	1.000	1514283	2.37		100.0	6862	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.052	4.046	0.006	0.919	2255726	2.42	Target=3.77	102	5801	
449.00 > 99.00	4.052	4.046	0.006	0.919	620389		3.64(1.89-5.66)	102	3631	
$ 26 13C8 PFOA										
421.00 > 376.00	4.052	4.046	0.006	1.000	3405935	2.40		98.2	15024	
D 25 13C4 PFOA										
417.00 > 372.00	4.052	4.051	0.001	1.000	5761918	2.50		99.8	12127	
* 23 13C2 PFOA										
415.00 > 370.00	4.052	4.051	0.001		5857514	2.50			13586	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.052	4.052	0.0	1.000	6031818	2.48	Target=2.88	99.1	470	
413.00 > 169.00	4.052	4.052	0.0	1.000	2033674		2.97(1.44-4.31)	99.1	20463	
$ 28 13C8 PFOS										
507.00 > 99.00	4.400	4.400	0.0	1.086	702645	2.41		101	5286	
D 27 13C4 PFOS										
503.00 > 80.00	4.407	4.402	0.005	1.088	2042488	2.38		99.7	5920	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.407	4.403	0.004	1.000	1971399	2.33	Target=4.89	100	4206	
499.00 > 99.00	4.400	4.403	-0.003	0.998	392900		5.02(2.44-7.33)	100	1646	M
31 Perfluorononanoic acid										
463.00 > 419.00	4.415	4.417	-0.002	1.000	4370924	2.57	Target=7.00	103	769	
463.00 > 169.00	4.415	4.417	-0.002	1.000	618982		7.06(3.50-10.51)	103	2636	
D 30 13C5 PFNA										
468.00 > 423.00	4.415	4.417	-0.002	1.090	4184898	2.37		94.7	8603	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.593	4.592	0.001	1.042	5630815	2.41		104	11968	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.731	4.732	-0.001	1.073	1700810	2.49	Target=2.77	104	4110	
549.00 > 99.00	4.731	4.732	-0.001	1.073	596969		2.85(1.38-4.15)	104	3234	
D 33 13C8 FOSA										
506.00 > 78.00	4.745	4.747	-0.002	1.171	4164895	2.44		97.7	5952	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.745	4.749	-0.004	1.000	3700238	2.53		101	3387	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.753	4.752	0.001	1.000	3945087	2.24	Target=10.36	89.5	1170	
513.00 > 169.00	4.753	4.752	0.001	1.000	406537		9.70(5.18-15.54)	89.5	238	
D 39 13C2 PFDA										
515.00 > 470.00	4.753	4.754	-0.001	1.173	4562785	2.71		108	16011	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.753	4.755	-0.002	1.000	1536987	2.59		108	6735	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.753	4.755	-0.002	1.173	871076	2.17		90.4	3394	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.908	4.912	-0.004	1.211	1524709	2.42		97.0	2344	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.917	4.915	0.002	1.002	1131231	2.54		102	19387	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.038	5.037	0.001	1.143	1487380	2.48	Target=2.97	103	5266	
599.00 > 99.00	5.038	5.037	0.001	1.143	514272		2.89(1.49-4.46)	103	3516	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.057	5.060	-0.003	1.000	2558072	2.55	Target=7.56	102	1435	
563.00 > 169.00	5.057	5.060	-0.003	1.000	349576		7.32(3.78-11.34)	102	1968	
D 43 13C2 PFUnA										
565.00 > 520.00	5.057	5.062	-0.005	1.248	3474271	2.42		96.7	6160	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.066	5.071	-0.005	1.250	1578577	2.47		98.6	1722	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.075	5.075	0.0	1.002	1060515	2.38		95.1	16789	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.193	5.191	0.002	1.178	5308994	2.41		102	9078	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.193	5.198	-0.005	1.281	5476298	12.7		102	3494	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.210	5.209	0.001	1.003	1002590	2.19		87.5	1672	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.210	5.215	-0.005	1.286	1307025	2.43		97.0	190	
50 NMeFOSA										
512.00 > 169.00	5.219	5.220	-0.001	1.002	1369719	2.78		111	617	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.340	5.338	0.002	1.000	3222984	2.86	Target=7.18	114	548	
613.00 > 169.00	5.340	5.338	0.002	1.000	442181		7.29(3.59-10.76)	114	3959	
D 56 13C2 PFDoA										
615.00 > 570.00	5.340	5.339	0.001	1.318	2873956	2.26		90.3	7533	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.358	5.362	-0.004	1.127	1225099	2.62		109	4504	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.358	5.364	-0.006	1.322	6375503	12.1		96.9	4889	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.375	5.376	-0.001	1.003	1311216	2.51		100	2007	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.383	5.387	-0.004	1.328	1342737	2.46		98.2	388	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.394	5.395	-0.001	1.002	1494414	2.78		111	662	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.555	5.562	-0.007	1.260	540600	2.60	Target=0.79	107	4125	
699.00 > 99.00	5.555	5.562	-0.007	1.260	651860		0.83(0.39-1.18)	107	4518	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.605	5.601	0.004	1.050	2454288	2.71	Target=6.63	108	391	
663.00 > 169.00	5.592	5.601	-0.009	1.047	350263		7.01(3.32-9.95)	108	2185	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.830	5.835	-0.005	1.439	2021036	2.43		97.2	5579	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.839	5.838	0.001	1.002	2018998	2.50	Target=8.46	99.9	581	
713.00 > 219.00	5.830	5.838	-0.008	1.000	202772		9.96(4.23-12.69)	99.9	2127	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.254	6.257	-0.003	1.543	1946691	2.82		113	6654	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.254	6.258	-0.004	1.000	1524467	2.28	Target=7.92	91.0	209	
813.00 > 169.00	6.254	6.258	-0.004	1.000	184774		8.25(3.96-11.88)	91.0	2184	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.649	6.655	-0.006	1.063	859961	2.24	Target=10.24	89.8	167	
913.00 > 169.00	6.649	6.655	-0.006	1.063	86590		9.93(5.12-15.36)	89.8	1225	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00027 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:42 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_008.d

Injection Date: 04-Jun-2020 12:33:23 Instrument ID: A15

Lims ID: IC L5 Full

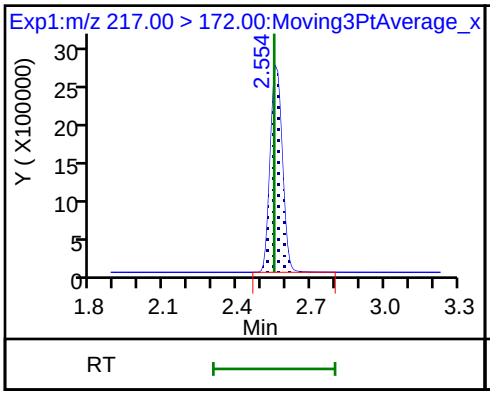
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 5 Worklist Smp#: 6

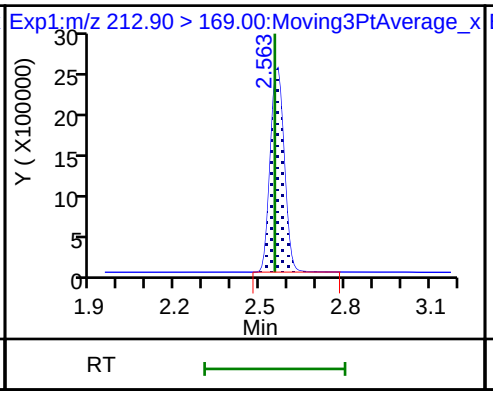
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

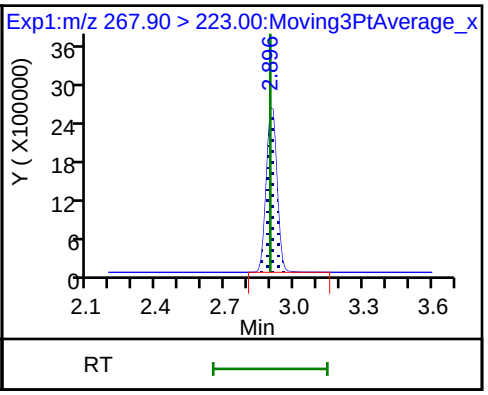
D 1 13C4 PFBA



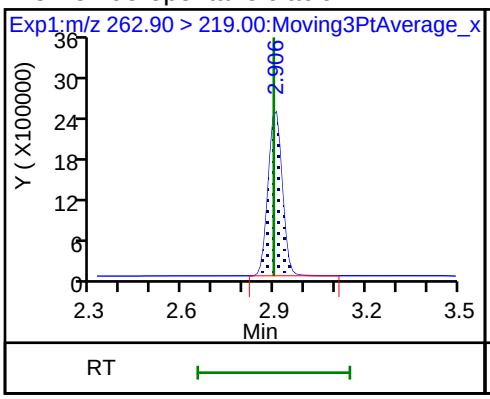
2 Perfluorobutanoic acid



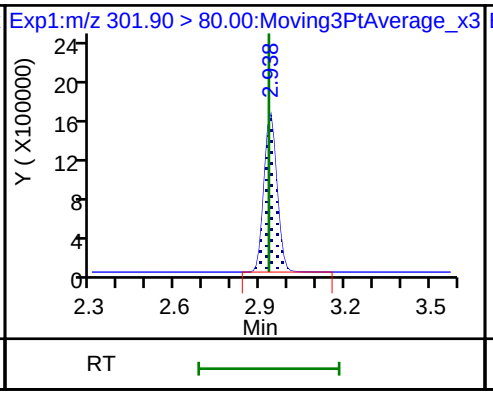
D 4 13C5 PFPeA



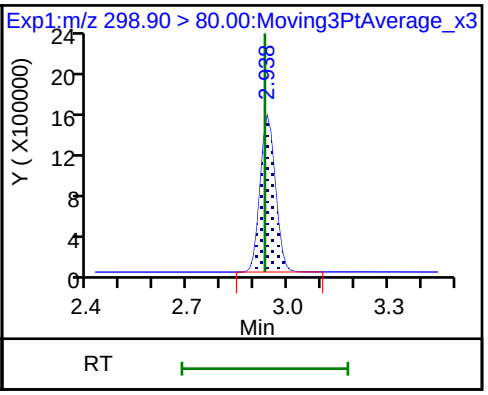
5 Perfluoropentanoic acid



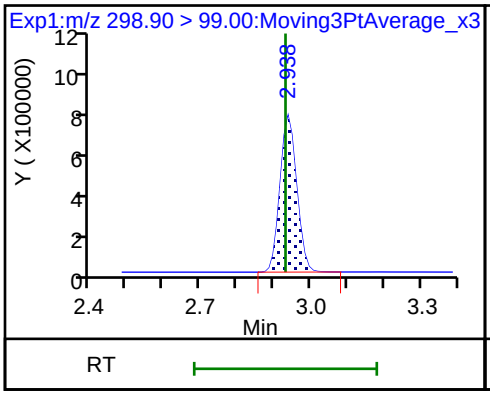
D 9 13C3 PFBS



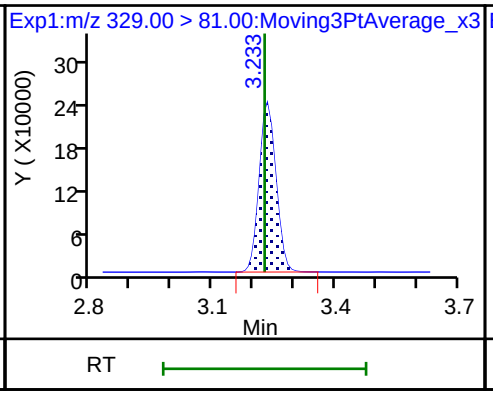
6 Perfluorobutanesulfonic acid



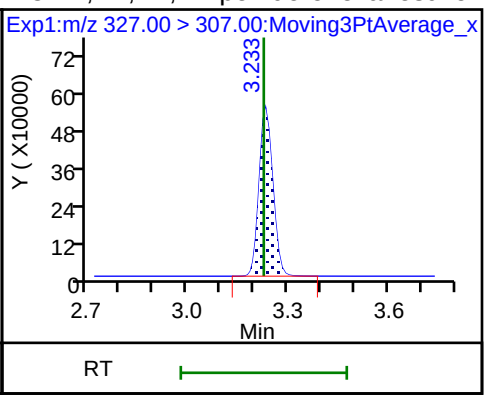
6 Perfluorobutanesulfonic acid



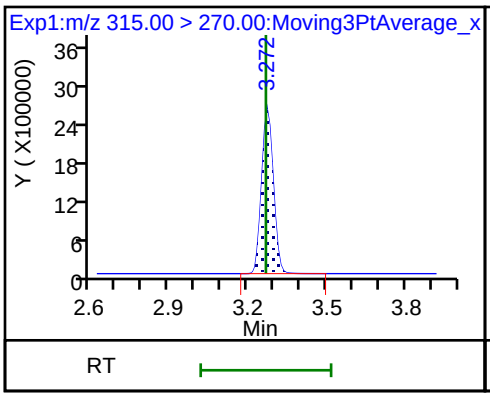
D 7 M2-4:2 FTS



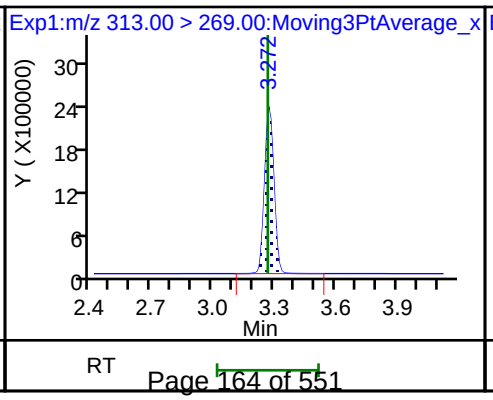
8 1H,1H,2H,2H-perfluorohexanesulfo



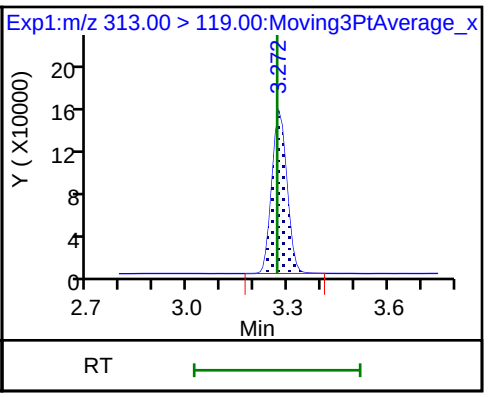
D 11 13C2 PFHxA



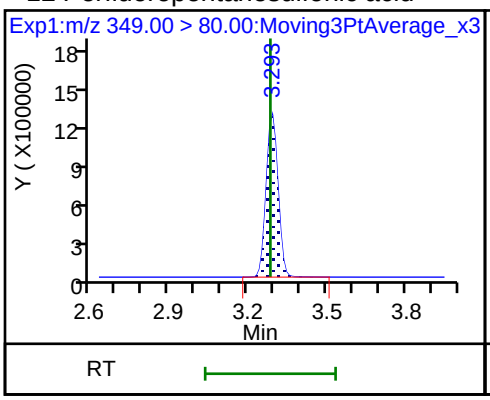
10 Perfluorohexanoic acid



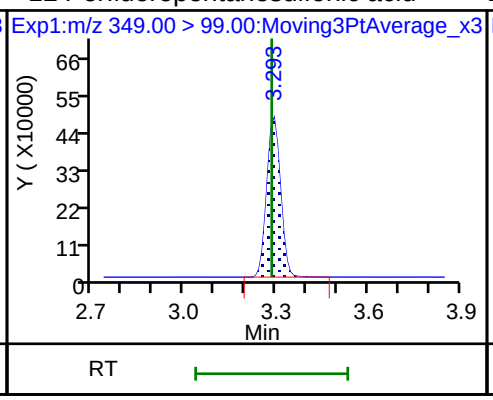
10 Perfluorohexanoic acid



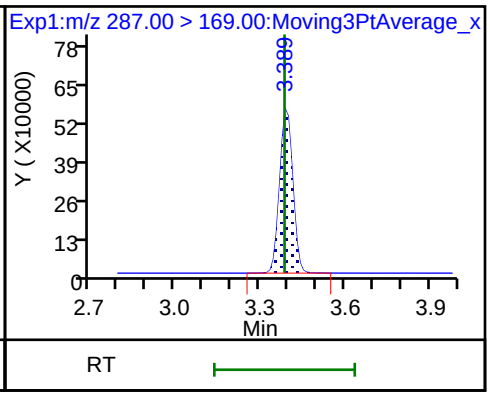
12 Perfluoropentanesulfonic acid



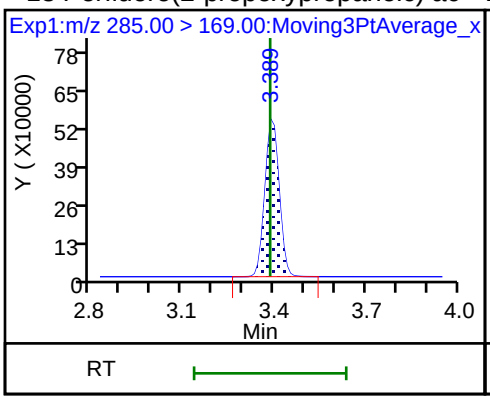
12 Perfluoropentanesulfonic acid



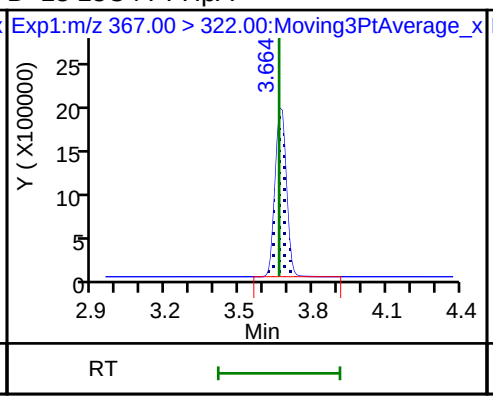
D 14 13C3 HFPO-DA



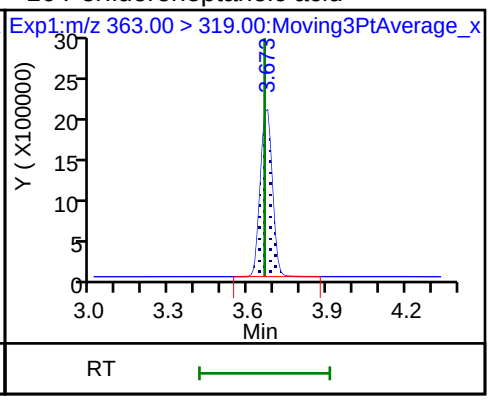
13 Perfluoro(2-propoxypropanoic) ac



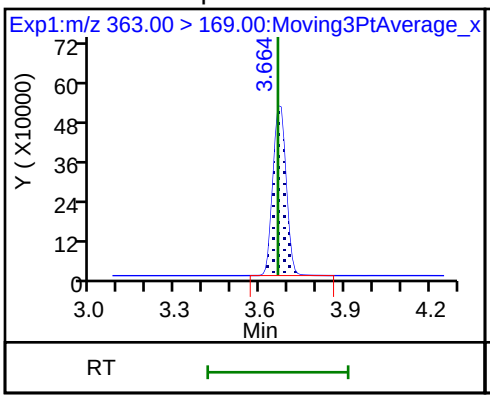
D 18 13C4 PFHpA



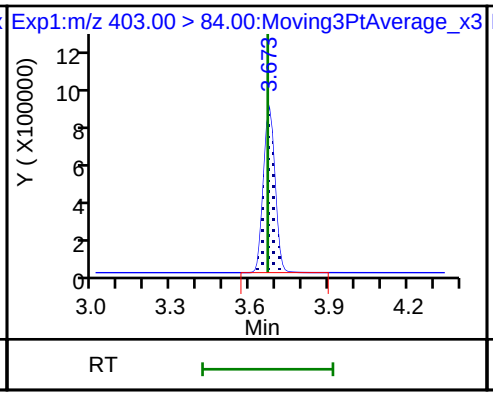
16 Perfluoroheptanoic acid



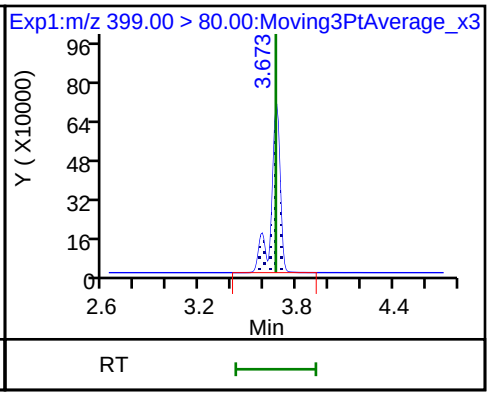
16 Perfluoroheptanoic acid



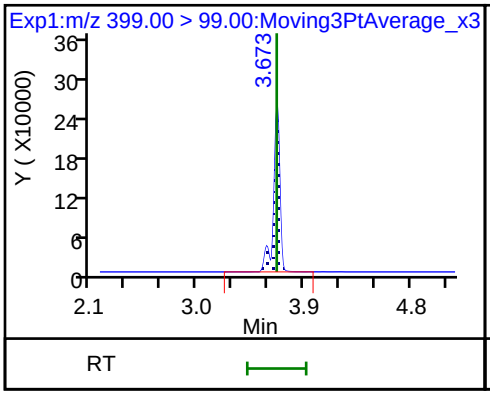
D 17 18O2 PFHxS



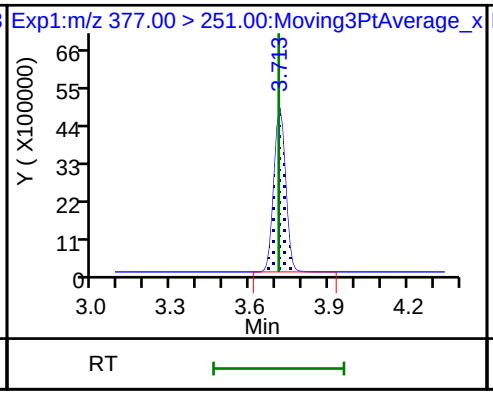
15 Perfluorohexanesulfonic acid



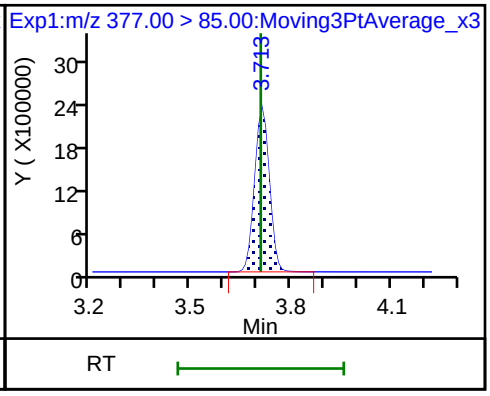
15 Perfluorohexanesulfonic acid



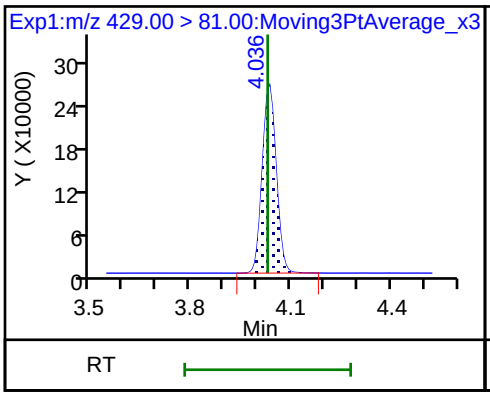
19 DONA



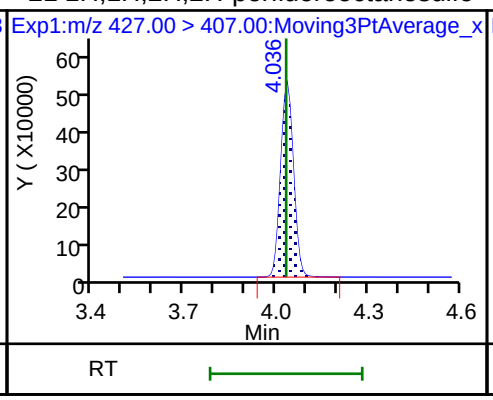
19 DONA



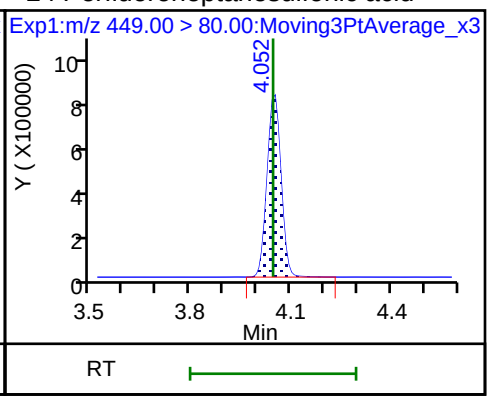
D 20 M2-6:2 FTS



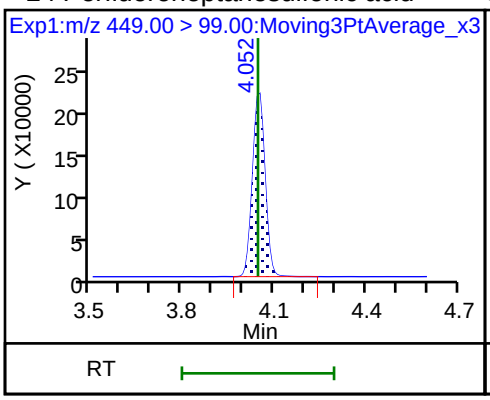
21 1H,1H,2H,2H-perfluorooctanesulfo



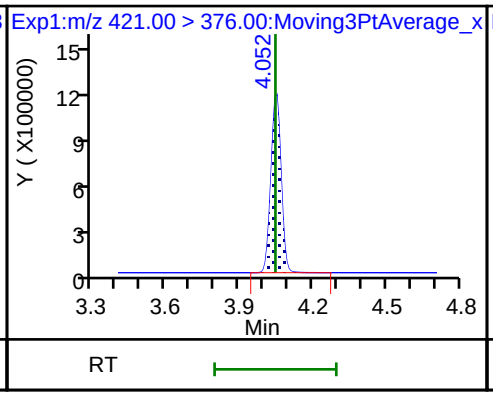
24 Perfluoroheptanesulfonic acid



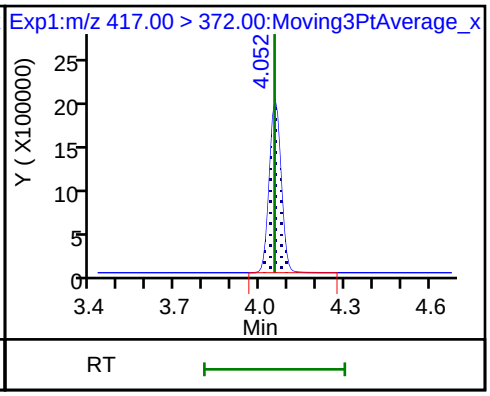
24 Perfluoroheptanesulfonic acid



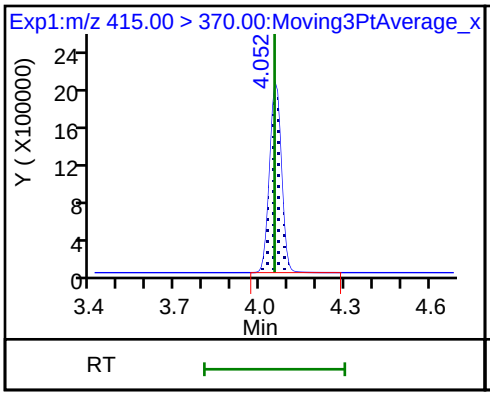
$ 26 13C8 PFOA



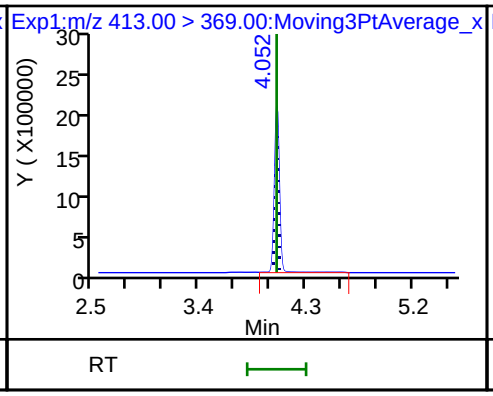
D 25 13C4 PFOA



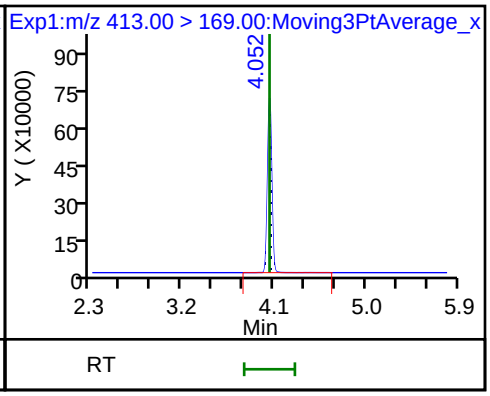
* 23 13C2 PFOA



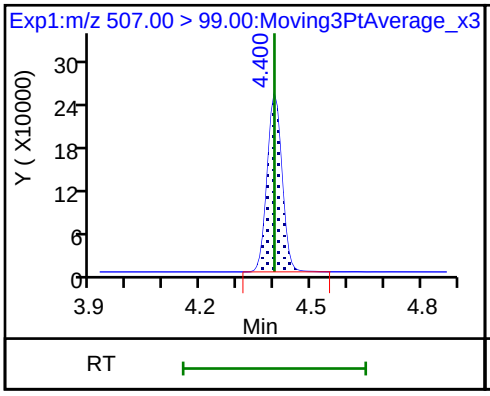
22 Perfluorooctanoic acid



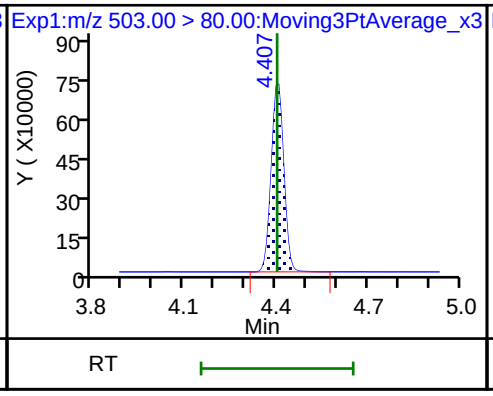
22 Perfluorooctanoic acid



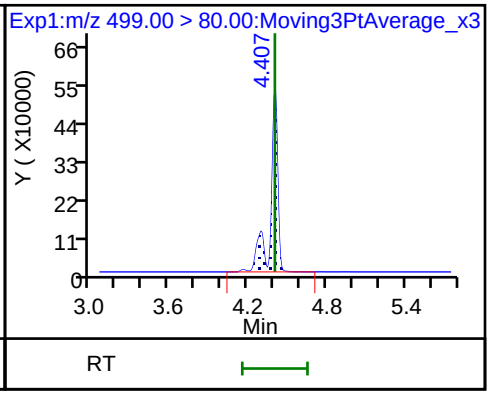
$ 28 13C8 PFOS



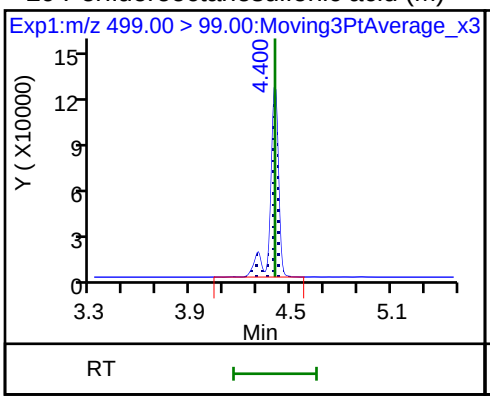
D 27 13C4 PFOS



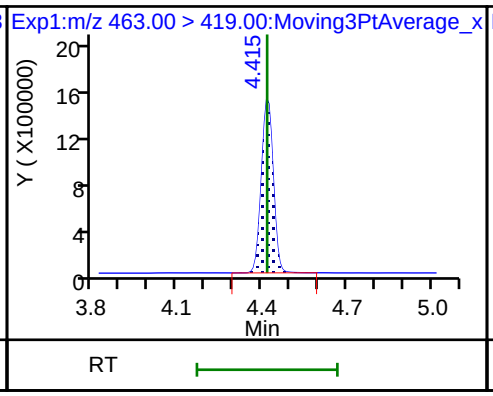
29 Perfluorooctanesulfonic acid



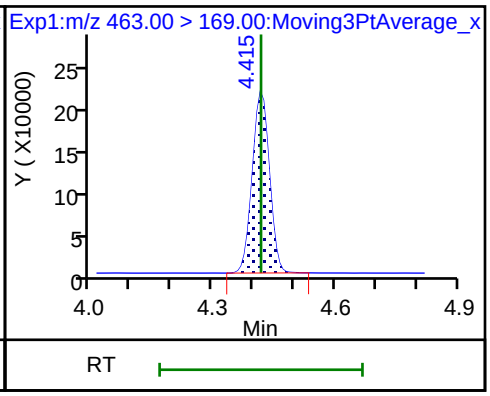
29 Perfluorooctanesulfonic acid (M)



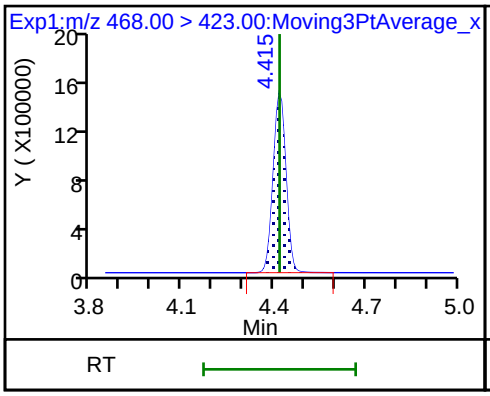
31 Perfluorononanoic acid



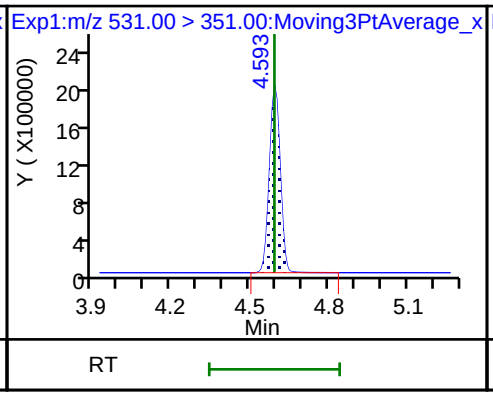
31 Perfluorononanoic acid



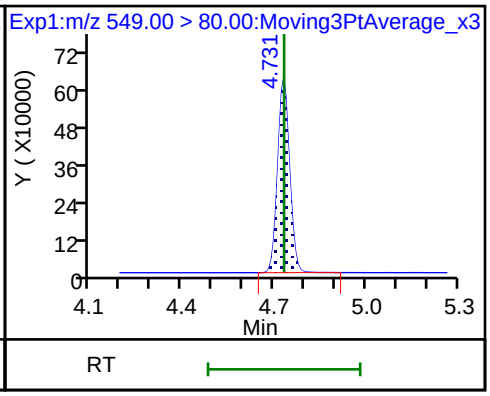
D 30 13C5 PFNA



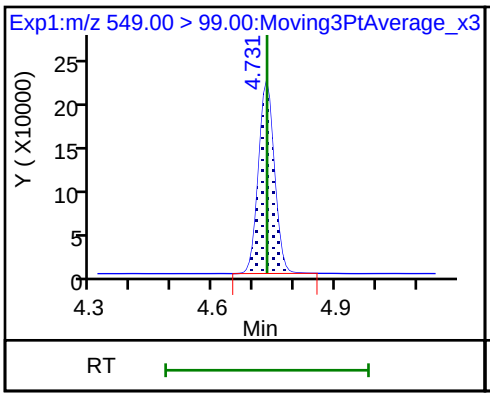
32 9-Chlorohexadecafluoro-3-oxanona



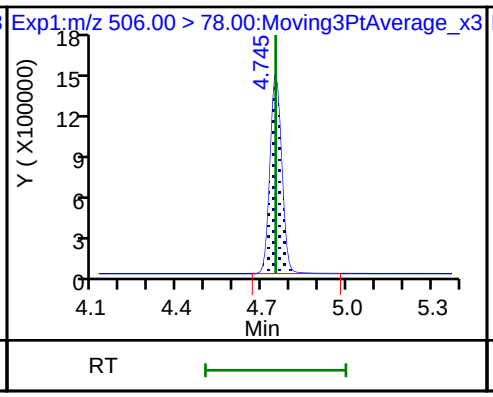
35 Perfluorononanesulfonic acid



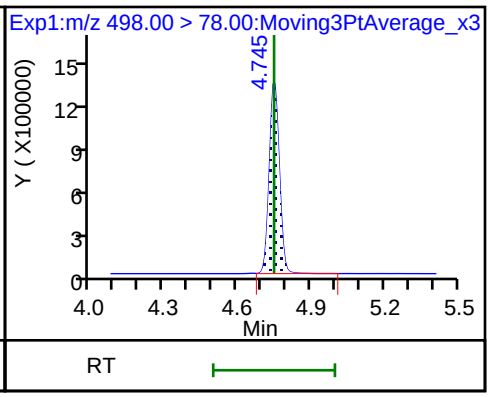
35 Perfluorononanesulfonic acid



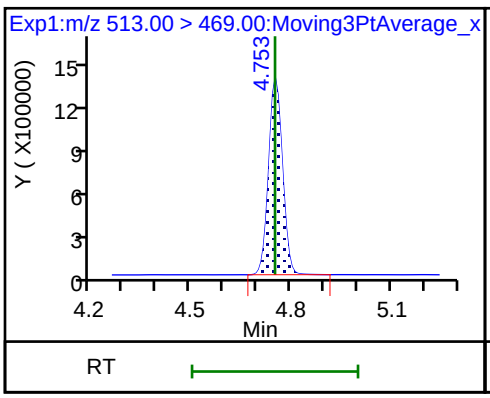
D 33 13C8 FOSA



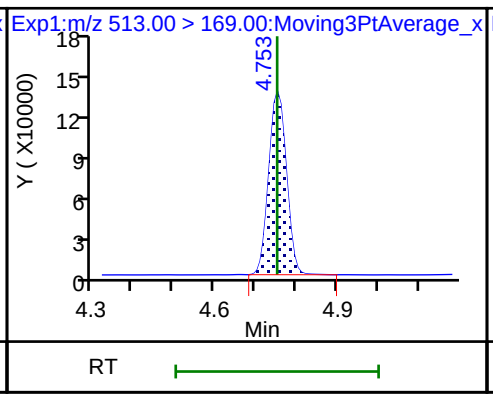
34 Perfluorooctanesulfonamide



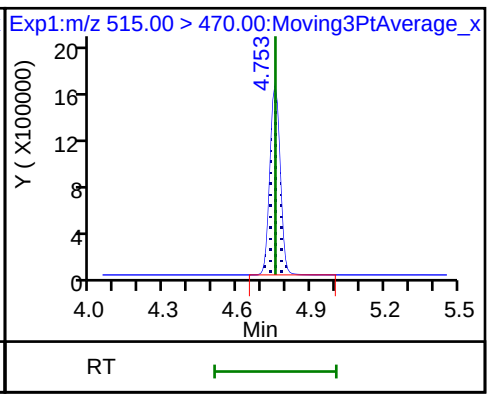
37 Perfluorodecanoic acid



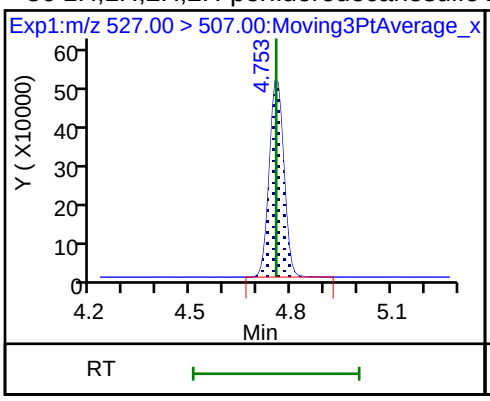
37 Perfluorodecanoic acid



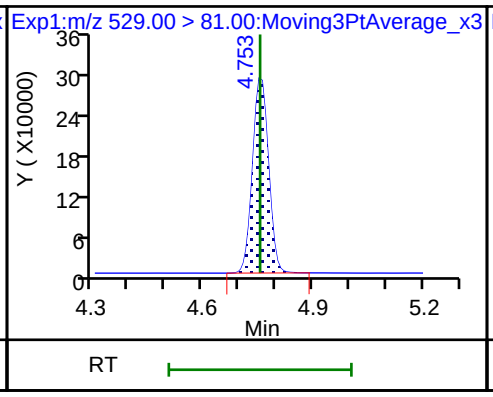
D 39 13C2 PFDA



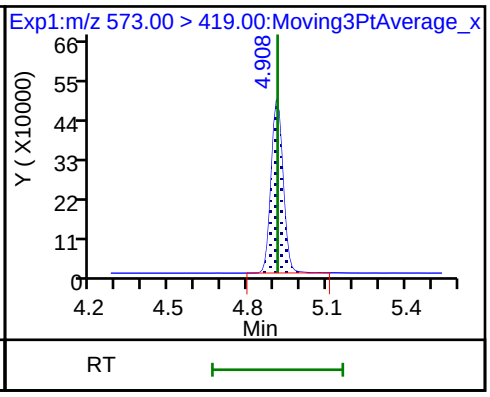
36 1H,1H,2H,2H-perfluorodecanesulfo



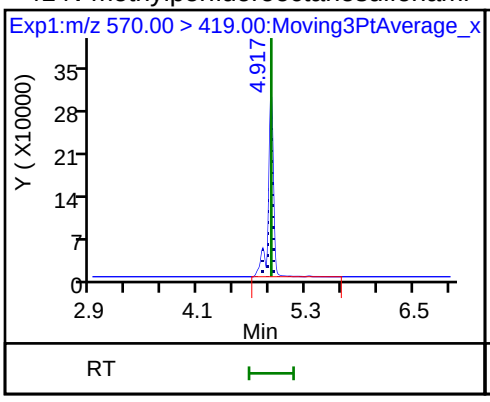
D 38 M2-8:2 FTS



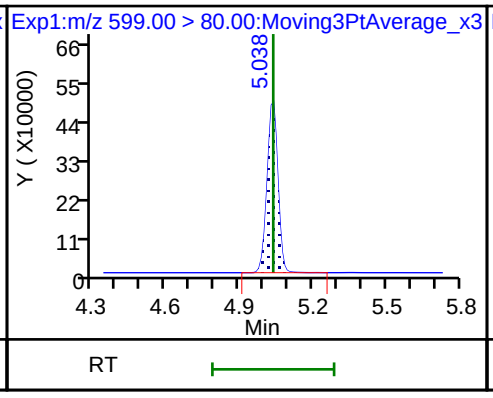
D 40 d3-NMeFOSAA



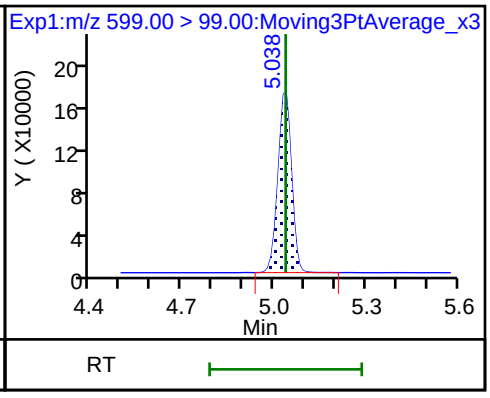
41 N-methylperfluorooctanesulfonami



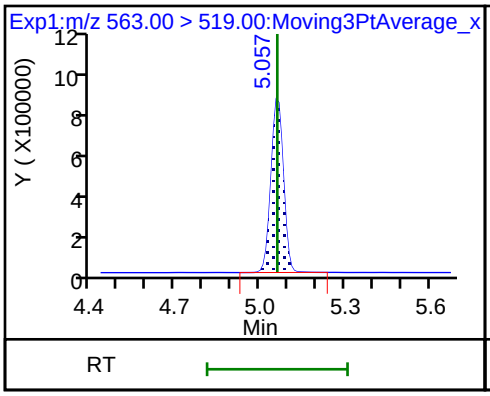
42 Perfluorodecanesulfonic acid



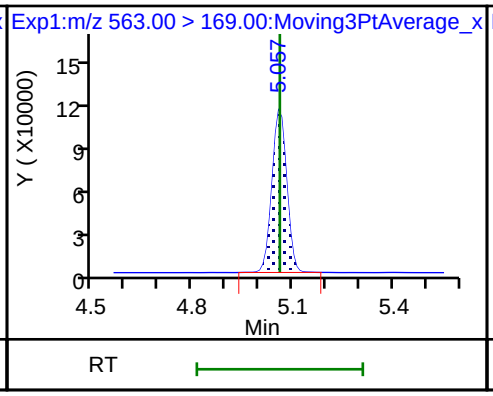
42 Perfluorodecanesulfonic acid



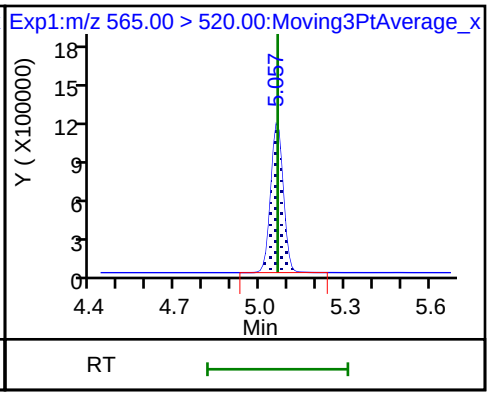
45 Perfluoroundecanoic acid



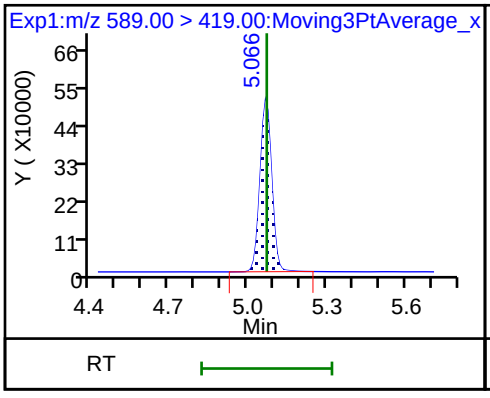
45 Perfluoroundecanoic acid



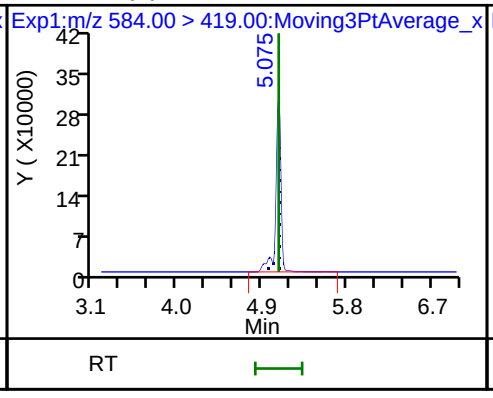
D 43 13C2 PFUnA



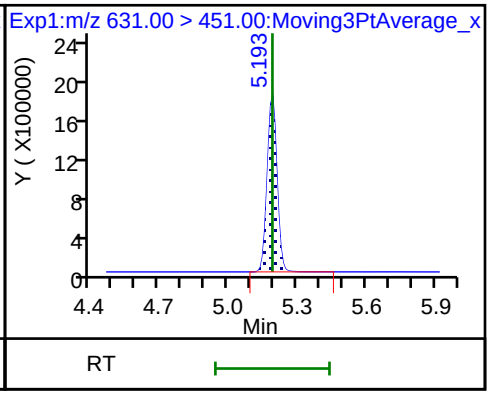
D 44 d5-NEtFOSAA



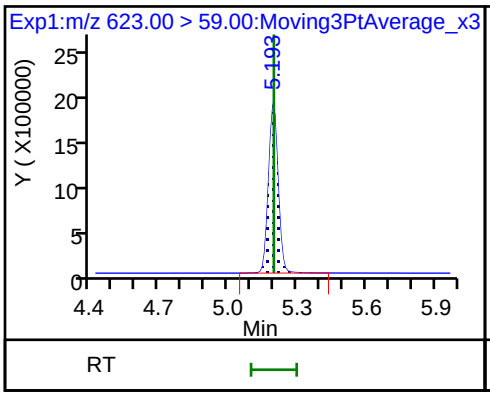
46 N-ethylperfluorooctanesulfonamid



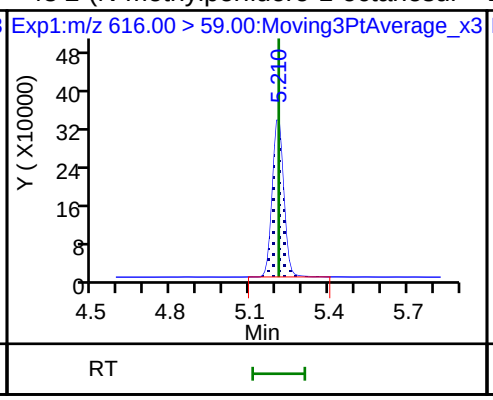
51 11-Chloroeicosafluoro-3-oxaundec



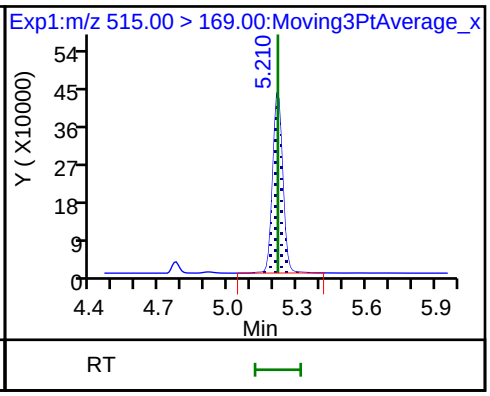
D 47 d7-N-MeFOSE-M



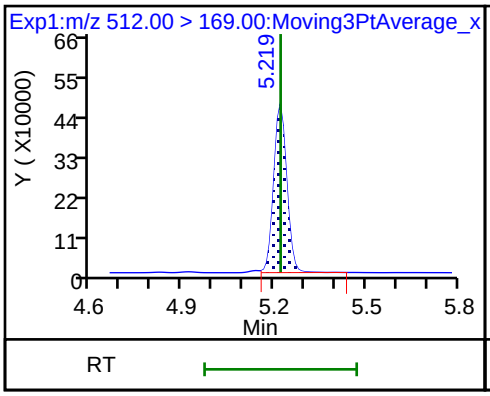
48 2-(N-methylperfluoro-1-octanesul



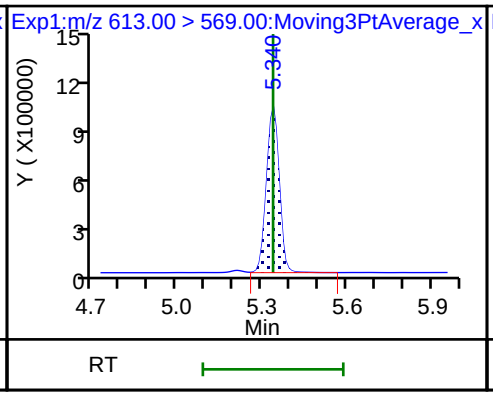
D 49 d-N-MeFOSA-M



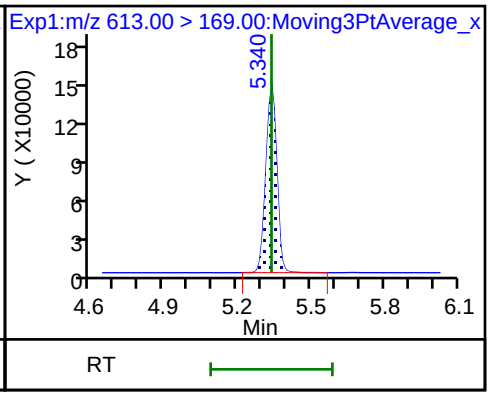
50 NMeFOSA



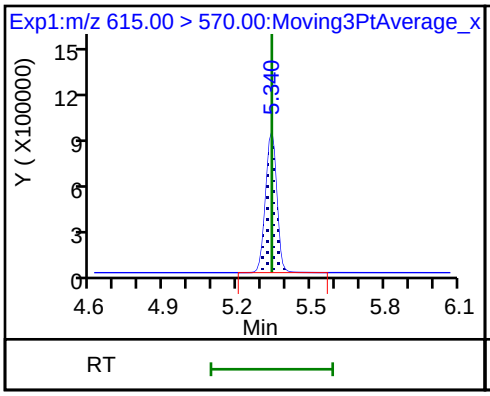
57 Perfluorododecanoic acid



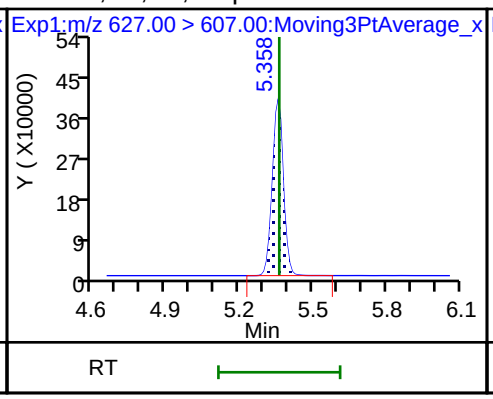
57 Perfluorododecanoic acid



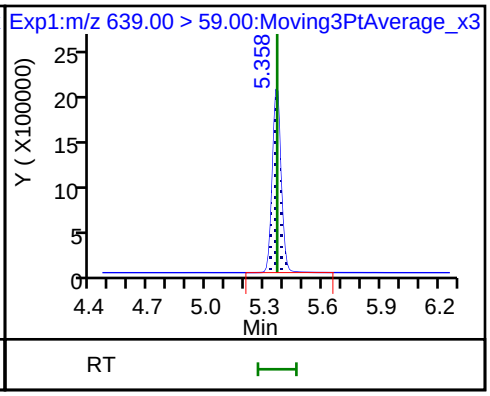
D 56 13C2 PFDoA



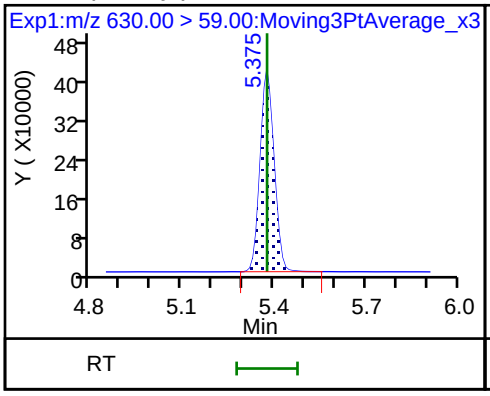
58 1H,1H,2H,2H-perfluorododecanesul



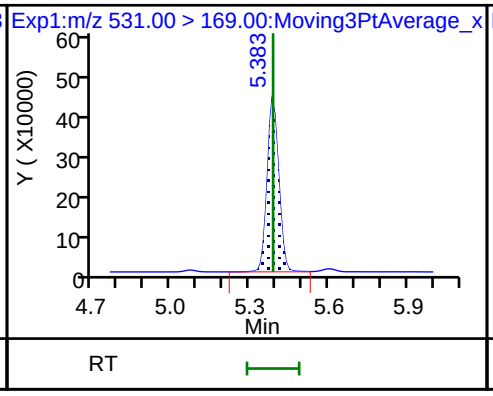
D 52 d9-N-EtFOSE-M



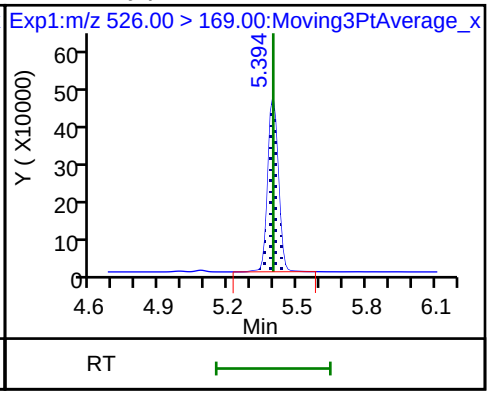
53 2-(N-ethylperfluoro-1-octanesulf



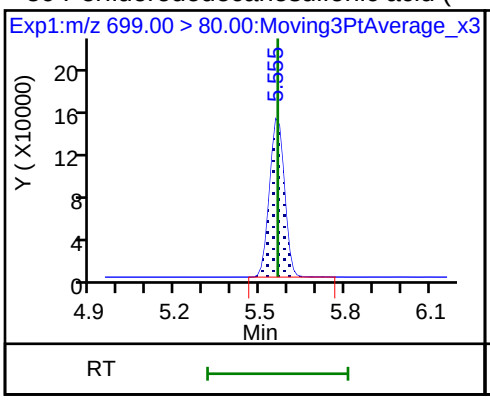
D 54 d-N-EtFOSA-M



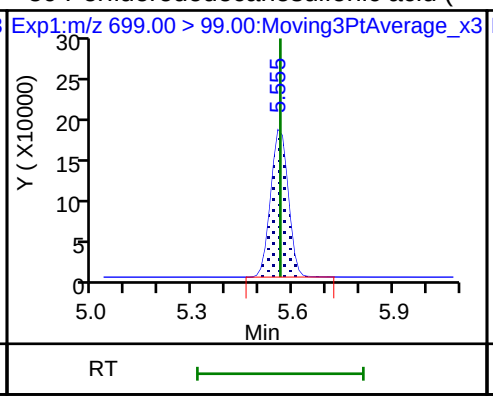
55 N-ethylperfluoro-1-octanesulfona



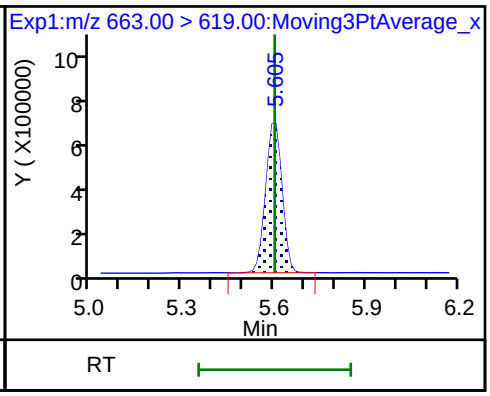
59 Perfluorododecanesulfonic acid (



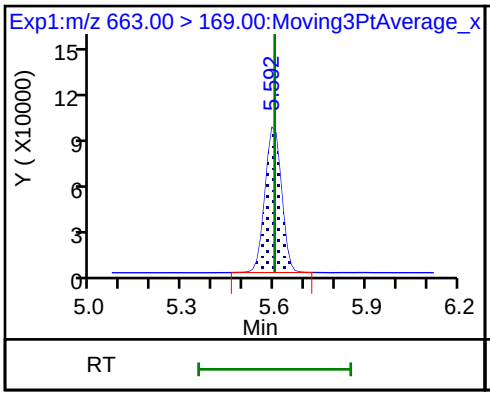
59 Perfluorododecanesulfonic acid (



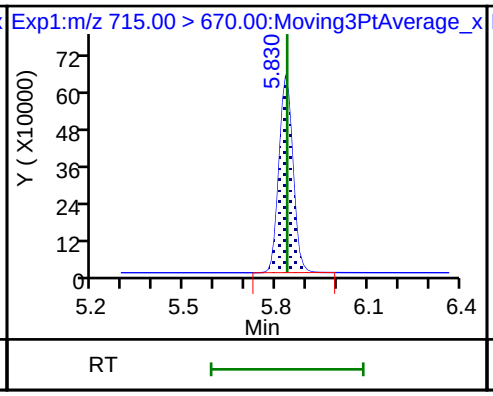
60 Perfluorotridecanoic acid



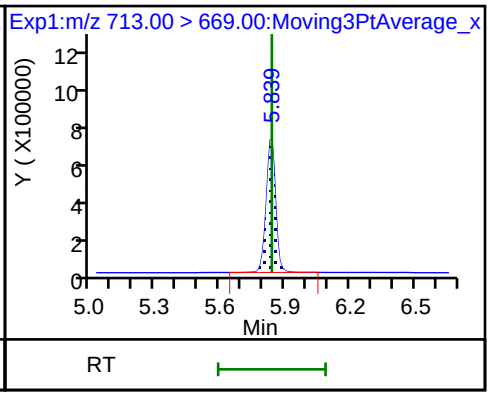
60 Perfluorotridecanoic acid



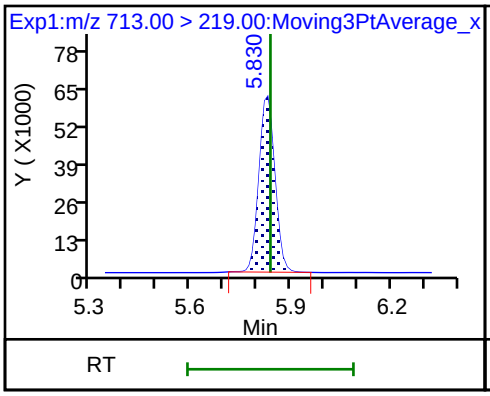
D 61 13C2 PFTeDA



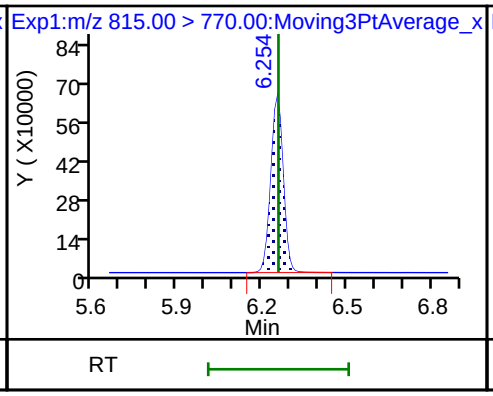
62 Perfluorotetradecanoic acid



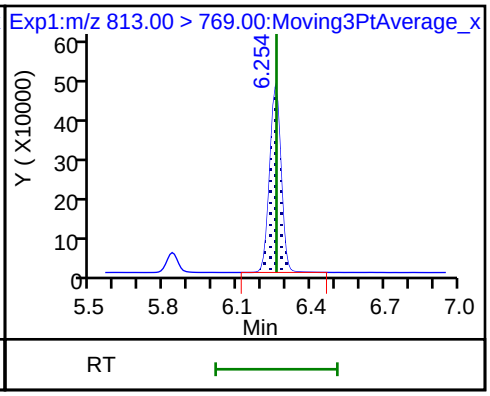
62 Perfluorotetradecanoic acid



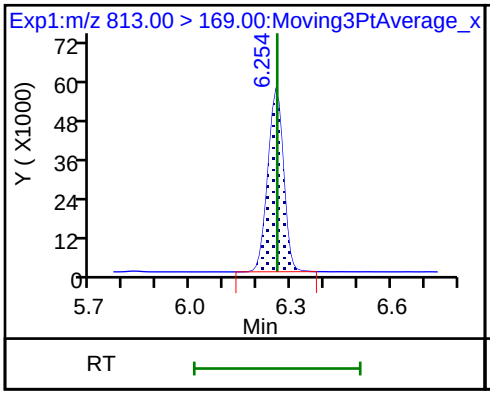
D 64 13C2 PFHxDA



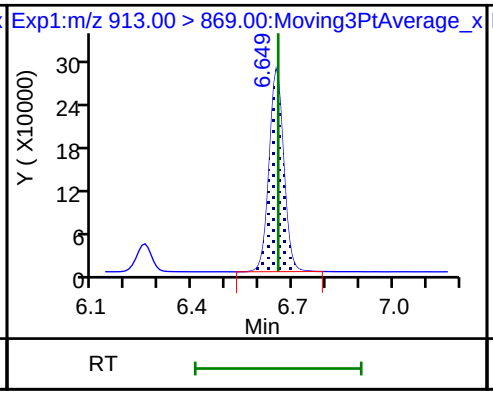
63 Perfluorohexadecanoic acid



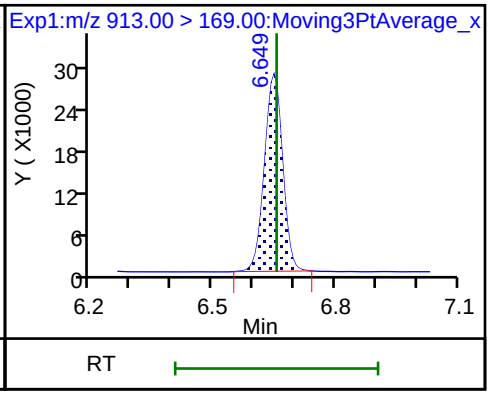
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

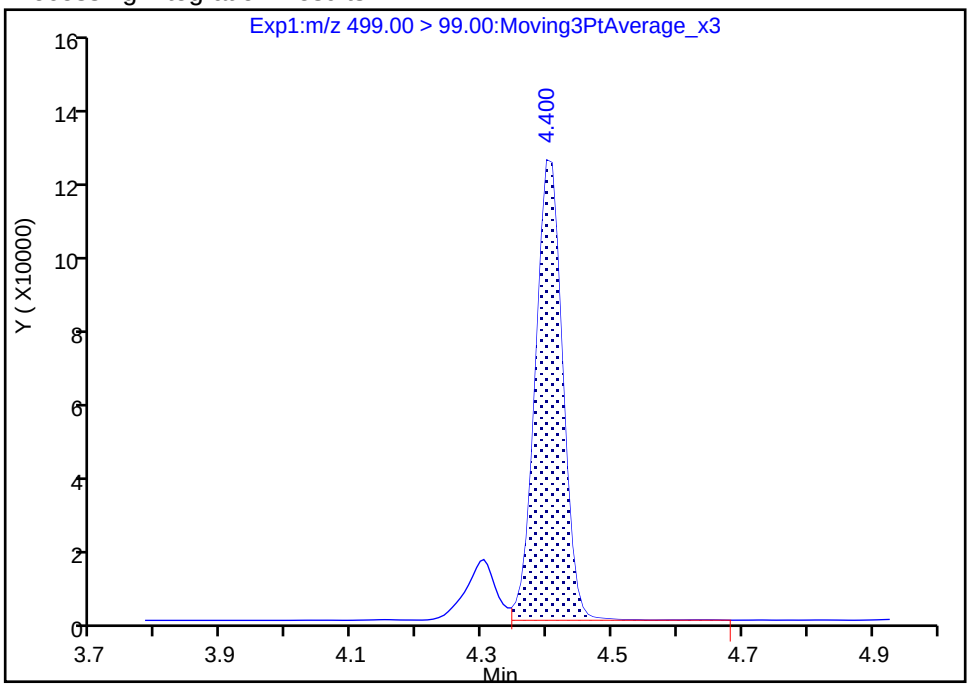
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_008.d
Injection Date: 04-Jun-2020 12:33:23 Instrument ID: A15
Lims ID: IC L5 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

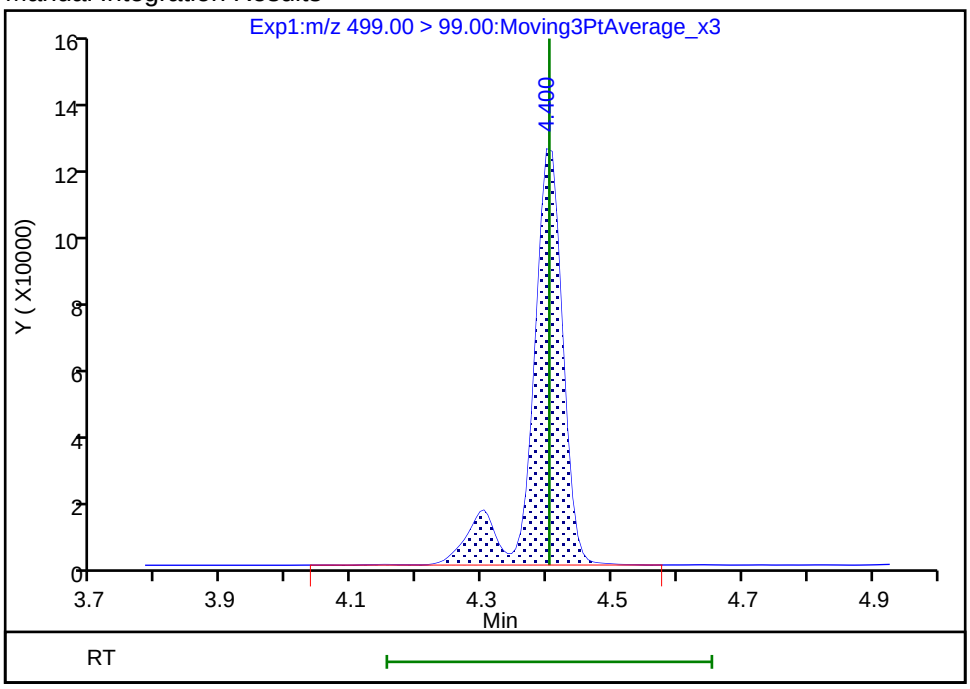
Processing Integration Results

RT: 4.40
Area: 343355
Amount: 2.331493
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 392900
Amount: 2.331493
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:39:01
Audit Action: Manually Integrated Audit Reason: Isomers

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_009.d
Lims ID: IC L6 Full
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 04-Jun-2020 12:42:29 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 6 (25)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:48 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:41:10
Ratio Calibration: Average of Initial Calibration

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	2.552	2.549	0.003	0.629	9090663	2.67		107	17210	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.552	2.551	0.001	1.000	17523720	5.20		104	4592	
D 4 13C5 PFPeA										
267.90 > 223.00	2.903	2.895	0.008	0.716	7995197	2.63		105	11474	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.903	2.898	0.005	1.000	15678192	4.87		97.3	1186	
D 9 13C3 PFBS										
301.90 > 80.00	2.934	2.930	0.004	0.723	5370688	2.55		109	17818	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.934	2.930	0.004	1.000	10524971	4.67	Target=2.14	106	4245	
298.90 > 99.00	2.934	2.930	0.004	1.000	4764233		2.21(1.07-3.21)	106	2835	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.229	3.226	0.003	0.796	718991	2.56		110	1564	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.236	3.227	0.009	1.002	3421017	4.93		105	21078	
D 11 13C2 PFHxA										
315.00 > 270.00	3.276	3.267	0.009	0.808	7678162	2.60		104	12578	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.276	3.267	0.009	1.000	14187904	4.93	Target=15.73	98.6	6199	
313.00 > 119.00	3.276	3.267	0.009	1.000	928201		15.29(7.86-23.59)	98.6	2354	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.297	3.285	0.012	1.124	8202928	4.84	Target=2.69	103	15396	
349.00 > 99.00	3.286	3.285	0.001	1.120	3017881		2.72(1.35-4.04)	103	7884	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.392	3.386	0.006	0.836	1839459	2.72		109	10200	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.392	3.386	0.006	1.000	3377071	5.02		100	13733	
D 18 13C4 PFHpA										
367.00 > 322.00	3.667	3.661	0.006	0.904	5990467	2.55		102	25145	
D 17 18O2 PFHxS										
403.00 > 84.00	3.677	3.667	0.010	0.907	2582641	2.54		108	10092	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.677	3.670	0.007	1.000	5172852	4.22	Target=2.99	92.7	13189	
399.00 > 99.00	3.677	3.670	0.007	1.000	1795493		2.88(1.50-4.49)	92.7	4468	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.667	3.662	0.005	1.000	12066452	4.98	Target=3.80	99.6	4009	
363.00 > 169.00	3.667	3.662	0.005	1.000	3152903		3.83(1.90-5.71)	99.6	10653	
19 DONA										
377.00 > 251.00	3.716	3.709	0.007	0.842	30115737	4.81	Target=2.14	102	30696	
377.00 > 85.00	3.716	3.709	0.007	0.842	14355425		2.10(1.07-3.21)	102	19180	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.040	4.030	0.010	0.996	734246	2.37		99.7	3738	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.040	4.032	0.008	1.000	2989847	4.92		104	10896	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.056	4.046	0.010	0.919	4617036	4.96	Target=3.77	104	8948	
449.00 > 99.00	4.056	4.046	0.010	0.919	1238635		3.73(1.89-5.66)	104	4917	
$ 26 13C8 PFOA										
421.00 > 376.00	4.056	4.046	0.010	1.000	3300754	2.53		104	11485	
D 25 13C4 PFOA										
417.00 > 372.00	4.056	4.051	0.005	1.000	5354025	2.52		101	9906	
* 23 13C2 PFOA										
415.00 > 370.00	4.056	4.051	0.005		5380903	2.50			13404	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.064	4.052	0.012	1.002	10227799	4.52	Target=2.88	90.4	793	
413.00 > 169.00	4.056	4.052	0.004	1.000	3924375		2.61(1.44-4.31)	90.4	22459	
$ 28 13C8 PFOS										
507.00 > 99.00	4.405	4.400	0.005	1.086	703067	2.63		110	4023	
D 27 13C4 PFOS										
503.00 > 80.00	4.412	4.402	0.010	1.088	2039057	2.59		108	5768	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.412	4.403	0.009	1.000	4023416	4.77	Target=4.89	103	5919	
499.00 > 99.00	4.412	4.403	0.009	1.000	815892		4.93(2.44-7.33)	103	4533	
31 Perfluorononanoic acid										
463.00 > 419.00	4.428	4.417	0.011	1.000	8604297	4.92	Target=7.00	98.3	1538	
463.00 > 169.00	4.428	4.417	0.011	1.000	1258241		6.84(3.50-10.51)	98.3	6162	
D 30 13C5 PFNA										
468.00 > 423.00	4.428	4.417	0.011	1.092	4315211	2.66		106	10268	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.599	4.592	0.007	1.042	11361857	4.88		105	16174	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.737	4.732	0.005	1.074	3370318	4.95	Target=2.77	103	4718	
549.00 > 99.00	4.737	4.732	0.005	1.074	1194396		2.82(1.38-4.15)	103	6434	
D 33 13C8 FOSA										
506.00 > 78.00	4.752	4.747	0.005	1.172	4095028	2.61		105	9165	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.761	4.749	0.012	1.002	7465140	5.19		104	4257	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.761	4.752	0.009	1.000	7786365	4.97	Target=10.36	99.3	1980	
513.00 > 169.00	4.761	4.752	0.009	1.000	731424		10.65(5.18-15.54)	99.3	242	
D 39 13C2 PFDA										
515.00 > 470.00	4.761	4.754	0.007	1.174	4057879	2.62		105	16442	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.761	4.755	0.006	1.000	3056319	4.87		102	9275	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.761	4.755	0.006	1.174	921429	2.49		104	5759	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.917	4.912	0.005	1.212	1536928	2.66		106	2260	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.917	4.915	0.002	1.000	2513798	5.60		112	1691	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.039	5.037	0.002	1.142	2922028	4.89	Target=2.97	101	7155	
599.00 > 99.00	5.039	5.037	0.002	1.142	1005191		2.91(1.49-4.46)	101	4782	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.066	5.060	0.006	1.000	4994985	5.13	Target=7.56	103	2369	
563.00 > 169.00	5.066	5.060	0.006	1.000	610832		8.18(3.78-11.34)	103	2849	
D 43 13C2 PFUnA										
565.00 > 520.00	5.066	5.062	0.004	1.249	3371659	2.55		102	10357	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.075	5.071	0.004	1.251	1520185	2.58		103	2274	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.084	5.075	0.009	1.002	2459976	5.72		114	49555	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.193	5.191	0.002	1.177	11022366	5.01		106	15267	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.202	5.198	0.004	1.283	4693030	11.9		95.2	2442	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.211	5.209	0.002	1.002	2283757	5.81		116	2924	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.220	5.215	0.005	1.287	1439720	2.91		116	181	
50 NMeFOSA										
512.00 > 169.00	5.229	5.220	0.009	1.002	2783078	5.13		103	649	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.340	5.338	0.002	1.000	6005489	5.41	Target=7.18	108	939	
613.00 > 169.00	5.340	5.338	0.002	1.000	778312		7.72(3.59-10.76)	108	4588	
D 56 13C2 PFDoA										
615.00 > 570.00	5.340	5.339	0.001	1.317	2825569	2.42		96.7	7917	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.367	5.362	0.005	1.127	2493812	5.04		105	5817	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.367	5.364	0.003	1.323	6645712	13.7		110	4874	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.375	5.376	-0.001	1.001	2702114	4.96		99.3	3435	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.394	5.387	0.007	1.330	1464448	2.91		117	309	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.405	5.395	0.010	1.002	2868640	4.89		97.7	735	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.568	5.562	0.006	1.262	1107494	5.33	Target=0.79	110	5234	
699.00 > 99.00	5.568	5.562	0.006	1.262	1338621		0.83(0.39-1.18)	110	6630	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.605	5.601	0.004	1.050	5012084	5.62	Target=6.63	112	807	
663.00 > 169.00	5.605	5.601	0.004	1.050	700489		7.16(3.32-9.95)	112	2501	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.839	5.835	0.004	1.440	2185293	2.86		114	10222	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.839	5.838	0.001	1.000	3783988	4.33	Target=8.46	86.6	980	
713.00 > 219.00	5.839	5.838	0.001	1.000	497571		7.60(4.23-12.69)	86.6	1663	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.255	6.257	-0.002	1.542	1761696	2.78		111	5612	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.255	6.258	-0.003	1.000	2927071	4.85	Target=7.92	97.1	395	
813.00 > 169.00	6.255	6.258	-0.003	1.000	382662		7.65(3.96-11.88)	97.1	2990	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.656	6.655	0.001	1.064	1574210	4.54	Target=10.24	90.8	279	
913.00 > 169.00	6.650	6.655	-0.005	1.063	174947		9.00(5.12-15.36)	90.8	1738	

Reagents:

LCPFC_LL6_00023 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_009.d

Injection Date: 04-Jun-2020 12:42:29 Instrument ID: A15

Lims ID: IC L6 Full

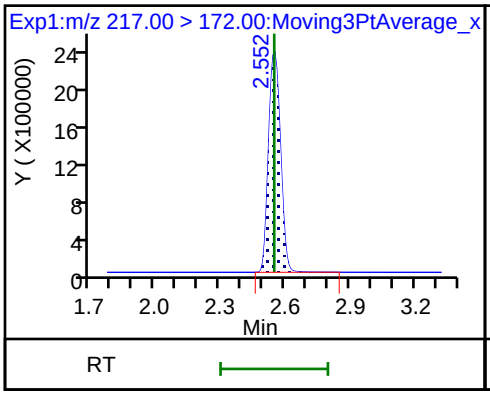
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 6 Worklist Smp#: 7

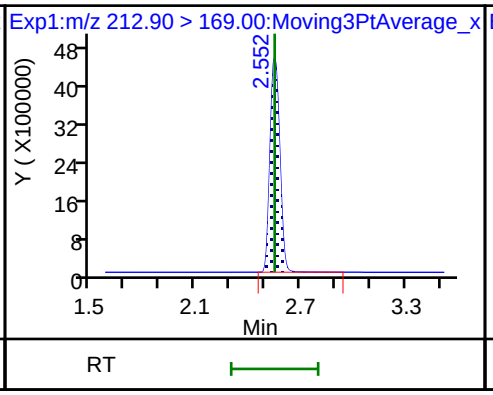
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

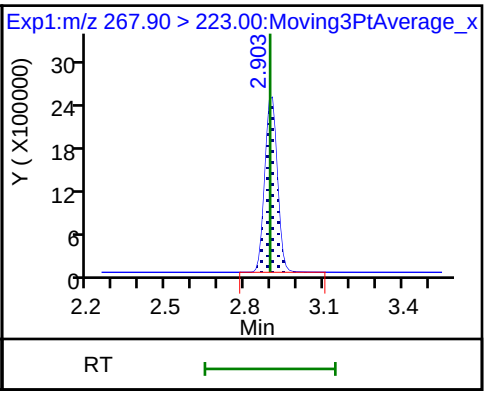
D 1 13C4 PFBA



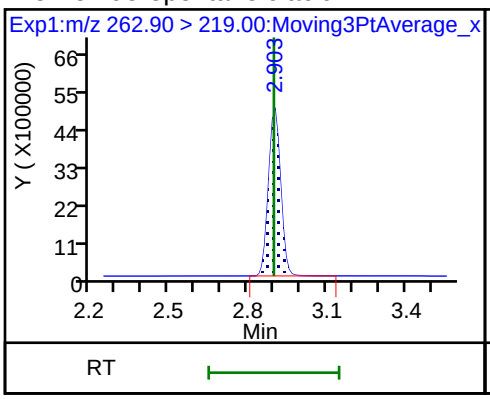
2 Perfluorobutanoic acid



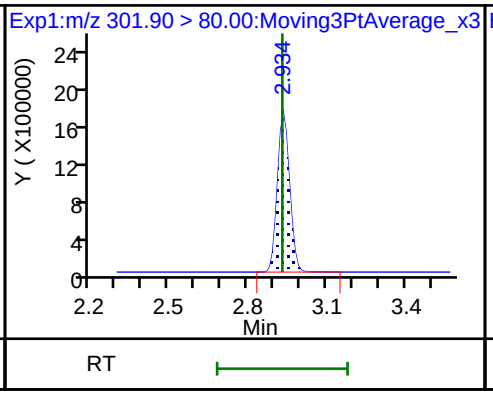
D 4 13C5 PFPeA



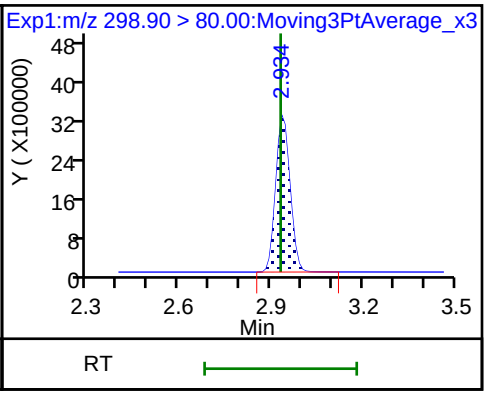
5 Perfluoropentanoic acid



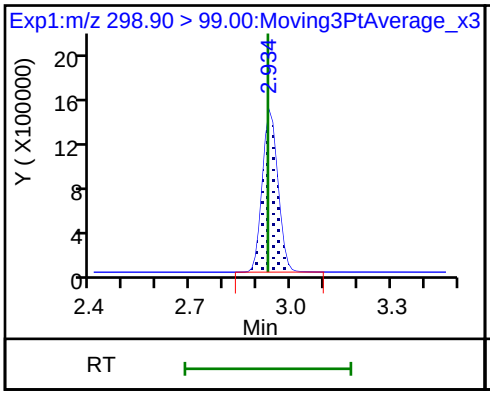
D 9 13C3 PFBS



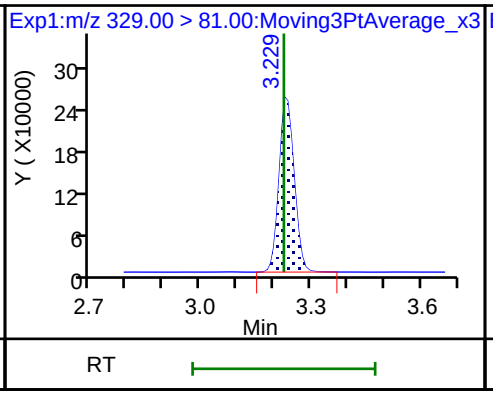
6 Perfluorobutanesulfonic acid



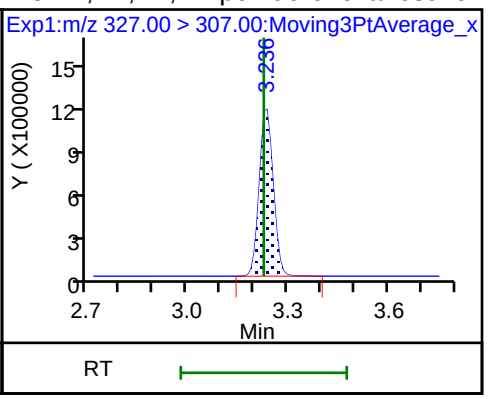
6 Perfluorobutanesulfonic acid



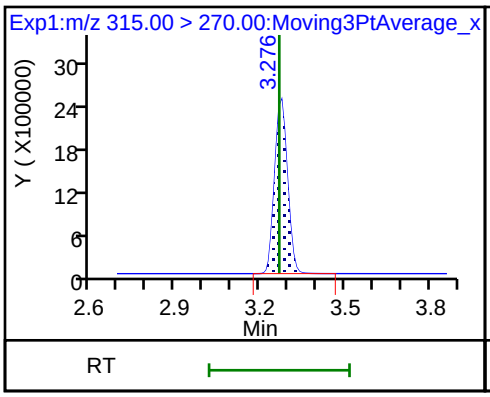
D 7 M2-4:2 FTS



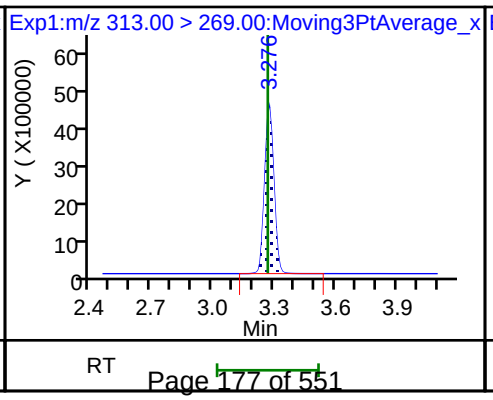
8 1H,1H,2H,2H-perfluorohexanesulfo



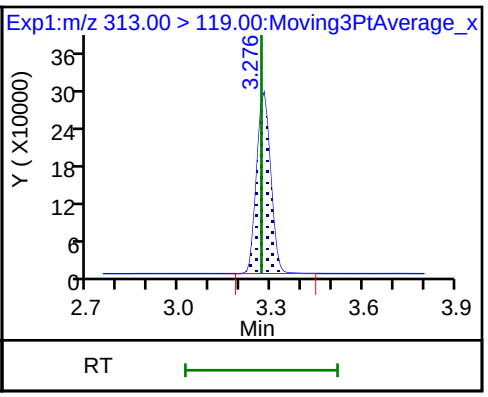
D 11 13C2 PFHxA



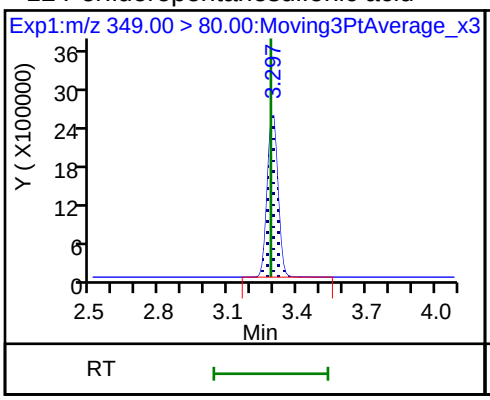
10 Perfluorohexanoic acid



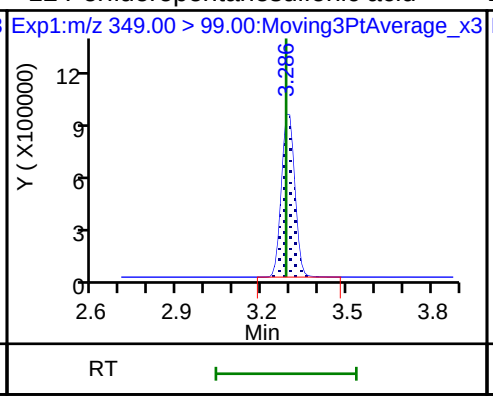
10 Perfluorohexanoic acid



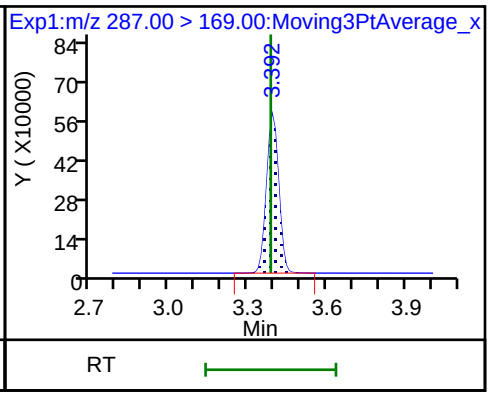
12 Perfluoropentanesulfonic acid



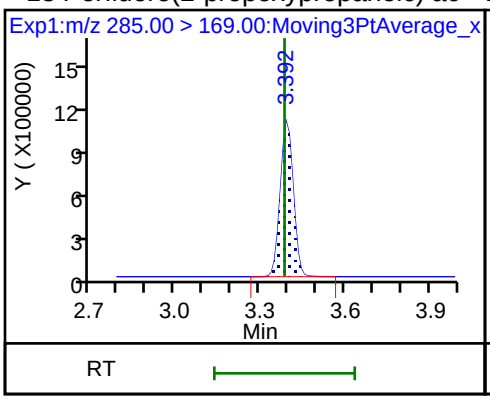
12 Perfluoropentanesulfonic acid



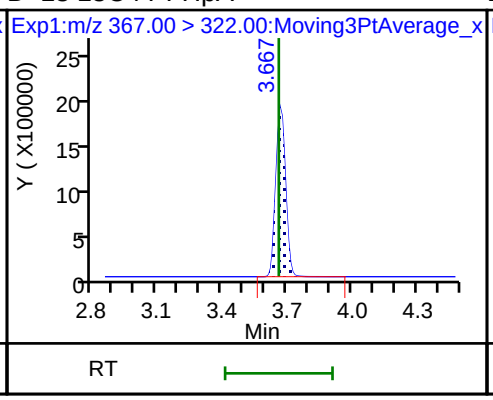
D 14 13C3 HFPO-DA



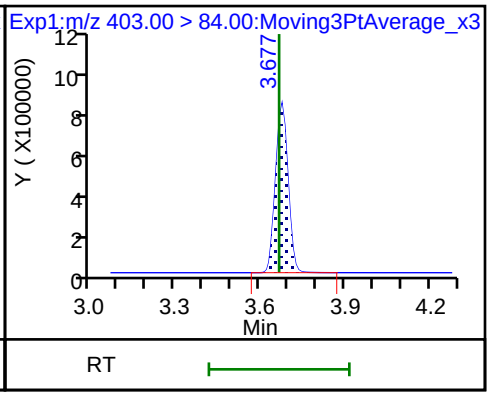
13 Perfluoro(2-propoxypropanoic) ac



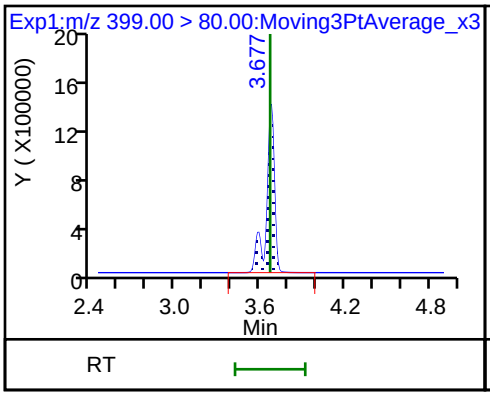
D 18 13C4 PFHpA



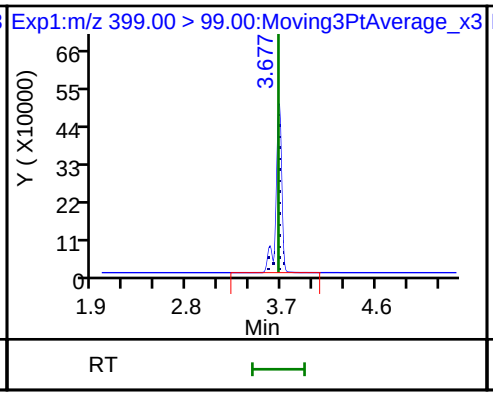
D 17 18O2 PFHxS



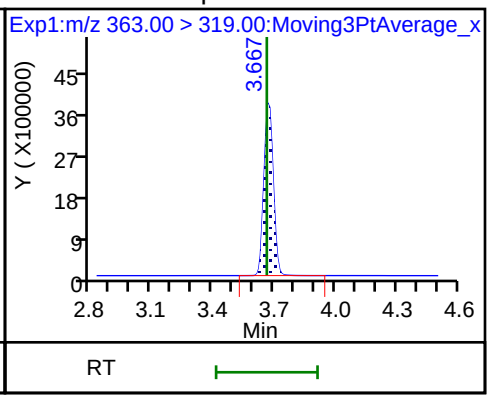
15 Perfluorohexanesulfonic acid



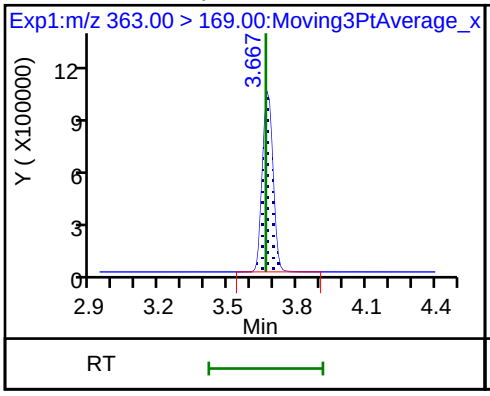
15 Perfluorohexanesulfonic acid



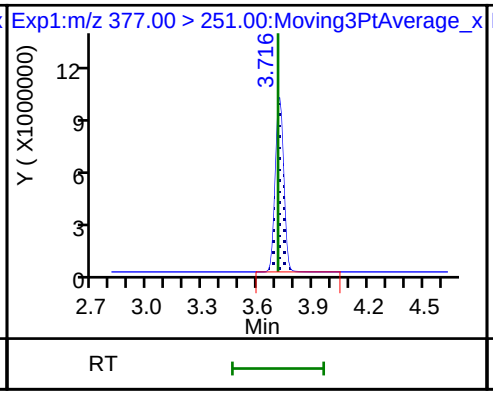
16 Perfluoroheptanoic acid



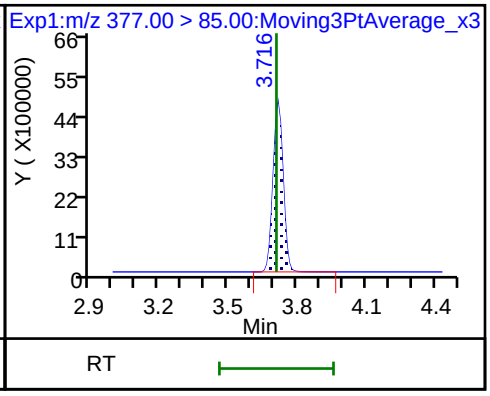
16 Perfluoroheptanoic acid



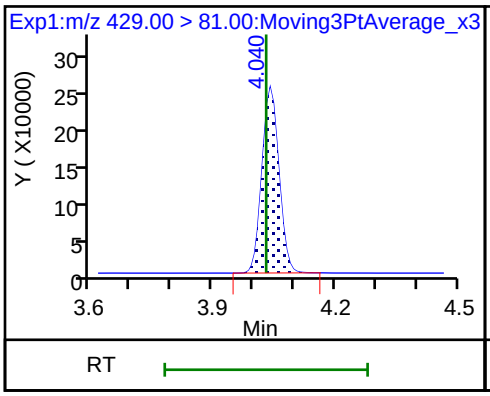
19 DONA



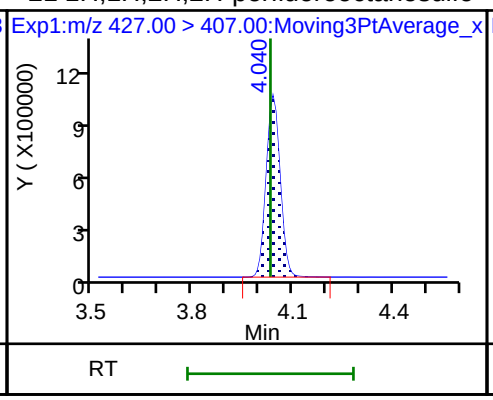
19 DONA



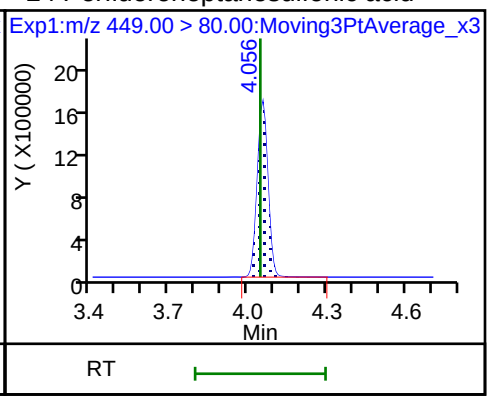
D 20 M2-6:2 FTS



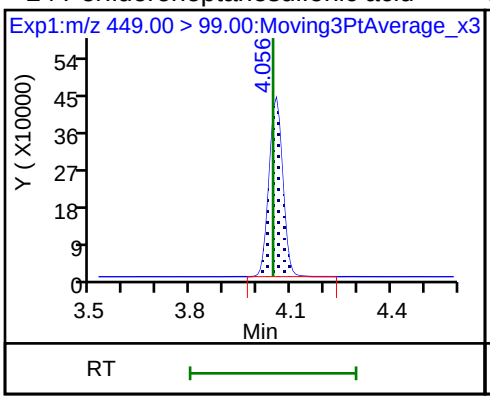
21 1H,1H,2H,2H-perfluorooctanesulfo



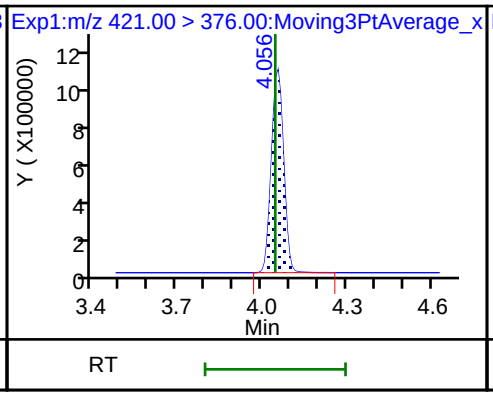
24 Perfluoroheptanesulfonic acid



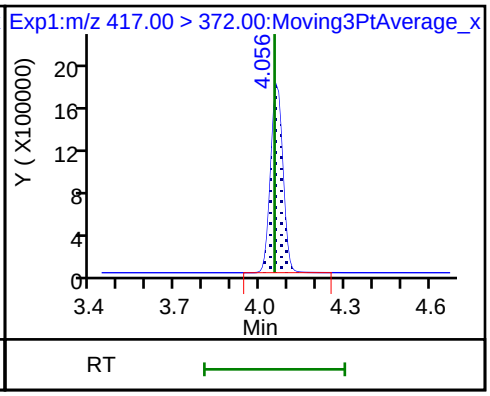
24 Perfluoroheptanesulfonic acid



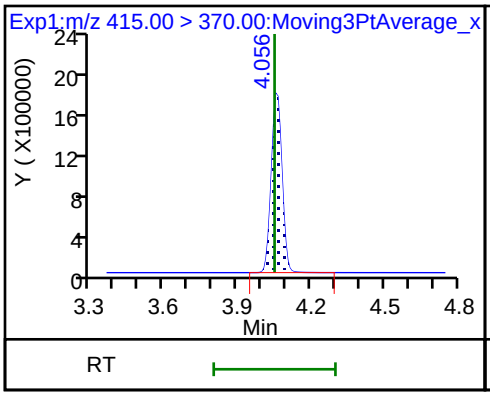
$ 26 13C8 PFOA



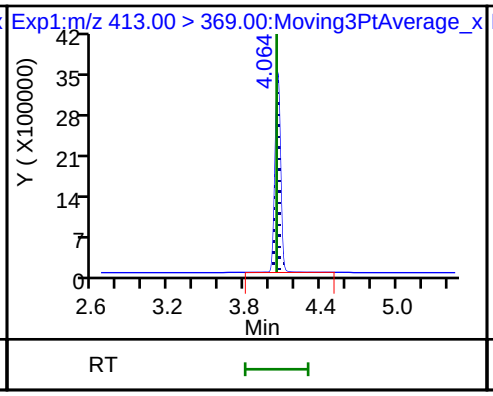
D 25 13C4 PFOA



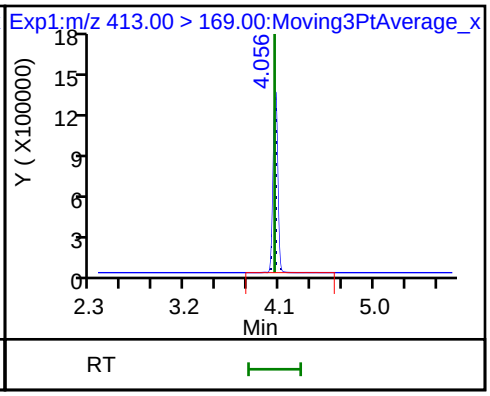
* 23 13C2 PFOA



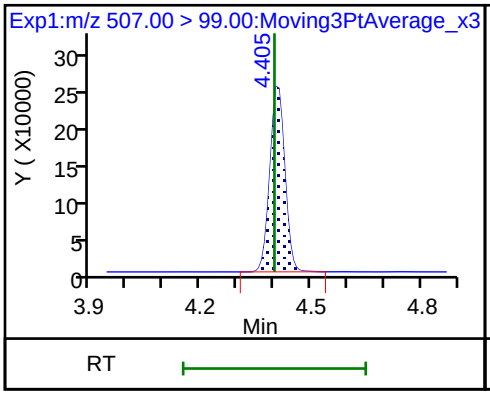
22 Perfluorooctanoic acid



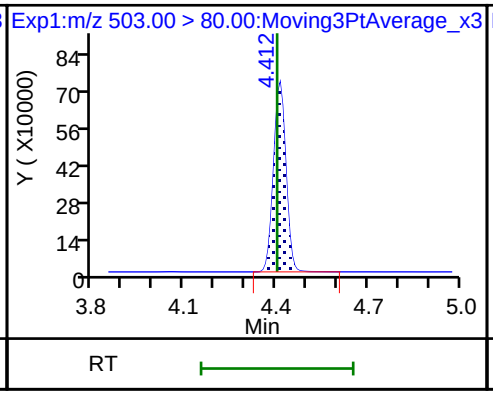
22 Perfluorooctanoic acid



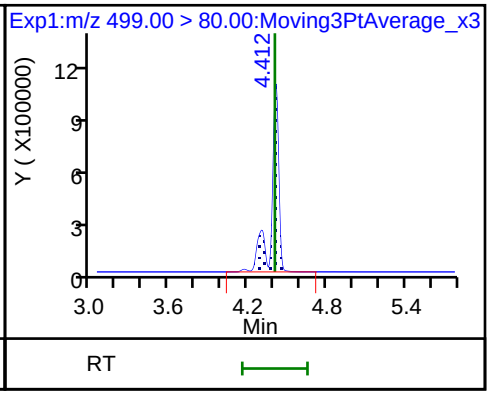
$ 28 13C8 PFOS



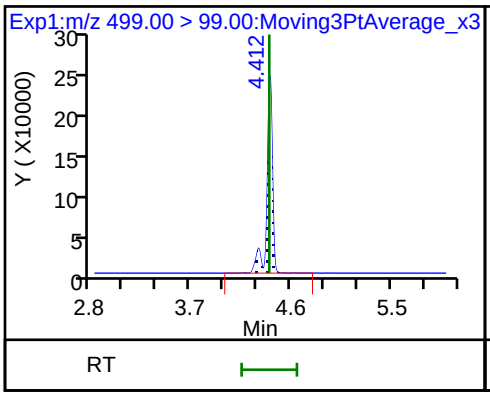
D 27 13C4 PFOS



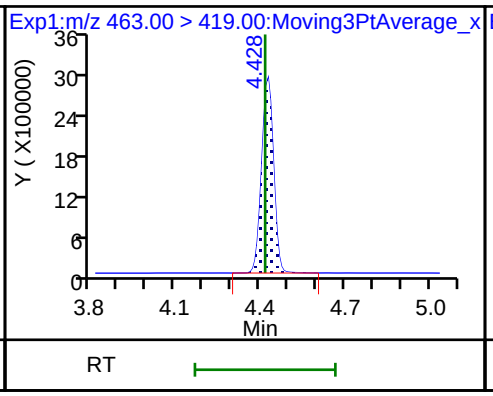
29 Perfluorooctanesulfonic acid



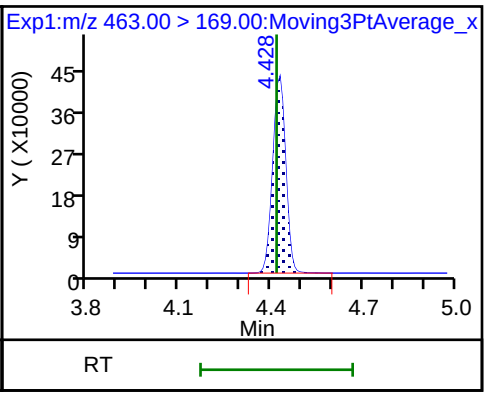
29 Perfluorooctanesulfonic acid



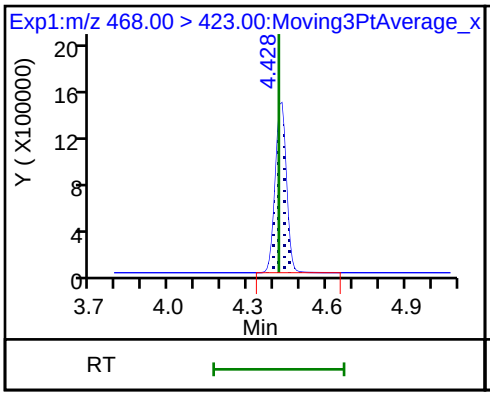
31 Perfluorononanoic acid



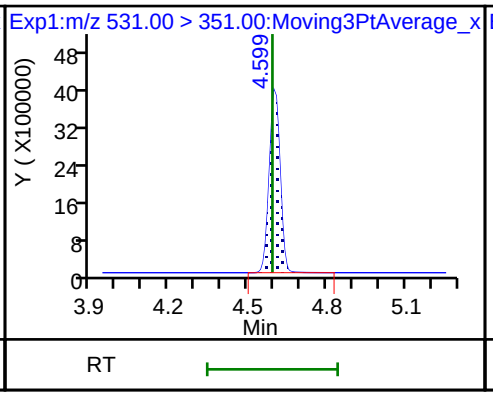
31 Perfluorononanoic acid



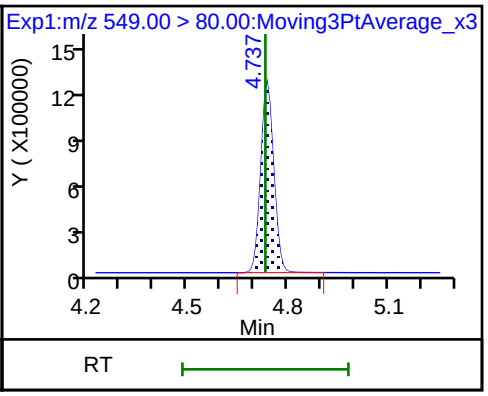
D 30 13C5 PFNA



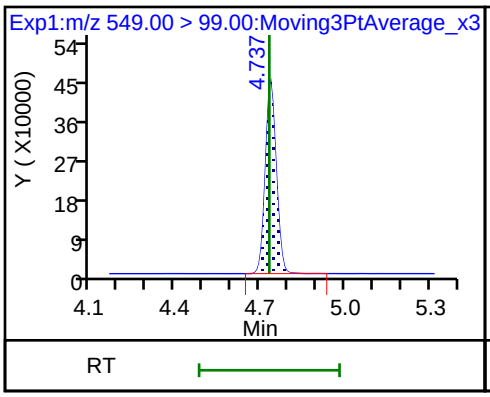
32 9-Chlorohexadecafluoro-3-oxanona



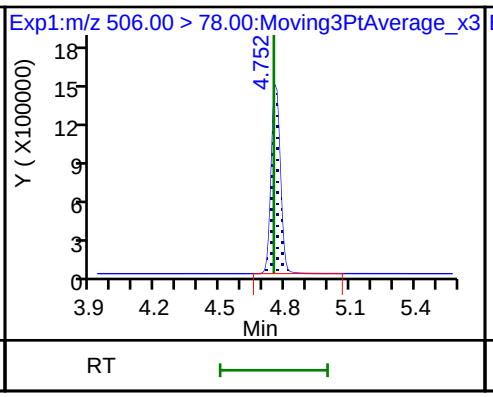
35 Perfluorononanesulfonic acid



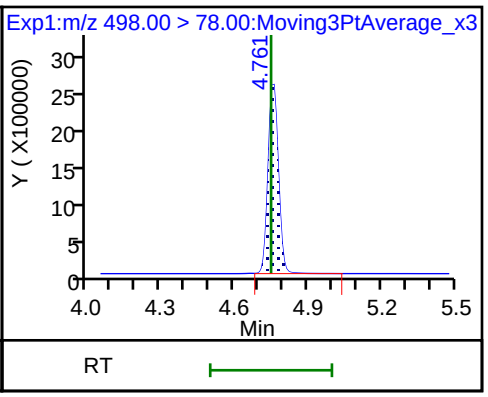
35 Perfluorononanesulfonic acid



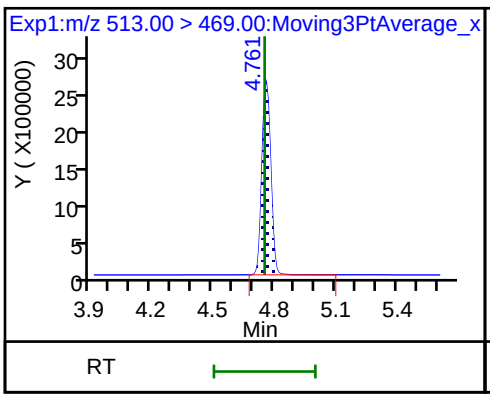
D 33 13C8 FOSA



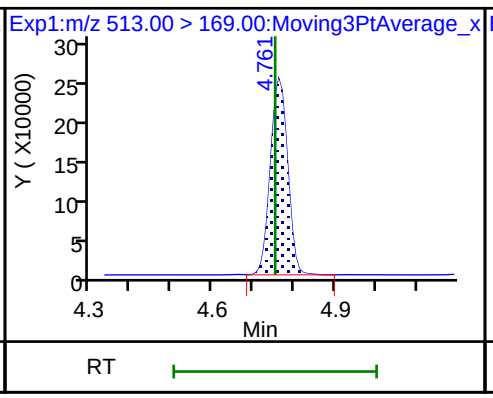
34 Perfluorooctanesulfonamide



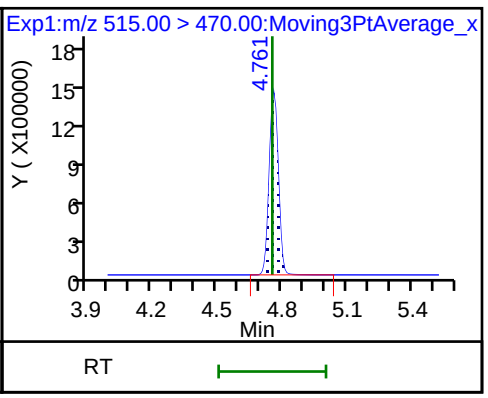
37 Perfluorodecanoic acid



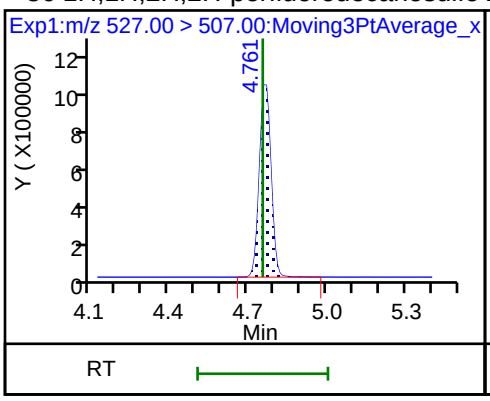
37 Perfluorodecanoic acid



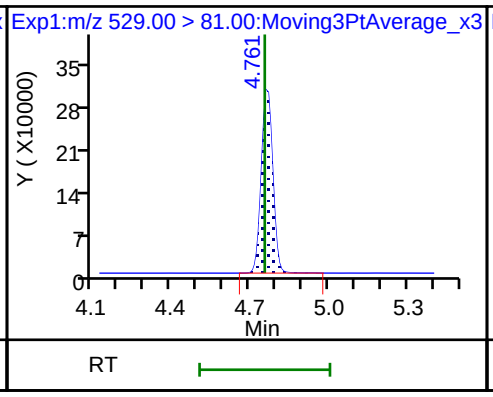
D 39 13C2 PFDA



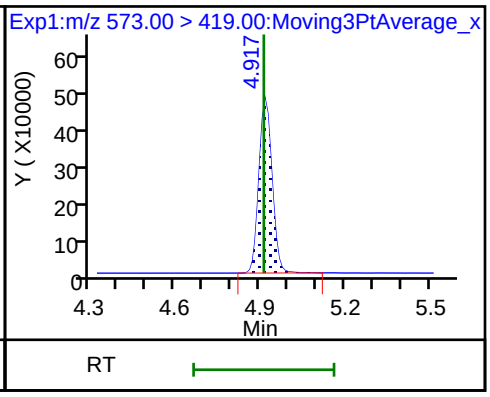
36 1H,1H,2H,2H-perfluorodecanesulfo



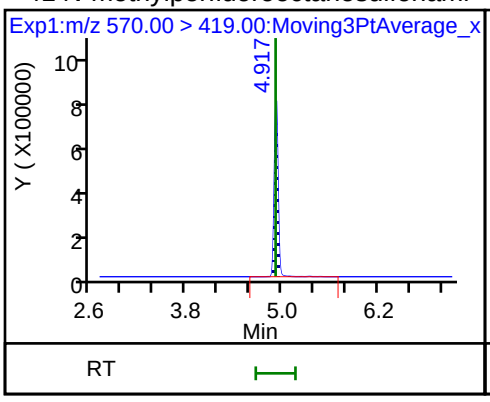
D 38 M2-8:2 FTS



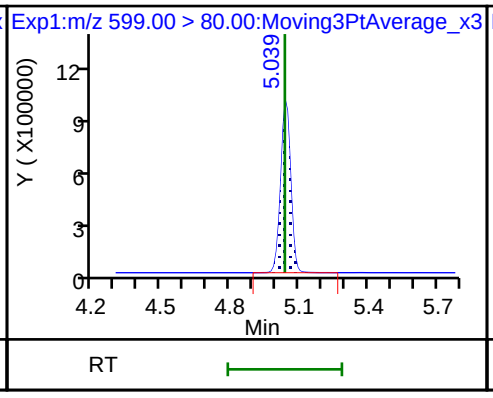
D 40 d3-NMeFOSAA



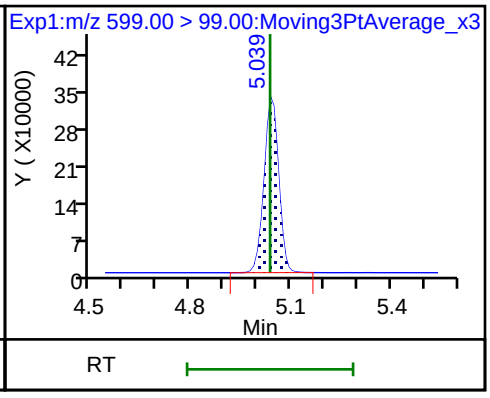
41 N-methylperfluorooctanesulfonami



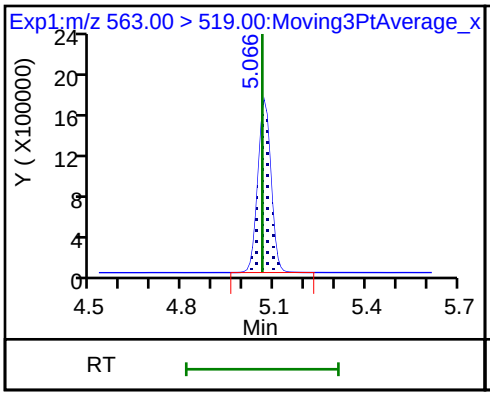
42 Perfluorodecanesulfonic acid



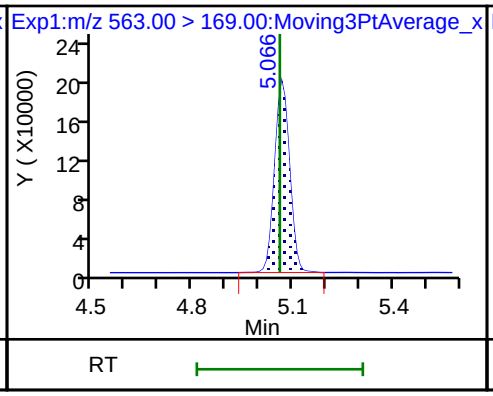
42 Perfluorodecanesulfonic acid



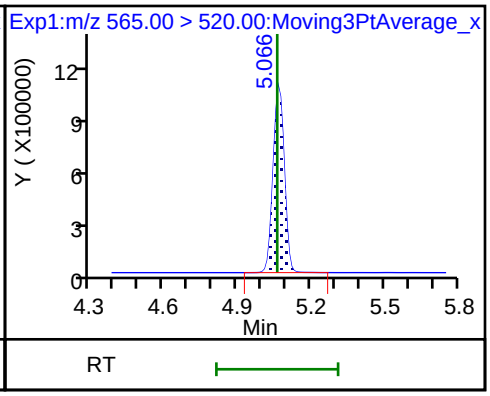
45 Perfluoroundecanoic acid



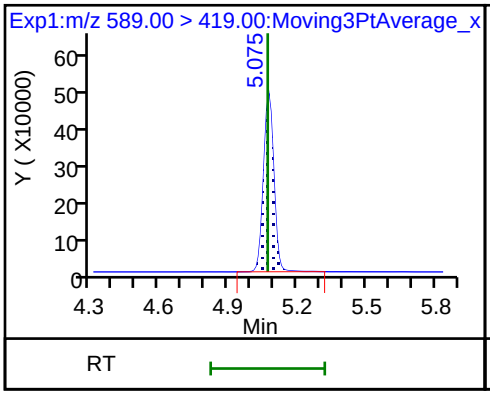
45 Perfluoroundecanoic acid



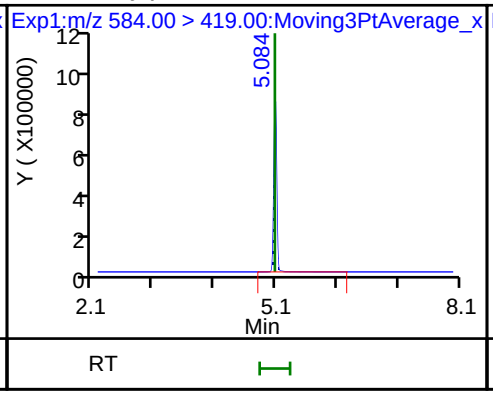
D 43 13C2 PFUnA



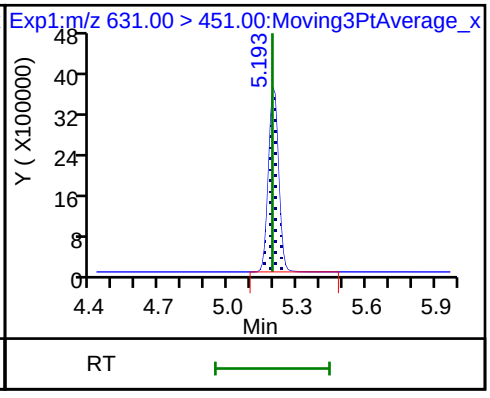
D 44 d5-NEtFOSAA



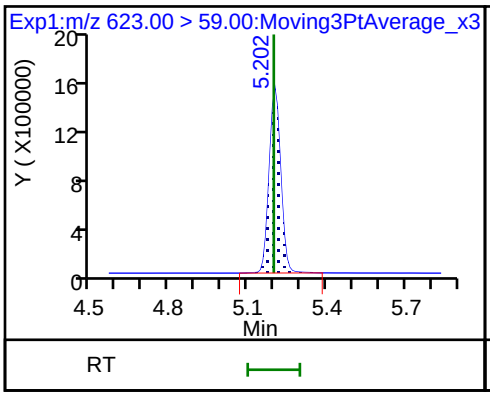
46 N-ethylperfluorooctanesulfonamid



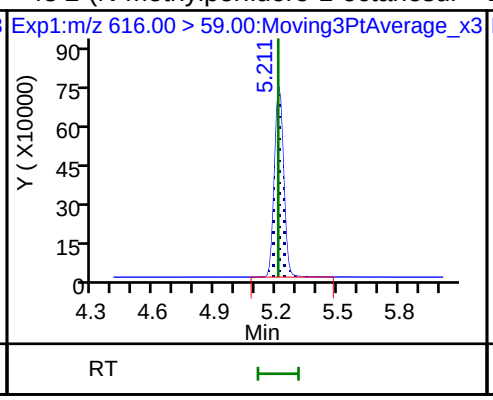
51 11-Chloroeicosafluoro-3-oxaundec



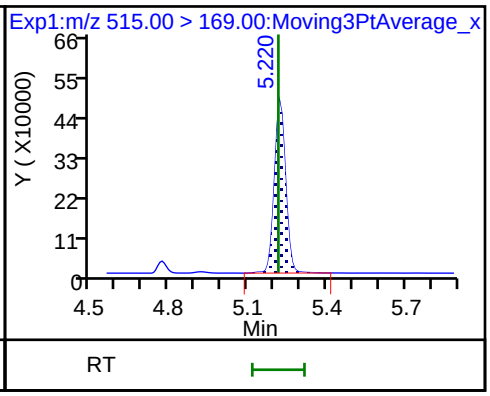
D 47 d7-N-MeFOSE-M



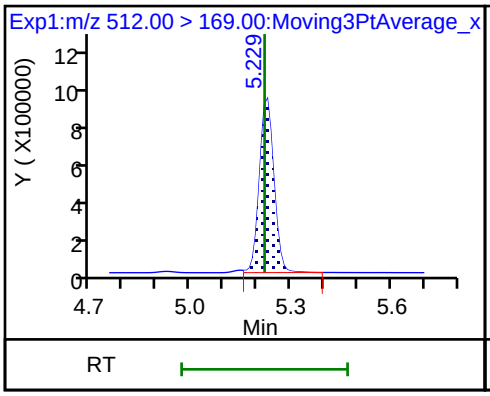
48 2-(N-methylperfluoro-1-octanesul



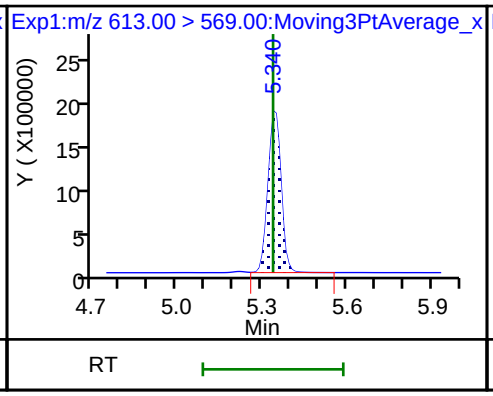
D 49 d-N-MeFOSA-M



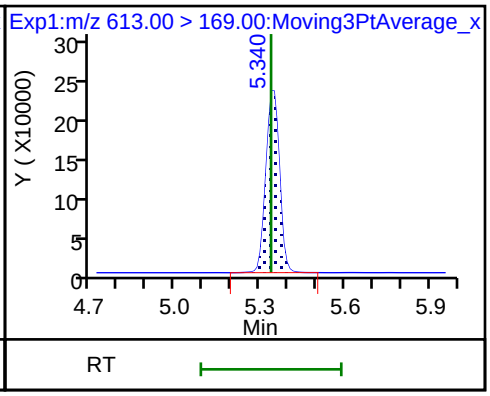
50 NMeFOSA



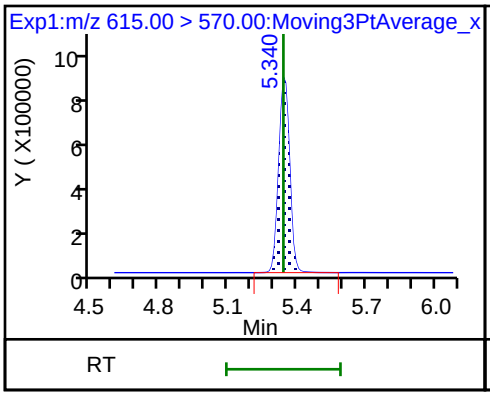
57 Perfluorododecanoic acid



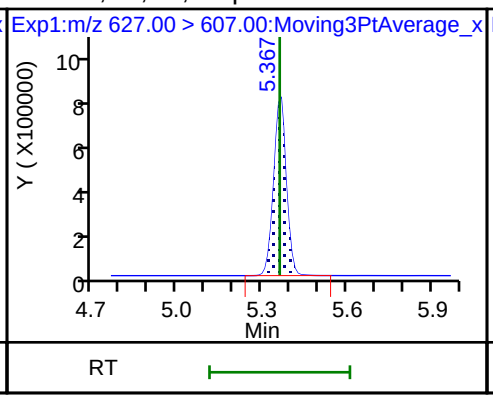
57 Perfluorododecanoic acid



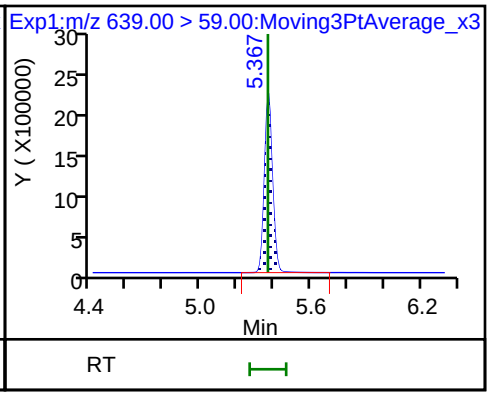
D 56 13C2 PFDoA



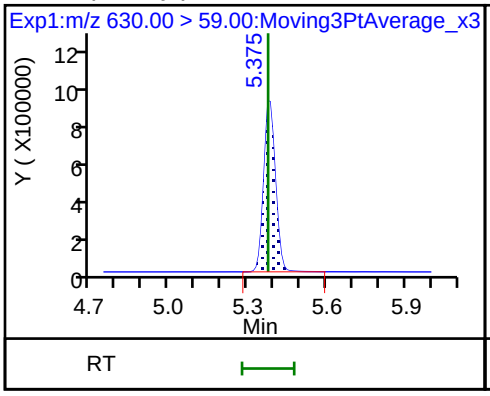
58 1H,1H,2H,2H-perfluorododecanesul



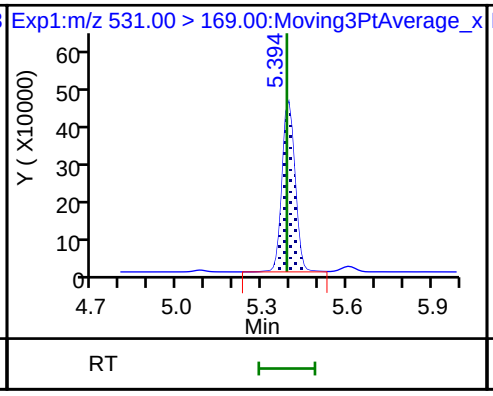
D 52 d9-N-EtFOSE-M



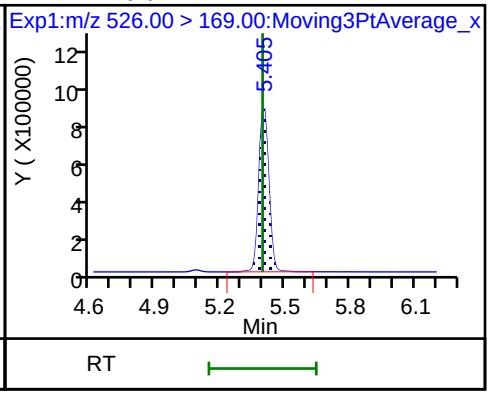
53 2-(N-ethylperfluoro-1-octanesulf



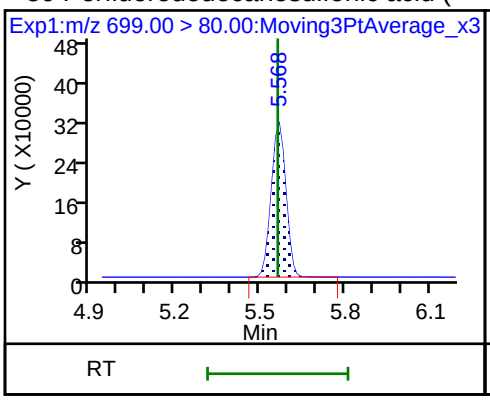
D 54 d-N-EtFOSA-M



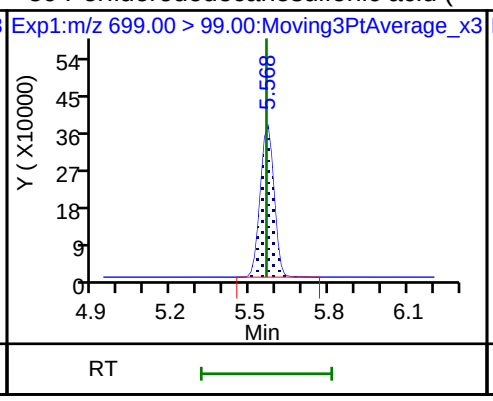
55 N-ethylperfluoro-1-octanesulfona



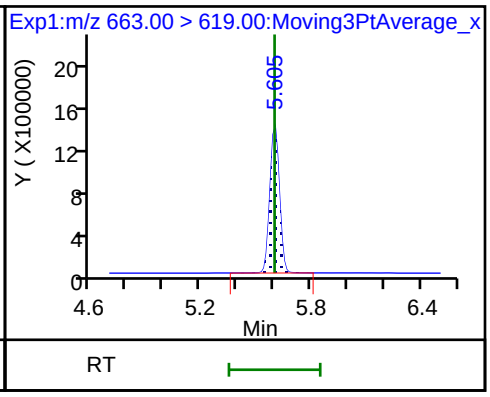
59 Perfluorododecanesulfonic acid (



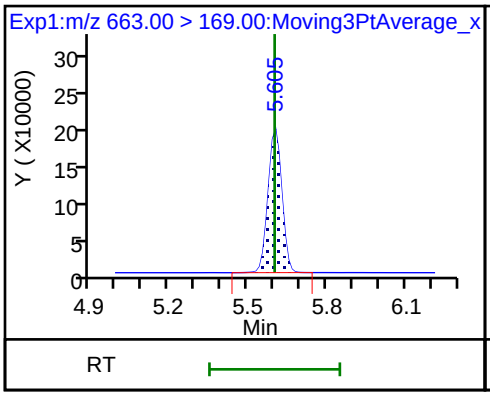
59 Perfluorododecanesulfonic acid (



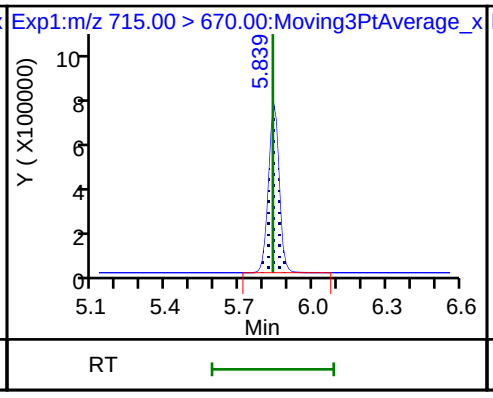
60 Perfluorotridecanoic acid



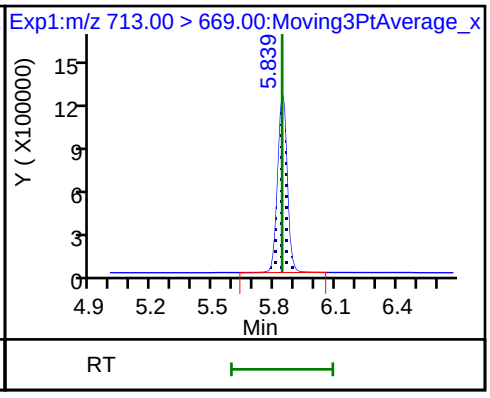
60 Perfluorotridecanoic acid



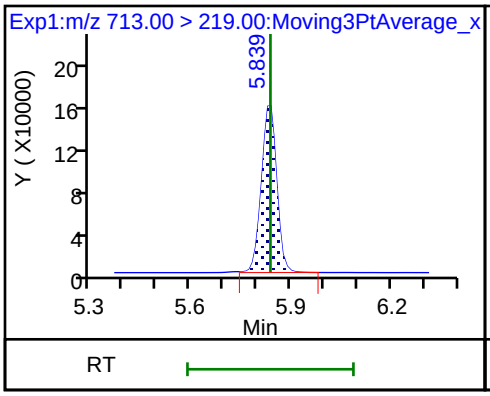
D 61 13C2 PFTeDA



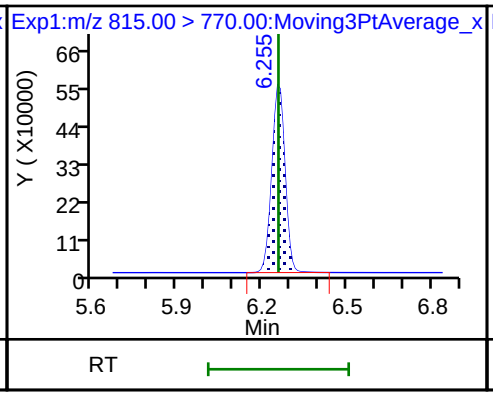
62 Perfluorotetradecanoic acid



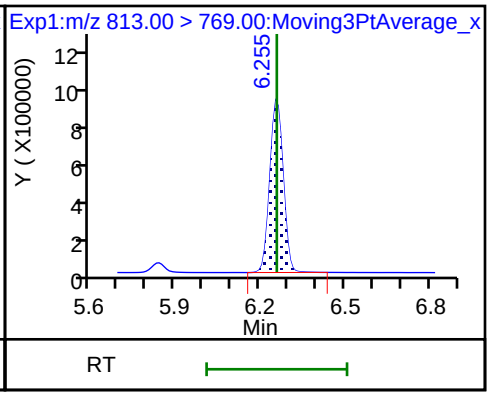
62 Perfluorotetradecanoic acid



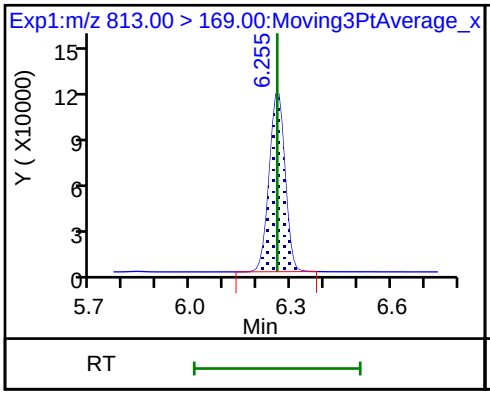
D 64 13C2 PFHxDA



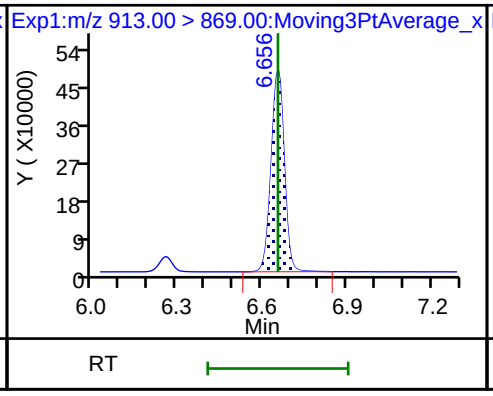
63 Perfluorohexadecanoic acid



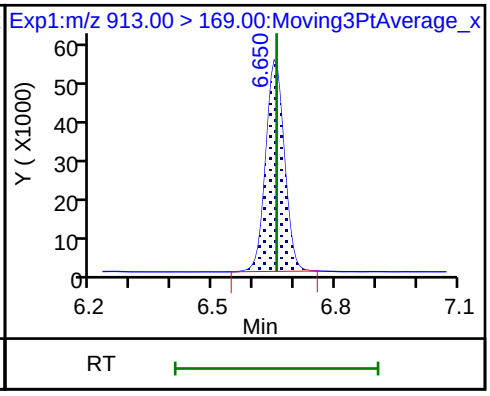
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d
Lims ID: IC L7 Full
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 04-Jun-2020 12:51:36 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CAL STD 7 (24)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:52:55 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:42:35
Ratio Calibration: Average of Initial Calibration

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	2.538	2.549	-0.011	0.628	8854156	2.66		106	16647	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.538	2.551	-0.013	1.000	34571646	10.5		105	9287	
D 4 13C5 PFPeA										
267.90 > 223.00	2.876	2.895	-0.019	0.712	7601881	2.56		102	16111	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.886	2.898	-0.012	1.004	29781182	9.72		97.2	2229	
D 9 13C3 PFBS										
301.90 > 80.00	2.917	2.930	-0.013	0.722	4903914	2.38		102	14968	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.917	2.930	-0.013	1.000	18781556	9.13	Target=2.14	103	9429	
298.90 > 99.00	2.917	2.930	-0.013	1.000	8738611		2.15(1.07-3.21)	103	5025	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.212	3.226	-0.014	0.795	667497	2.44		104	1494	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.212	3.227	-0.015	1.000	6380089	9.90		106	25539	
D 11 13C2 PFHxA										
315.00 > 270.00	3.246	3.267	-0.021	0.804	7499391	2.60		104	14234	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.246	3.267	-0.021	1.000	27188259	9.67	Target=15.73	96.7	8378	
313.00 > 119.00	3.246	3.267	-0.021	1.000	1823447		14.91(7.86-23.59)	96.7	4170	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.265	3.285	-0.020	1.120	15215091	9.83	Target=2.69	105	15472	
349.00 > 99.00	3.265	3.285	-0.020	1.120	5645245		2.70(1.35-4.04)	105	13936	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.370	3.386	-0.016	0.834	1747744	2.65		106	8465	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.370	3.386	-0.016	1.000	6739451	10.6		106	13986	
D 18 13C4 PFHpA										
367.00 > 322.00	3.647	3.661	-0.014	0.903	6067869	2.65		106	11425	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.647	3.662	-0.015	1.000	23968023	9.77	Target=3.80	97.7	6515	
363.00 > 169.00	3.647	3.662	-0.015	1.000	6309266		3.80(1.90-5.71)	97.7	10396	
D 17 18O2 PFHxS										
403.00 > 84.00	3.647	3.667	-0.020	0.903	2433067	2.46		104	6877	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.657	3.670	-0.013	1.003	10374885	8.98	Target=2.99	98.7	10548	
399.00 > 99.00	3.657	3.670	-0.013	1.003	3503351		2.96(1.50-4.49)	98.7	4697	
19 DONA										
377.00 > 251.00	3.696	3.709	-0.013	0.841	57185309	9.61	Target=2.14	102	26885	
377.00 > 85.00	3.696	3.709	-0.013	0.841	27851798		2.05(1.07-3.21)	102	27655	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.014	4.030	-0.016	0.994	675627	2.23		94.0	4216	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.023	4.032	-0.009	1.002	5537814	9.90		104	11093	
$ 26 13C8 PFOA										
421.00 > 376.00	4.039	4.046	-0.007	1.000	3139164	2.47		101	10919	
D 25 13C4 PFOA										
417.00 > 372.00	4.039	4.051	-0.012	1.000	5023412	2.43		97.0	9777	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.039	4.046	-0.007	0.919	8584960	9.70	Target=3.77	102	7522	
449.00 > 99.00	4.039	4.046	-0.007	0.919	2254394		3.81(1.89-5.66)	102	5814	
* 23 13C2 PFOA										
415.00 > 370.00	4.039	4.051	-0.012		5252289	2.50			8921	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.039	4.052	-0.013	1.000	19898971	9.37	Target=2.88	93.7	1525	
413.00 > 169.00	4.039	4.052	-0.013	1.000	6730775		2.96(1.44-4.31)	93.7	41708	
$ 28 13C8 PFOS										
507.00 > 99.00	4.396	4.400	-0.004	1.088	628417	2.40		101	3548	
D 27 13C4 PFOS										
503.00 > 80.00	4.396	4.402	-0.006	1.088	1938926	2.52		106	4182	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.396	4.403	-0.007	1.000	7733680	9.63	Target=4.89	104	3735	
499.00 > 99.00	4.396	4.403	-0.007	1.000	1485107		5.21(2.44-7.33)	104	2667	M
D 30 13C5 PFNA										
468.00 > 423.00	4.412	4.417	-0.005	1.092	3617340	2.28		91.3	7824	
31 Perfluorononanoic acid										
463.00 > 419.00	4.412	4.417	-0.005	1.000	16953333	11.6	Target=7.00	116	3030	
463.00 > 169.00	4.412	4.417	-0.005	1.000	2380609		7.12(3.50-10.51)	116	7225	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.589	4.592	-0.003	1.044	22044857	9.96		107	21274	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.728	4.732	-0.004	1.076	6203149	9.57	Target=2.77	99.7	7698	
549.00 > 99.00	4.728	4.732	-0.004	1.076	2153250		2.88(1.38-4.15)	99.7	11095	
D 33 13C8 FOSA										
506.00 > 78.00	4.750	4.747	0.003	1.176	3671593	2.40		96.0	5781	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.750	4.749	0.001	1.000	13439661	10.4		104	3987	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.750	4.752	-0.002	0.998	12463138	9.30	Target=10.36	93.0	2813	
513.00 > 169.00	4.758	4.752	0.006	1.000	1336546		9.32(5.18-15.54)	93.0	182	
D 39 13C2 PFDA										
515.00 > 470.00	4.758	4.754	0.004	1.178	3469185	2.30		91.8	10434	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.758	4.755	0.003	1.000	5175859	9.42		98.3	10904	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.758	4.755	0.003	1.178	806507	2.24		93.4	3302	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.914	4.912	0.002	1.217	1547401	2.74		110	1995	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.914	4.915	-0.001	1.000	5113067	11.3		113	78321	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.037	5.037	0.0	1.146	5496367	9.67	Target=2.97	100	9932	
599.00 > 99.00	5.037	5.037	0.0	1.146	1839265		2.99(1.49-4.46)	100	7145	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.064	5.060	0.004	1.000	9119579	10.8	Target=7.56	108	3919	
563.00 > 169.00	5.064	5.060	0.004	1.000	1129556		8.07(3.78-11.34)	108	3878	
D 43 13C2 PFUnA										
565.00 > 520.00	5.064	5.062	0.002	1.254	2928045	2.27		90.9	17976	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.073	5.071	0.002	1.256	1442788	2.51		101	1815	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.073	5.075	-0.002	1.000	4655395	11.4		114	29727	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.191	5.191	0.0	1.181	20853238	9.97		106	16773	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.200	5.198	0.002	1.288	5098711	13.2		106	4022	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.209	5.209	0.0	1.002	4664590	10.9		109	3922	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.218	5.215	0.003	1.292	1405336	2.91		116	342	
50 NMeFOSA										
512.00 > 169.00	5.227	5.220	0.007	1.002	5283834	9.98		99.8	575	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.338	5.338	0.0	0.998	10185088	9.34	Target=7.18	93.4	1621	
613.00 > 169.00	5.338	5.338	0.0	0.998	1473588		6.91(3.59-10.76)	93.4	6303	
D 56 13C2 PFDoA										
615.00 > 570.00	5.347	5.339	0.008	1.324	2776822	2.43		97.3	8932	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.366	5.362	0.004	1.128	4543056	10.5		109	13790	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.366	5.364	0.002	1.329	6583228	14.0		112	5437	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.382	5.376	0.006	1.003	5649039	10.5		105	8403	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.393	5.387	0.005	1.335	1424762	2.91		116	237	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.403	5.395	0.008	1.002	5671182	9.93		99.3	716	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.566	5.562	0.004	1.266	2062682	10.4	Target=0.79	108	6543	
699.00 > 99.00	5.566	5.562	0.004	1.266	2525754		0.82(0.39-1.18)	108	5502	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.603	5.601	0.002	1.048	7988248	9.11	Target=6.63	91.1	1158	
663.00 > 169.00	5.603	5.601	0.002	1.048	1263743		6.32(3.32-9.95)	91.1	2612	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.839	5.835	0.004	1.446	2032789	2.72		109	8698	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.839	5.838	0.001	1.000	7387808	9.09	Target=8.46	90.9	1732	
713.00 > 219.00	5.839	5.838	0.001	1.000	796230		9.28(4.23-12.69)	90.9	5291	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.263	6.257	0.006	1.551	1345151	2.17		87.0	4739	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.263	6.258	0.005	1.000	6259487	13.6	Target=7.92	136	905	
813.00 > 169.00	6.263	6.258	0.005	1.000	596376		10.50(3.96-11.88)	136	3882	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.656	6.655	0.001	1.063	3042541	11.5	Target=10.24	115	558	
913.00 > 169.00	6.656	6.655	0.001	1.063	294429		10.33(5.12-15.36)	115	2226	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00022 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:52:57 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Injection Date: 04-Jun-2020 12:51:36 Instrument ID: A15

Lims ID: IC L7 Full

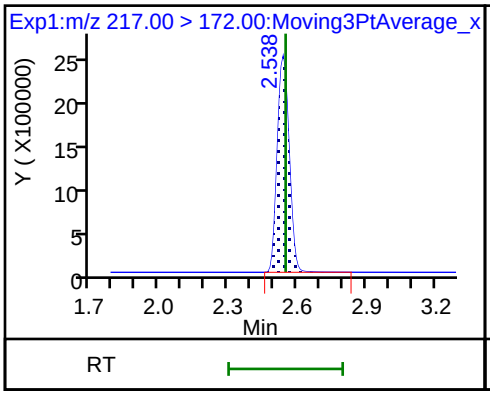
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 7 Worklist Smp#: 8

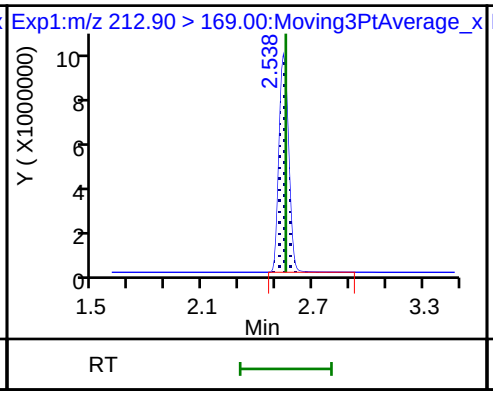
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

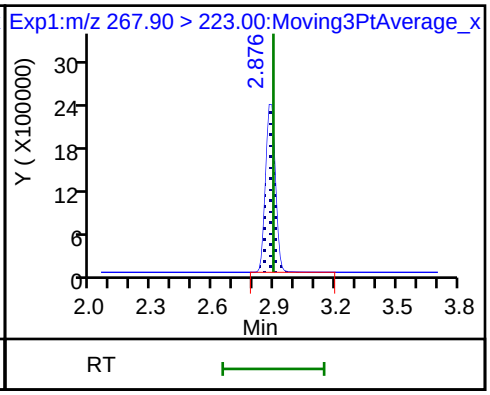
D 1 13C4 PFBA



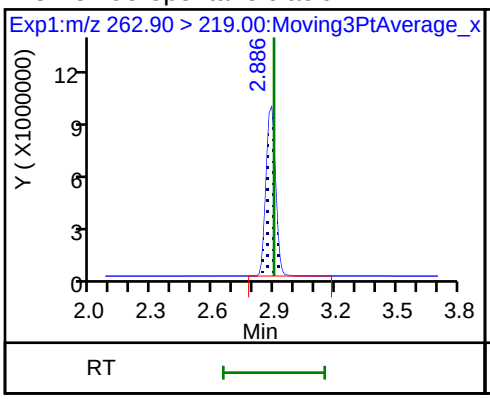
2 Perfluorobutanoic acid



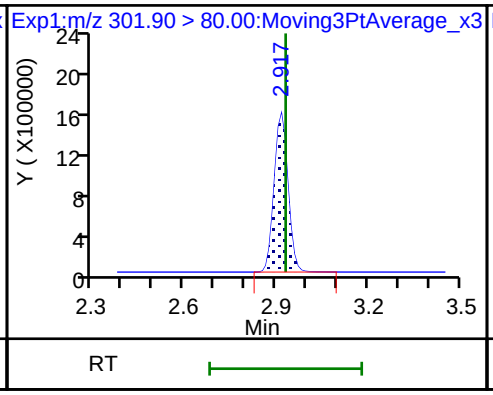
D 4 13C5 PFPeA



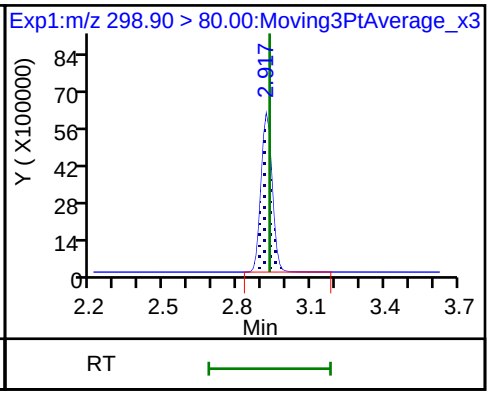
5 Perfluoropentanoic acid



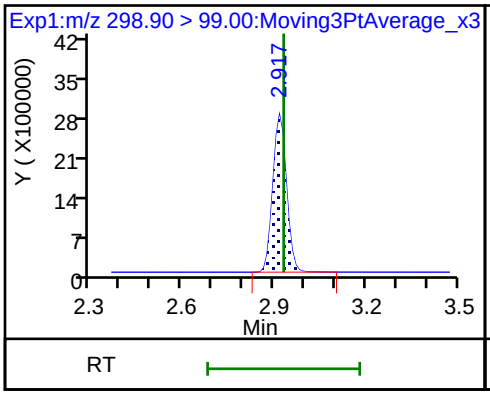
D 9 13C3 PFBS



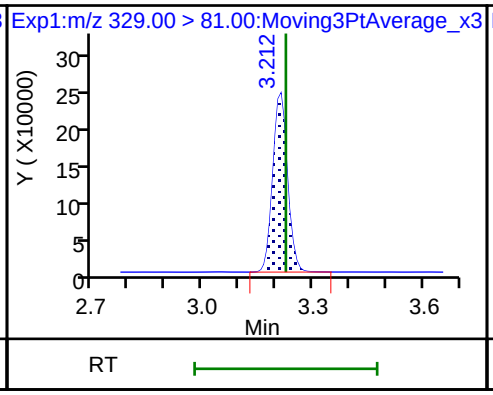
6 Perfluorobutanesulfonic acid



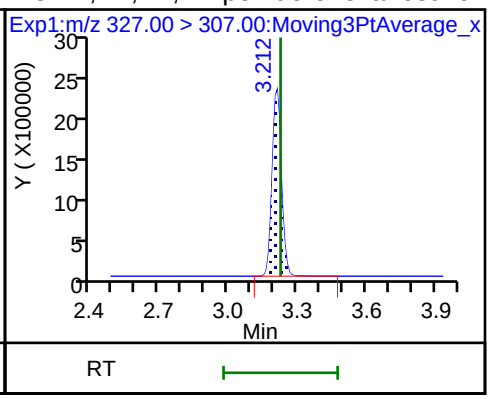
6 Perfluorobutanesulfonic acid



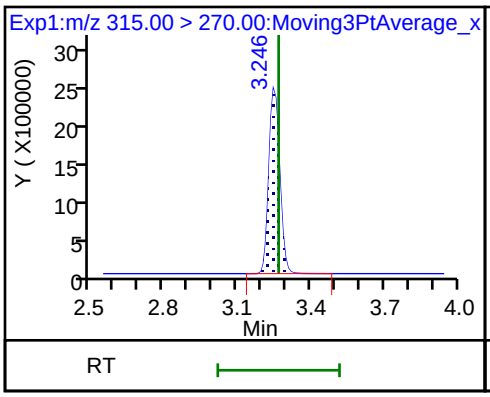
D 7 M2-4:2 FTS



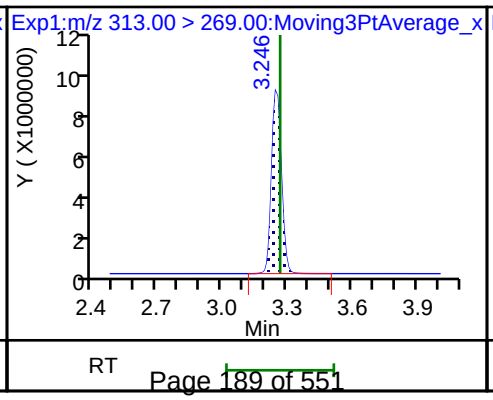
8 1H,1H,2H,2H-perfluorohexanesulfo



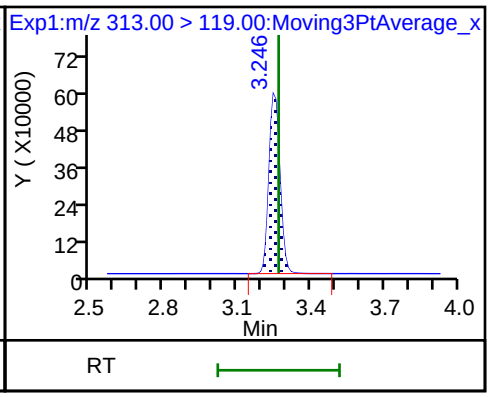
D 11 13C2 PFHxA



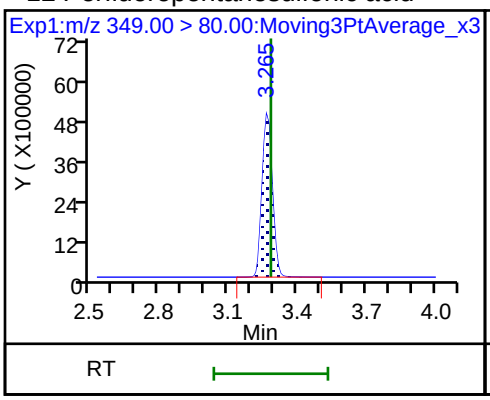
10 Perfluorohexanoic acid



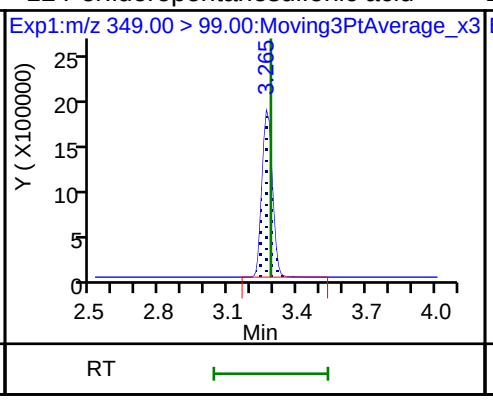
10 Perfluorohexanoic acid



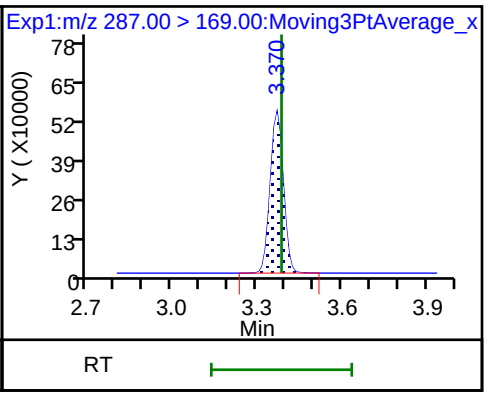
12 Perfluoropentanesulfonic acid



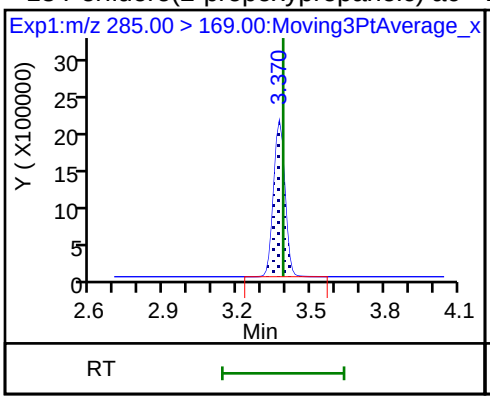
12 Perfluoropentanesulfonic acid



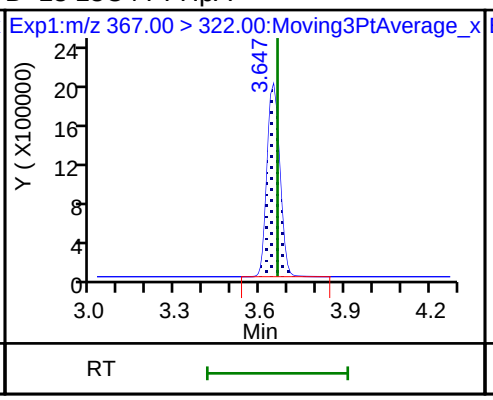
D 14 13C3 HFPO-DA



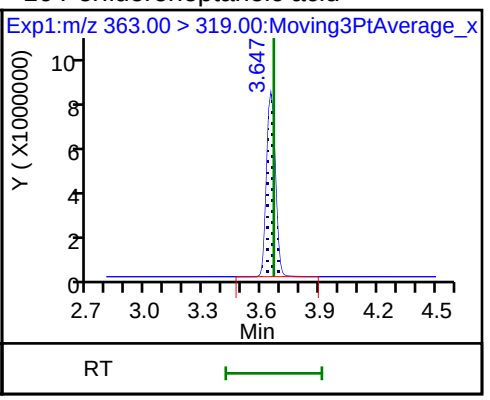
13 Perfluoro(2-propoxypropanoic) ac



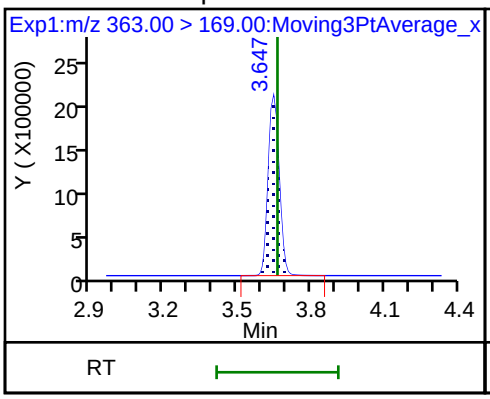
D 18 13C4 PFHpA



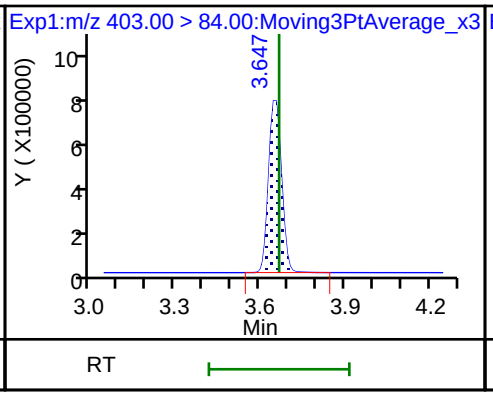
16 Perfluoroheptanoic acid



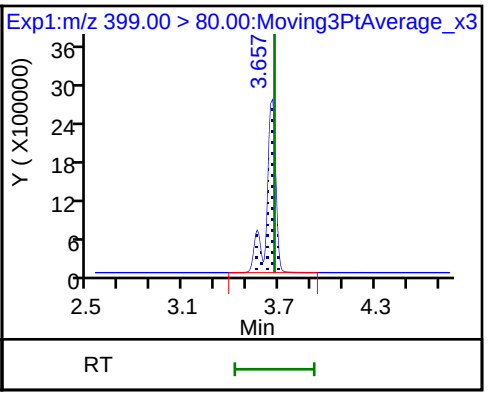
16 Perfluoroheptanoic acid



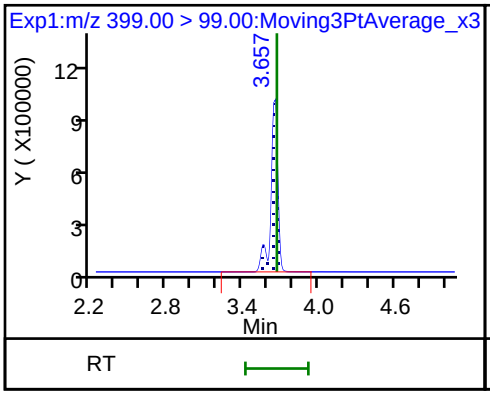
D 17 18O2 PFHxS



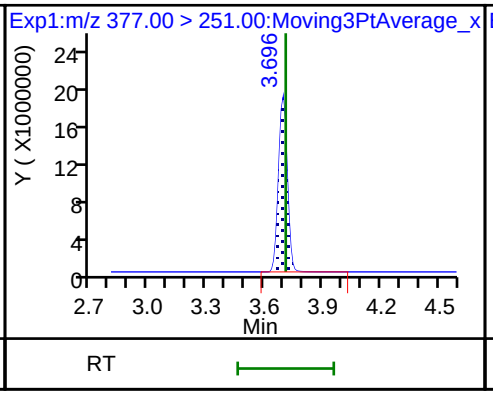
15 Perfluorohexanesulfonic acid



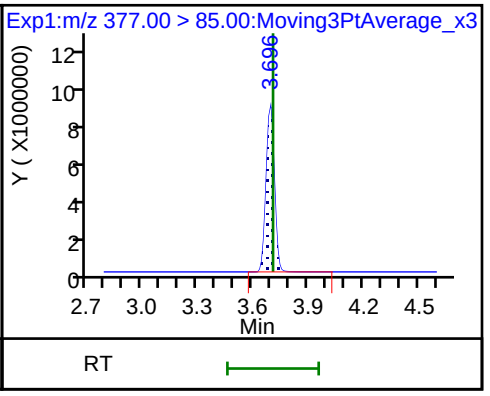
15 Perfluorohexanesulfonic acid



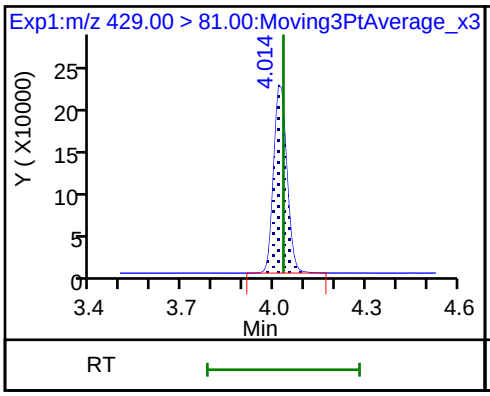
19 DONA



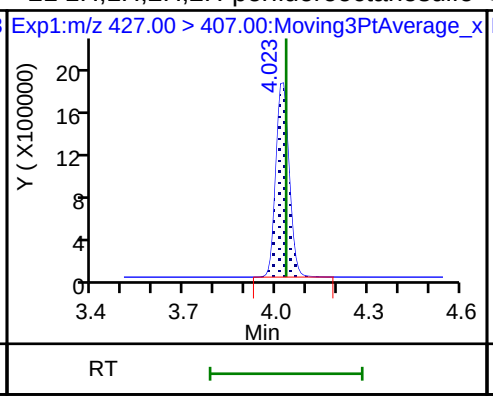
19 DONA



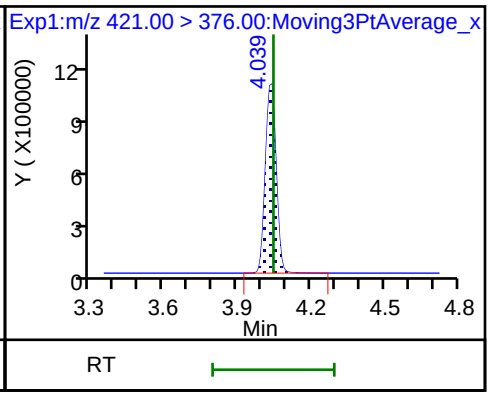
D 20 M2-6:2 FTS



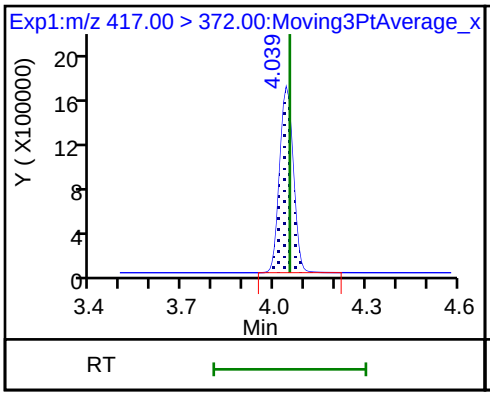
21 1H,1H,2H,2H-perfluorooctanesulfo



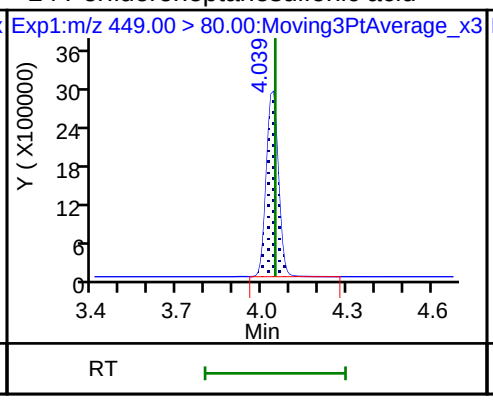
$ 26 13C8 PFOA



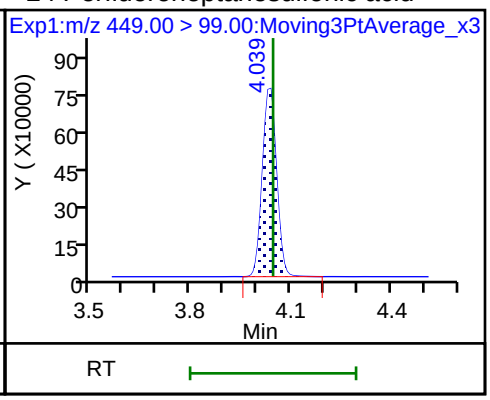
D 25 13C4 PFOA



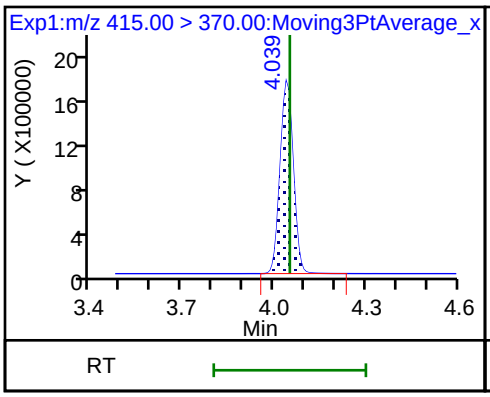
24 Perfluoroheptanesulfonic acid



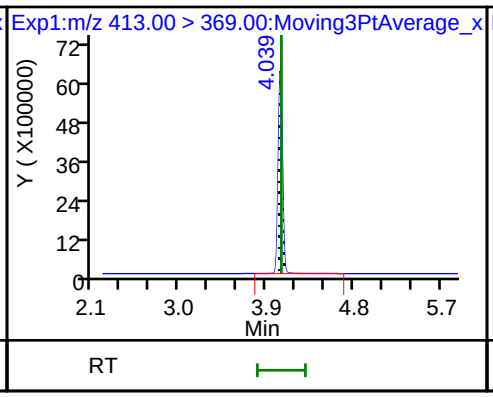
24 Perfluoroheptanesulfonic acid



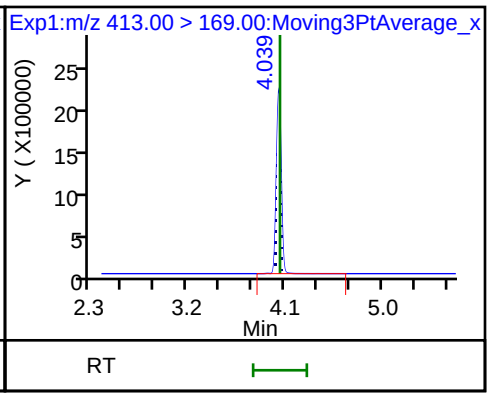
* 23 13C2 PFOA



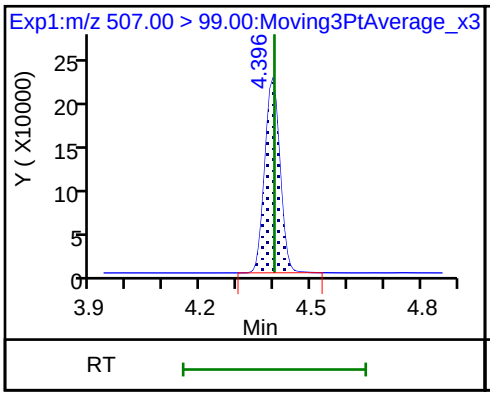
22 Perfluorooctanoic acid



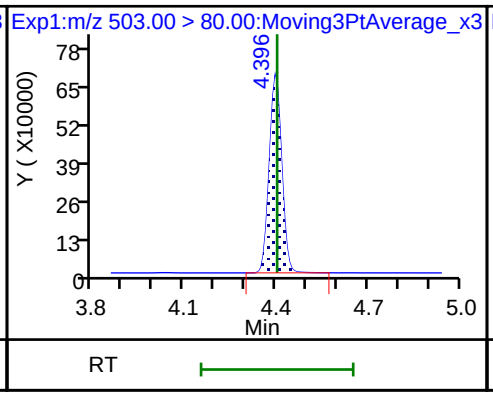
22 Perfluorooctanoic acid



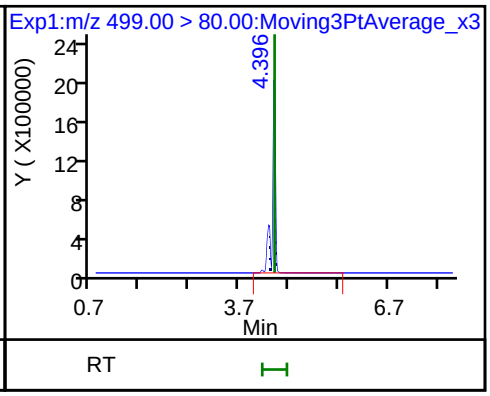
$ 28 13C8 PFOS



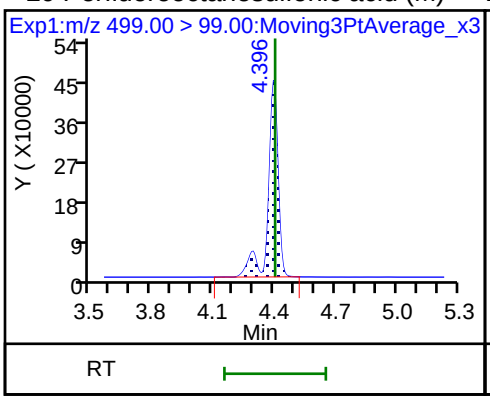
D 27 13C4 PFOS



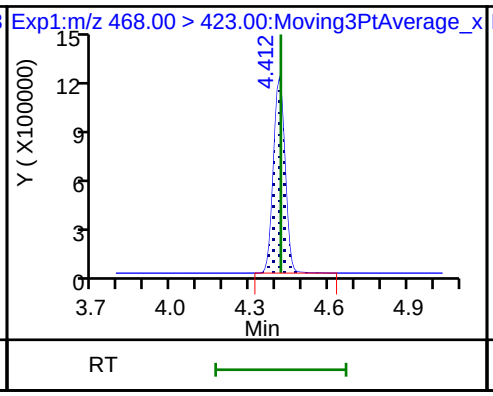
29 Perfluorooctanesulfonic acid



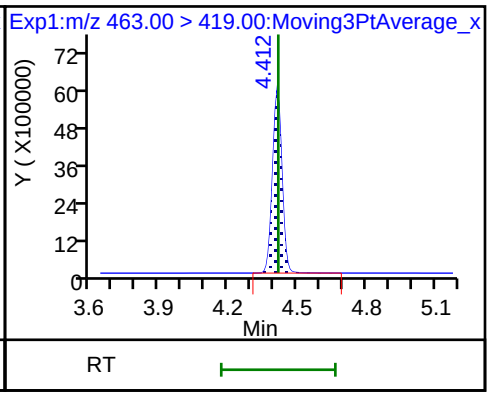
29 Perfluorooctanesulfonic acid (M)



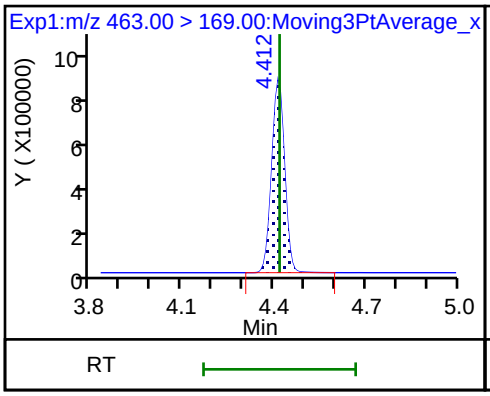
D 30 13C5 PFNA



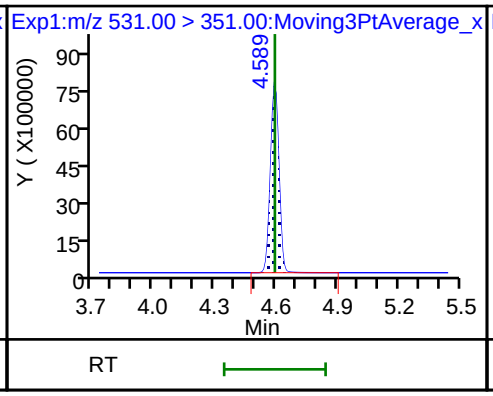
31 Perfluorononanoic acid



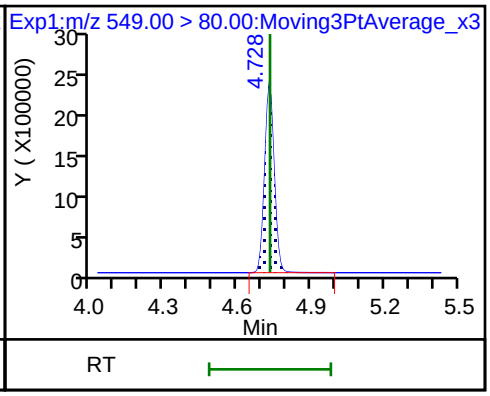
31 Perfluorononanoic acid



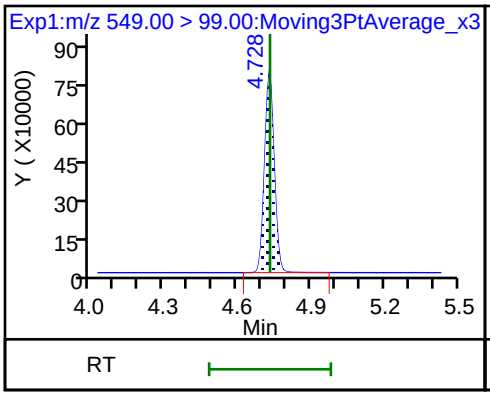
32 9-Chlorohexadecafluoro-3-oxanona



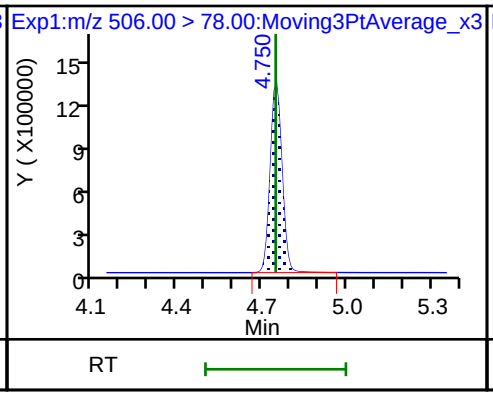
35 Perfluorononanesulfonic acid



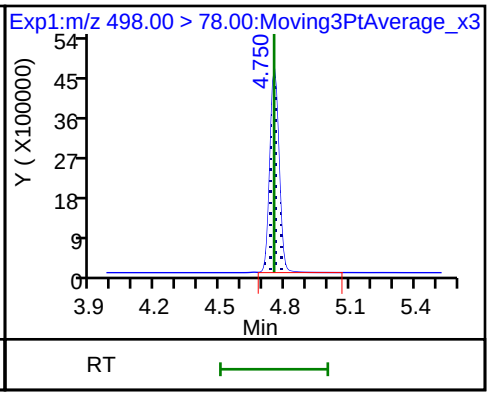
35 Perfluorononanesulfonic acid



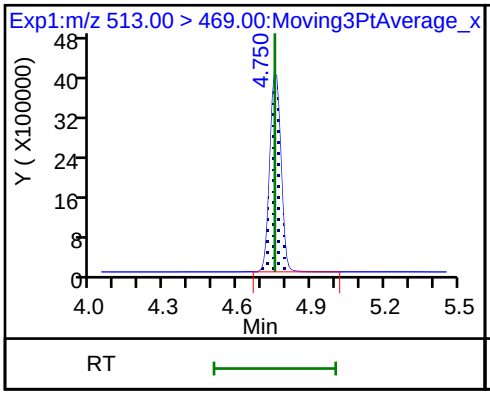
D 33 13C8 FOSA



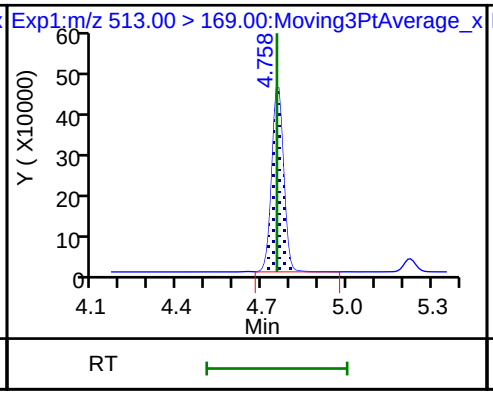
34 Perfluorooctanesulfonamide



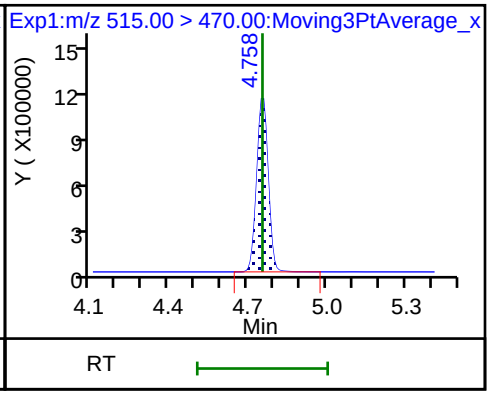
37 Perfluorodecanoic acid



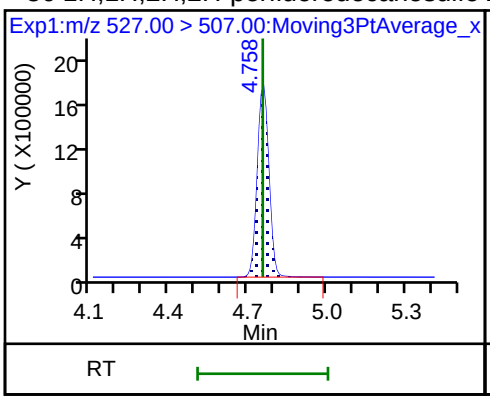
37 Perfluorodecanoic acid



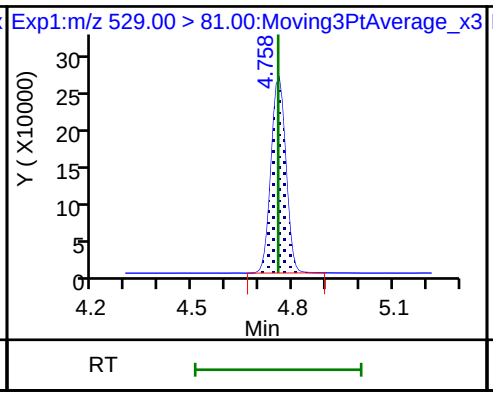
D 39 13C2 PFDA



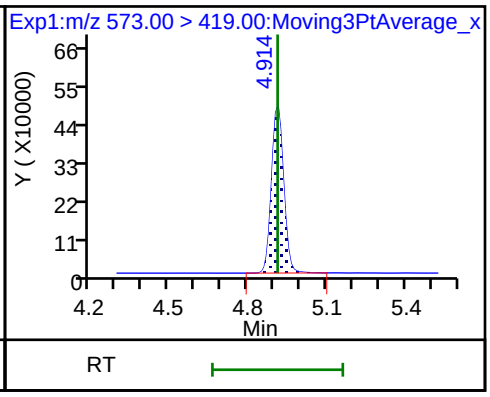
36 1H,1H,2H,2H-perfluorodecanesulfo



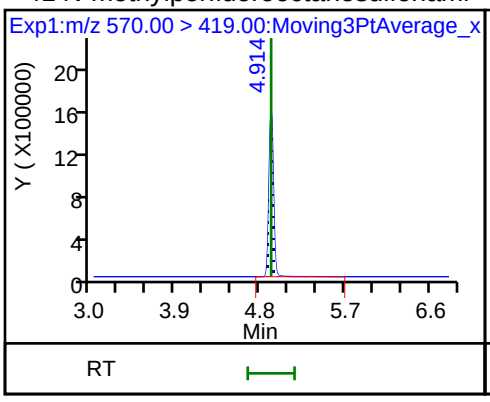
D 38 M2-8:2 FTS



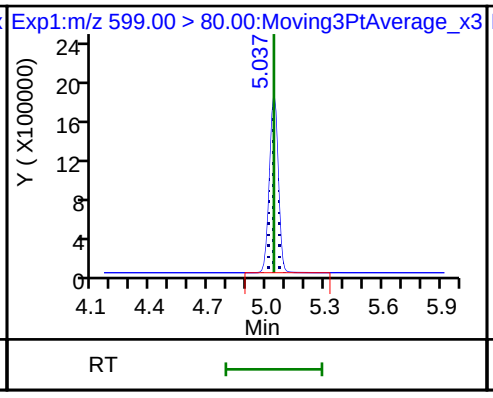
D 40 d3-NMeFOSAA



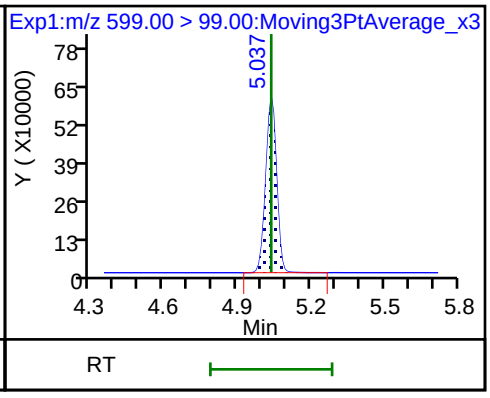
41 N-methylperfluorooctanesulfonami



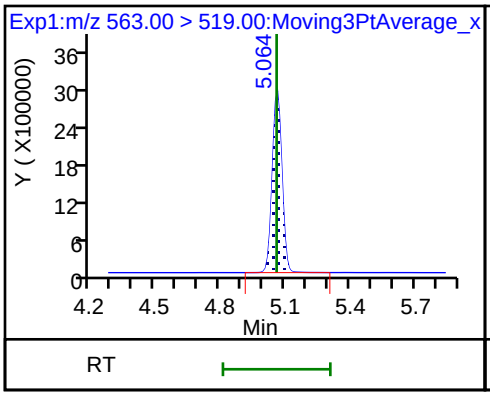
42 Perfluorodecanesulfonic acid



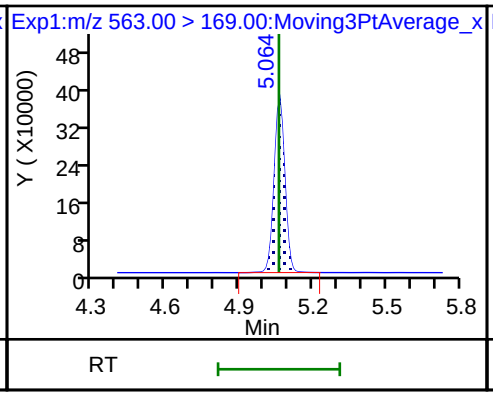
42 Perfluorodecanesulfonic acid



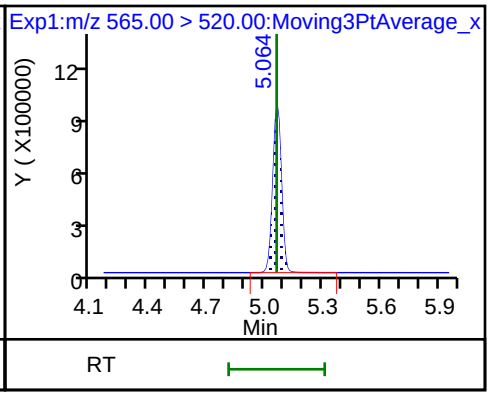
45 Perfluoroundecanoic acid



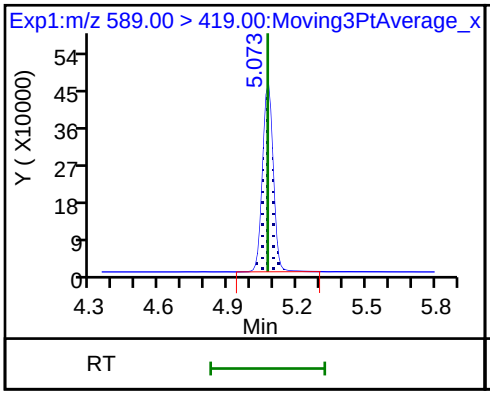
45 Perfluoroundecanoic acid



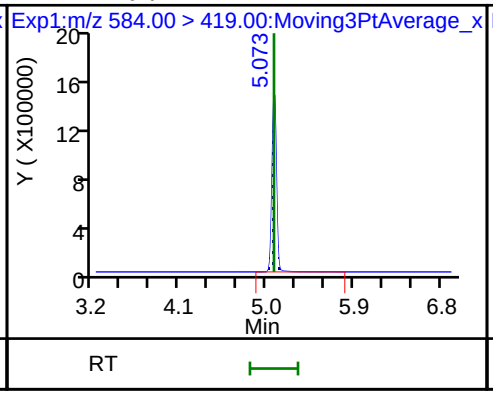
D 43 13C2 PFUnA



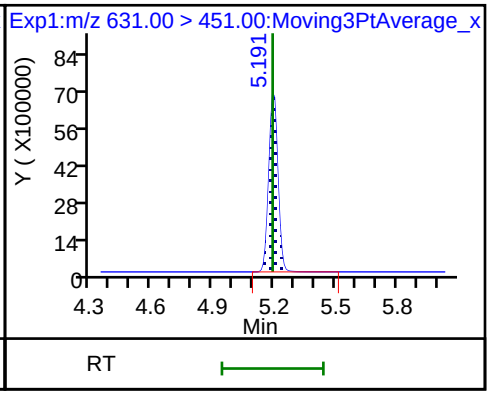
D 44 d5-NEtFOSAA



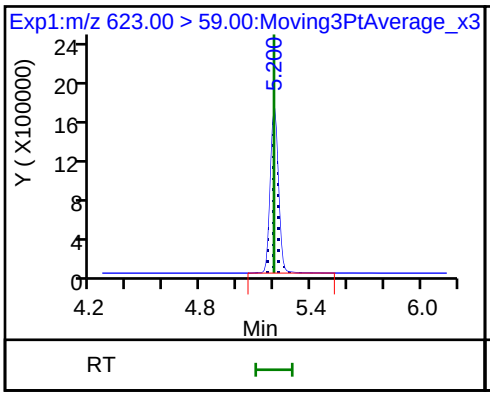
46 N-ethylperfluorooctanesulfonamid



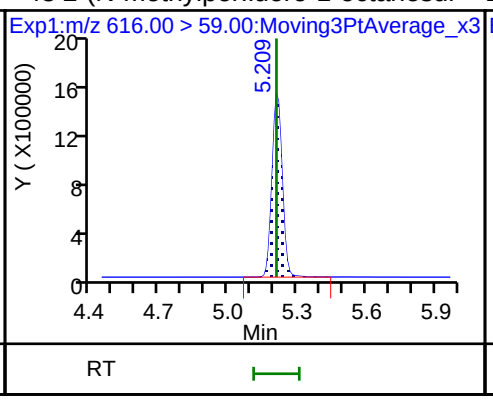
51 11-Chloroeicosafluoro-3-oxaundec



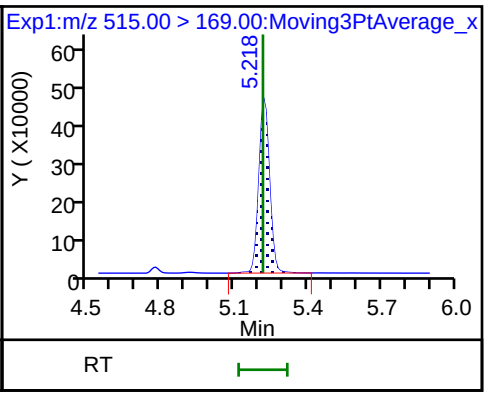
D 47 d7-N-MeFOSE-M



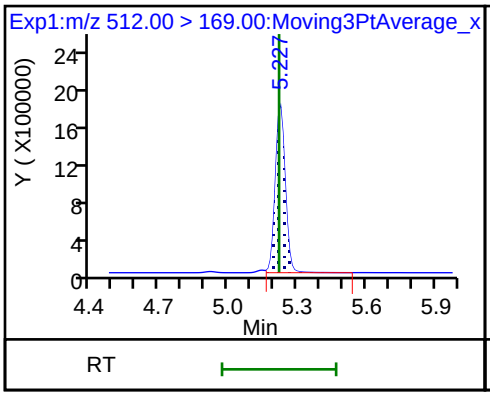
48 2-(N-methylperfluoro-1-octanesul



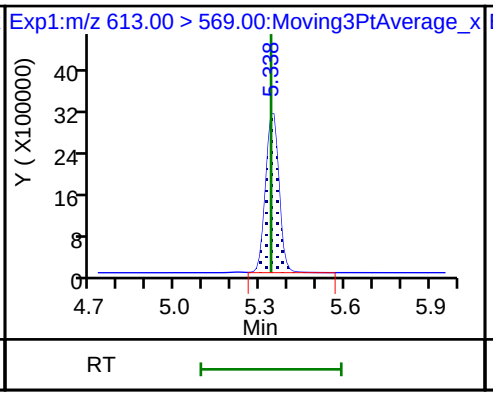
D 49 d-N-MeFOSA-M



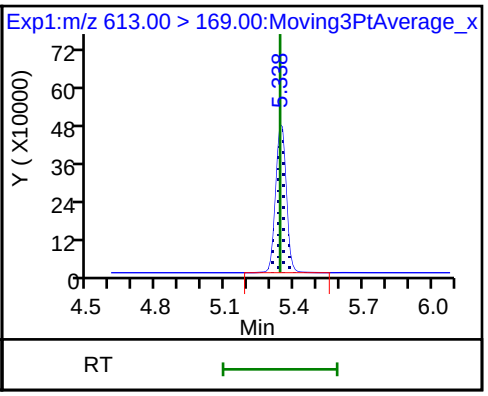
50 NMeFOSA



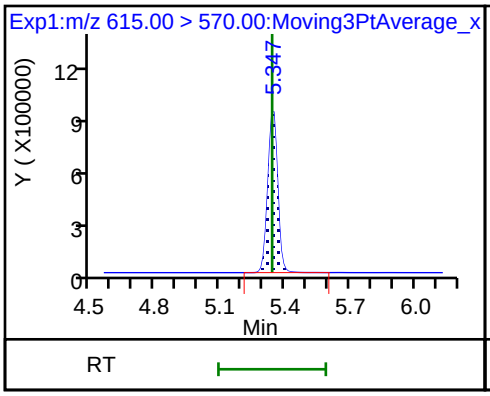
57 Perfluorododecanoic acid



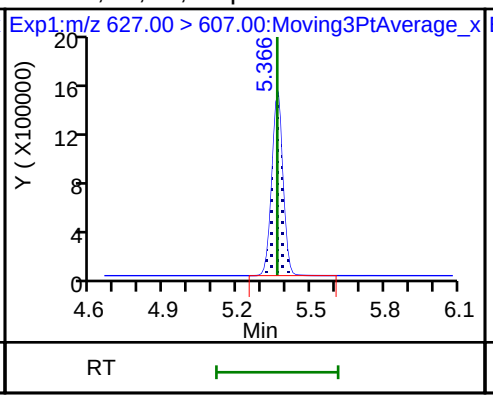
57 Perfluorododecanoic acid



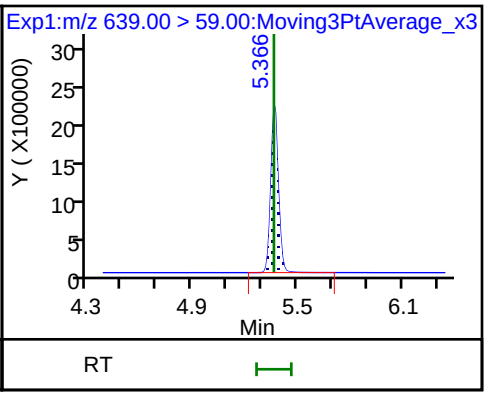
D 56 13C2 PFDoA



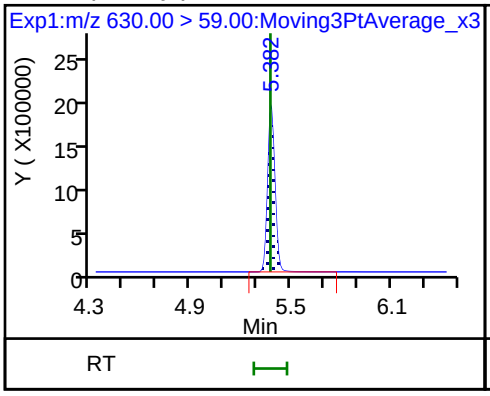
58 1H,1H,2H,2H-perfluorododecanesul



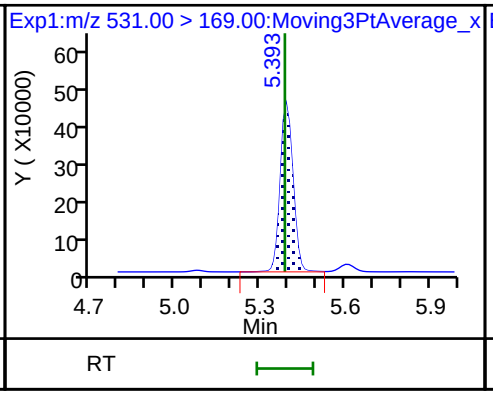
D 52 d9-N-EtFOSE-M



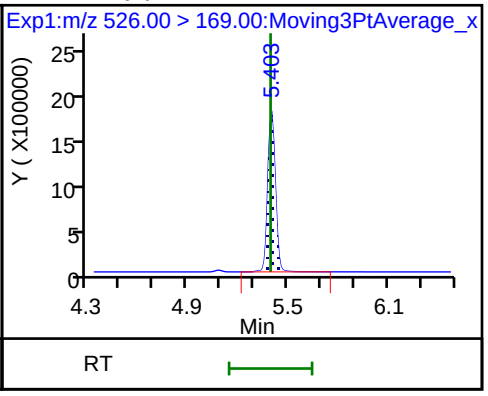
53 2-(N-ethylperfluoro-1-octanesulf



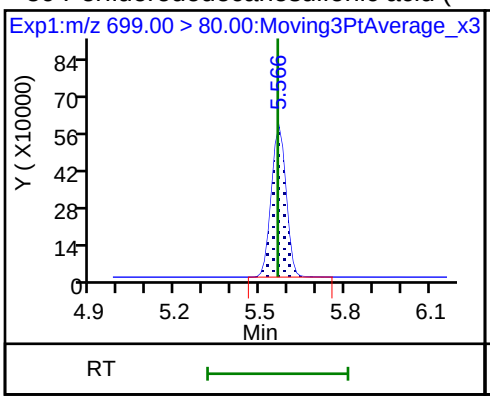
D 54 d-N-EtFOSA-M



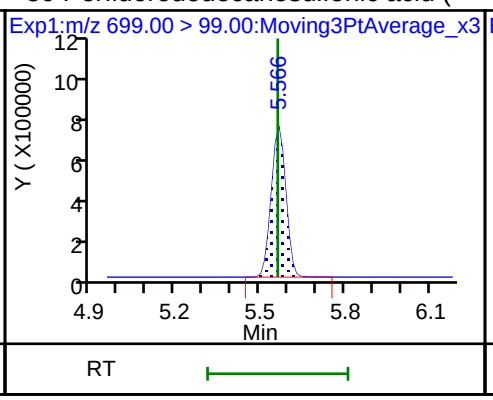
55 N-ethylperfluoro-1-octanesulfona



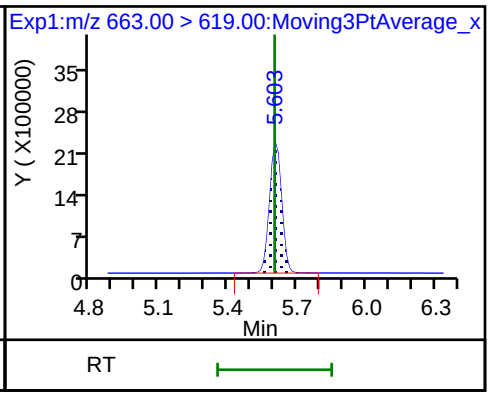
59 Perfluorododecanesulfonic acid (



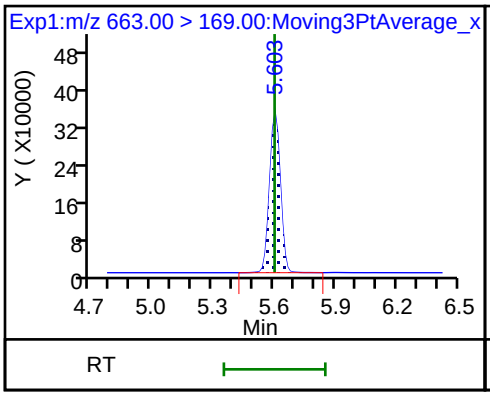
59 Perfluorododecanesulfonic acid (



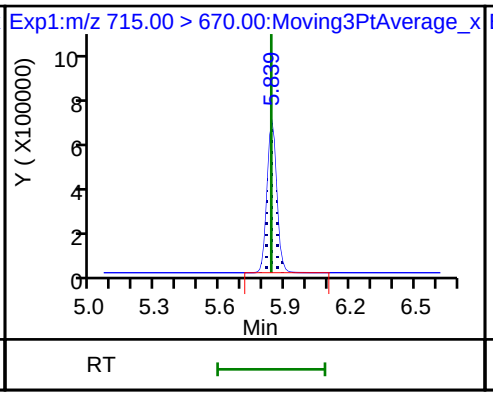
60 Perfluorotridecanoic acid



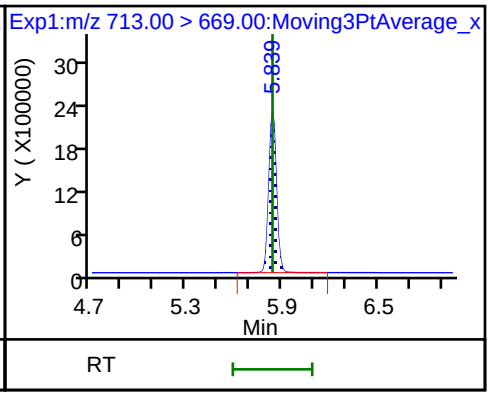
60 Perfluorotridecanoic acid



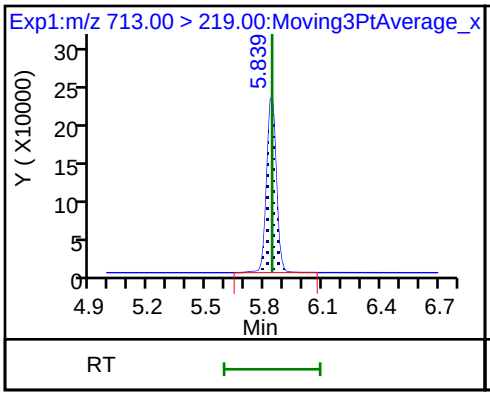
D 61 13C2 PFTeDA



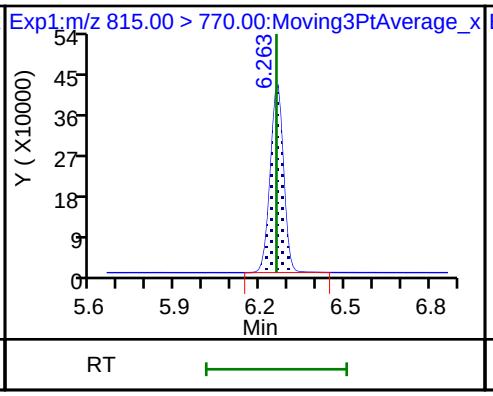
62 Perfluorotetradecanoic acid



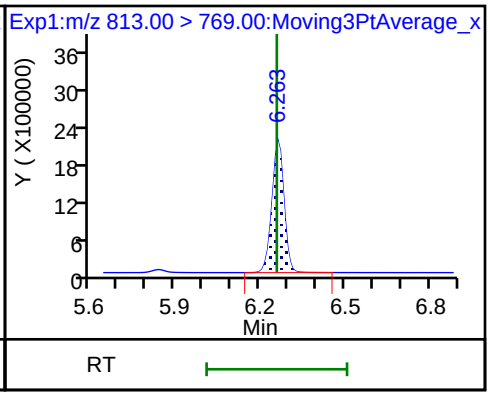
62 Perfluorotetradecanoic acid



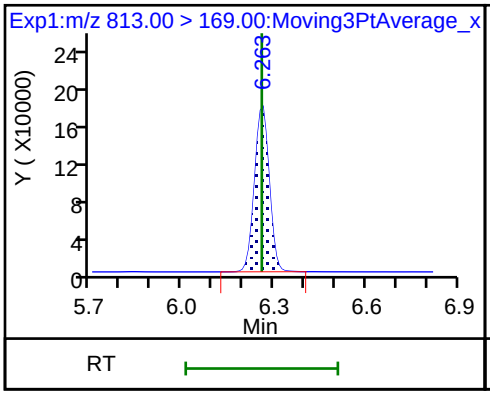
D 64 13C2 PFHxDA



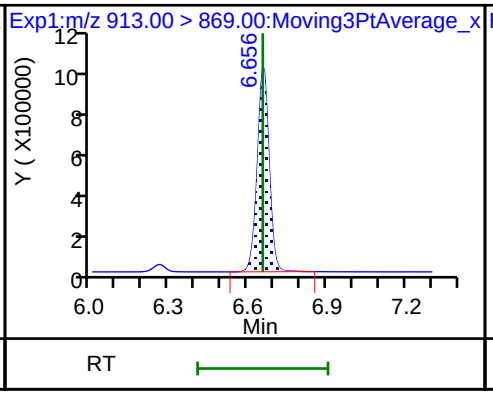
63 Perfluorohexadecanoic acid



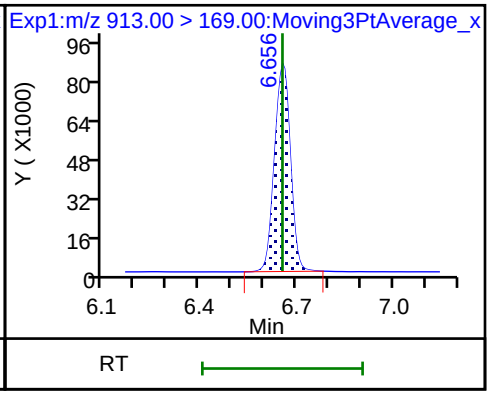
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

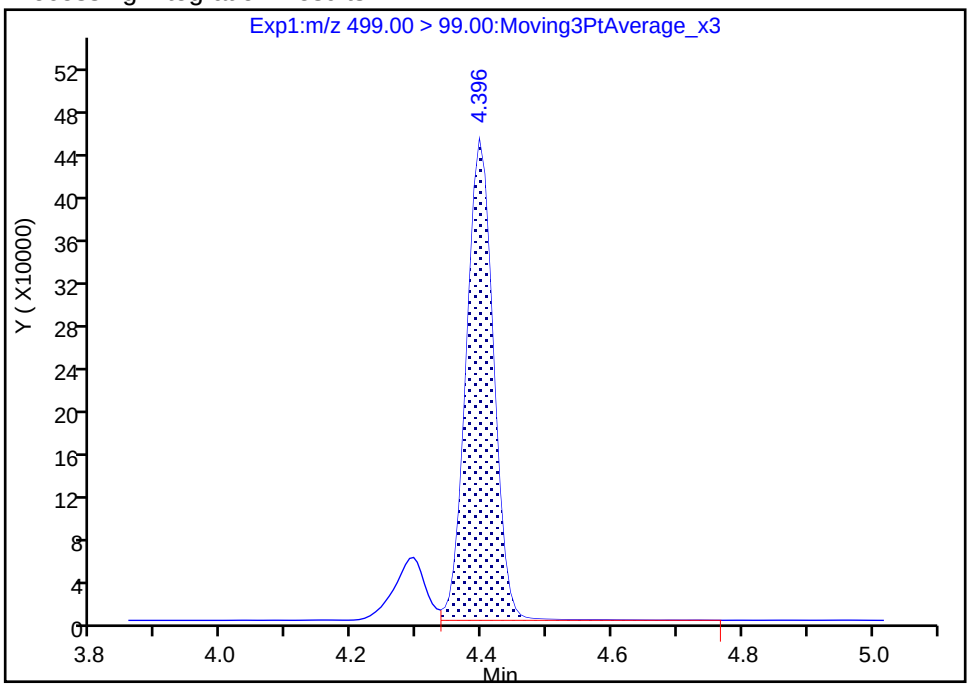
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d
Injection Date: 04-Jun-2020 12:51:36 Instrument ID: A15
Lims ID: IC L7 Full
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 7 Worklist Smp#: 8
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

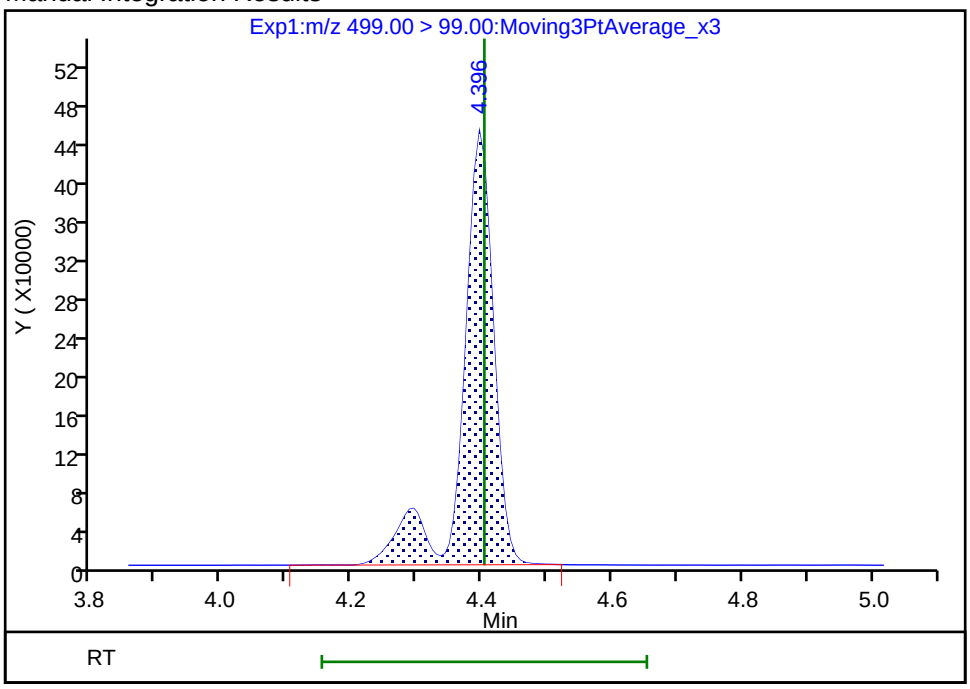
Processing Integration Results

RT: 4.40
Area: 1299029
Amount: 9.634828
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 1485107
Amount: 9.634828
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:42:06
Audit Action: Manually Integrated Audit Reason: Isomers

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383200

SDG No.: 70132489

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 20:49 Calibration End Date: 06/03/2020 21:52 Calibration ID: 50353

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-383200/2	2020.06.03_A18_PFC_ICAL_0008.d
Level 2	IC 320-383200/3	2020.06.03_A18_PFC_ICAL_0009.d
Level 3	IC 320-383200/4	2020.06.03_A18_PFC_ICAL_0010.d
Level 4	IC 320-383200/5	2020.06.03_A18_PFC_ICAL_0011.d
Level 5	IC 320-383200/6	2020.06.03_A18_PFC_ICAL_0012.d
Level 6	IC 320-383200/7	2020.06.03_A18_PFC_ICAL_0013.d
Level 7	IC 320-383200/9	2020.06.03_A18_PFC_ICAL_0015.d

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorobutanoic acid	0.8019 0.9024	0.8193 0.8859	0.8263	0.8573	0.8687	AveID		0.8517				4.3		35.0			
Perfluoropentanoic acid (PFPeA)	+++++ 0.9497	1.0354 0.9376	0.9324	0.9780	0.9448	AveID		0.9630				4.0		35.0			
Perfluorobutanesulfonic acid (PFBS)	0.9249 1.0047	0.9207 1.0270	0.9418	1.0002	1.0064	AveID		0.9751				4.5		35.0			
4:2 FTS	1.6907 2.3416	1.9872 2.1858	2.1093	2.1774	2.1829	AveID		2.0964				9.9		35.0			
Perfluorohexanoic acid (PFHxA)	0.9479 0.9453	0.9674 0.9249	0.9001	0.9010	0.9236	AveID		0.9300				2.7		35.0			
Perfluoropentanesulfonic acid (PFPeS)	0.6666 0.7484	0.6851 0.7635	0.6954	0.7382	0.7205	AveID		0.7168				5.0		50.0			
HFPO-DA (GenX)	0.8702 0.9509	0.9042 1.0021	0.9684	0.9394	0.9841	AveID		0.9456				4.9		35.0			
Perfluoroheptanoic acid	0.9935 0.9990	0.9547 0.9981	0.9429	0.9880	1.0233	AveID		0.9856				2.8		35.0			
Perfluorohexanesulfonic acid (PFHxS)	1.3378 1.0991	1.2058 1.1272	1.0631	1.1192	1.1065	AveID		1.1512				8.1		35.0			
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	14.372 17.449	14.534 16.535	15.059	16.013	17.381	AveID		15.906				8.1		50.0			
6:2 FTS	1.8508 2.0569	2.0154 2.0219	1.9247	2.0764	2.0726	AveID		2.0027				4.2		35.0			
Perfluoroheptanesulfonic Acid (PFHpS)	1.3775 1.5944	1.4550 1.5681	1.5003	1.5049	1.5973	AveID		1.5139				5.3		50.0			
Perfluorooctanoic acid (PFOA)	1.1495 0.9389	1.1388 0.9147	1.0064	0.9506	0.9889	AveID		1.0125				9.4		35.0			
Perfluorooctanesulfonic acid (PFOS)	0.9770 1.0531	0.9521 1.0575	0.9547	1.0224	1.0433	AveID		1.0086				4.6		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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383200

SDG No.: 70132489

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 20:49 Calibration End Date: 06/03/2020 21:52 Calibration ID: 50353

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluorononanoic acid (PFNA)	0.9194 0.9949	0.9736 0.9628	0.9260	0.9613	0.9917	AveID		0.9614				3.1		35.0			
F-53B Major	4.4527 5.3036	4.5868 5.3385	4.7322	4.9075	5.3169	AveID		4.9483				7.6		50.0			
Perfluorooctanesulfonamide (FOSA)	0.8701 0.9445	0.8832 0.9676	0.8968	0.9191	0.9487	AveID		0.9186				4.0		35.0			
Perfluorononanesulfonic acid (PFNS)	0.7420 0.7953	0.7378 0.7947	0.7663	0.8018	0.8318	AveID		0.7814				4.4		50.0			
Perfluorodecanoic acid (PFDA)	0.8745 0.9254	0.8157 0.9571	0.8879	0.9013	0.9031	AveID		0.8950				4.9		35.0			
8:2 FTS	1.4009 1.6108	1.4555 1.6041	1.5518	1.5256	1.6020	AveID		1.5358				5.3		35.0			
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	0.6328 0.7902	0.6563 0.8079	0.6220	0.7199	0.7272	AveID		0.7080				10.5		35.0			
Perfluorodecanesulfonic acid (PFDS)	0.5477 0.5877	0.4853 0.5809	0.6166	0.5858	0.6421	AveID		0.5780				8.7		50.0			
Perfluoroundecanoic acid (PFUnA)	0.7220 0.7696	0.7170 0.8137	0.6352	0.7375	0.7899	AveID		0.7407				7.9		35.0			
NEtFOSAA	0.6641 0.7861	0.7162 0.8055	0.6143	0.6671	0.6617	AveID		0.7021				10.1		35.0			
NMeFOSE	0.8294 0.9717	1.0281 1.0323	0.9797	1.0147	1.0202	AveID		0.9823				7.3		35.0			
F-53B Minor	4.7166 5.9962	5.0124 5.9686	5.1338	5.4242	5.7346	AveID		5.4266				9.1		50.0			
NMeFOSA	0.8452 0.9382	0.8352 0.9056	0.8767	1.0445	1.0188	AveID		0.9235				8.9		35.0			
Perfluorododecanoic acid (PFDoA)	0.9423 0.8758	1.0016 0.9481	0.9196	0.8890	0.9426	AveID		0.9313				4.5		35.0			
NEtFOSE	0.8747 1.0051	0.9981 1.0246	1.0145	1.1065	1.0024	AveID		1.0037				6.8		35.0			
10:2 FTS	1.1552 1.3085	1.1258 1.4273	1.0412	1.2112	1.2325	AveID		1.2145				10.4		50.0			
NEtFOSA	0.9793 1.0043	1.0071 1.0191	1.0446	1.1146	1.1463	AveID		1.0450				5.9		35.0			
Perfluorododecanesulfonic acid (PFDoS)	0.5279 0.5449	0.5197 0.5626	0.5077	0.5251	0.5581	AveID		0.5352				3.8		50.0			
Perfluorotridecanoic acid (PFTriA)	0.8729 0.8666	0.8572 0.8968	0.8776	0.8908	0.8575	AveID		0.8742				1.8		50.0			
Perfluorotetradecanoic acid (PFTeA)	0.1363 0.1258	0.1385 0.1111	0.1335	0.1358	0.1509	AveID		0.1331				9.2		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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383200

SDG No.: 70132489

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 20:49 Calibration End Date: 06/03/2020 21:52 Calibration ID: 50353

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Perfluoro-n-hexadecanoic acid (PFHxDA)	1.5192 0.8820	1.2609 0.8170	0.9333	0.9554	0.8469	L2ID	0.0168	0.8728							0.9970		0.9900
Perfluoro-n-octadecanoic acid (PFODA)	0.5183 0.5630	0.4903 0.5607	0.5042	0.5759	0.5415	AveID		0.5363				6.1		50.0			
13C4 PFBA	1.2603 1.2817	1.1867 1.3298	1.1954	1.2377	1.2380	Ave		1.2471				4.0		50.0			
13C5 PFPeA	1.1376 1.1357	1.0810 1.1859	1.0806	1.0780	1.1286	Ave		1.1182				3.6		50.0			
13C3 PFBS	0.9049 0.8705	0.8730 0.8947	0.8626	0.8631	0.8544	Ave		0.8747				2.1		50.0			
M2-4:2 FTS	0.1541 0.1348	0.1494 0.1376	0.1400	0.1419	0.1373	Ave		0.1422				4.9		50.0			
13C2 PFHxA	1.1634 1.1038	1.0455 1.1651	1.0899	1.1217	1.1068	Ave		1.1137				3.8		50.0			
13C3 HFPO-DA	0.2195 0.2332	0.2053 0.2366	0.2015	0.2141	0.2131	Ave		0.2176				6.1		50.0			
13C4 PFHpA	1.0316 0.9639	0.9747 1.0076	0.9820	0.9859	0.9736	Ave		0.9885				2.4		50.0			
18O2 PFHxS	0.4292 0.4072	0.4205 0.4129	0.4189	0.4219	0.4107	Ave		0.4173				1.8		50.0			
M2-6:2 FTS	0.1275 0.1058	0.1223 0.1072	0.1175	0.1144	0.1077	Ave		0.1146				7.3		50.0			
13C4 PFOA	1.0540 0.9902	0.9529 0.9842	0.9900	1.0012	0.9602	Ave		0.9904				3.3		50.0			
13C4 PFOS	0.1840 0.1716	0.1789 0.1782	0.1771	0.1800	0.1702	Ave		0.1771				2.7		50.0			
13C5 PFNA	0.8201 0.8160	0.7762 0.8242	0.7772	0.8204	0.8142	Ave		0.8069				2.6		50.0			
13C8 FOSA	0.4149 0.3886	0.3997 0.3805	0.3941	0.3916	0.3809	Ave		0.3929				3.0		50.0			
13C2 PFDA	0.9563 0.8408	0.8701 0.7956	0.8797	0.8938	0.8651	Ave		0.8716				5.6		50.0			
M2-8:2 FTS	0.1610 0.1341	0.1526 0.1257	0.1509	0.1484	0.1407	Ave		0.1448				8.3		50.0			
d3-NMeFOSAA	0.3250 0.3260	0.3260 0.3501	0.3170	0.3044	0.3181	Ave		0.3238				4.3		50.0			
13C2 PFUnA	0.8633 0.8064	0.8059 0.7964	0.8308	0.8193	0.7860	Ave		0.8155				3.1		50.0			
d5-NEtFOSAA	0.3518 0.3106	0.3399 0.3027	0.3459	0.3354	0.3260	Ave		0.3303				5.5		50.0			

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

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383200

SDG No.: 70132489

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 20:49 Calibration End Date: 06/03/2020 21:52 Calibration ID: 50353

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
d7-N-MeFOSE-M	0.2475 0.2430	0.2059 0.2580	0.2179	0.2386	0.2243	Ave		0.2336				7.8		50.0			
d-N-MeFOSA-M	0.1779 0.1979	0.1746 0.2117	0.1721	0.1794	0.1788	Ave		0.1846				7.9		50.0			
d9-N-EtFOSE-M	0.2640 0.2823	0.2511 0.2881	0.2522	0.2569	0.2620	Ave		0.2653				5.5		50.0			
13C2 PFDoA	0.8554 0.9000	0.8155 0.8626	0.8083	0.9294	0.8590	Ave		0.8615				5.0		50.0			
d-N-EtFOSA-M	0.1842 0.2047	0.1826 0.2125	0.1771	0.1842	0.1822	Ave		0.1896				7.0		50.0			
13C2 PFTeDA	0.7400 0.7247	0.7040 0.8255	0.6609	0.7304	0.6592	Ave		0.7207				7.8		50.0			
13C2 PFHxDA	0.5144 0.5192	0.4688 0.5955	0.4932	0.4748	0.5070	Ave		0.5104				8.3		50.0			
13C8 PFOA	0.8334 0.7957	0.7890 0.8709	0.7914	0.8099	0.8307	Ave		0.8173				3.6		50.0			
13C8 PFOS	0.0641 0.0575	0.0642 0.0610	0.0612	0.0599	0.0606	Ave		0.0612				3.8		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: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383200

SDG No.: 70132489

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 20:49 Calibration End Date: 06/03/2020 21:52 Calibration ID: 50353

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-383200/2	2020.06.03_A18_PFC_ICAL_0008.d
Level 2	IC 320-383200/3	2020.06.03_A18_PFC_ICAL_0009.d
Level 3	IC 320-383200/4	2020.06.03_A18_PFC_ICAL_0010.d
Level 4	IC 320-383200/5	2020.06.03_A18_PFC_ICAL_0011.d
Level 5	IC 320-383200/6	2020.06.03_A18_PFC_ICAL_0012.d
Level 6	IC 320-383200/7	2020.06.03_A18_PFC_ICAL_0013.d
Level 7	IC 320-383200/9	2020.06.03_A18_PFC_ICAL_0015.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Perfluorobutanoic acid		AveID	80946 18727176	163497 35008146	848141	3512944	8832148	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanoic acid (PFPeA)		AveID	+++++ 17463850	188192 33040988	865102	3490065	8757231	+++++ 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorobutanesulfonic acid (PFBS)		AveID	59252 12518442	119474 24137568	616680	2526357	6242728	0.0221 4.42	0.0442 8.84	0.221	0.884	2.21
4:2 FTS		AveID	19486 4772855	46617 8348018	236912	955350	2299508	0.0234 4.67	0.0467 9.34	0.234	0.934	2.34
Perfluorohexanoic acid (PFHxA)		AveID	88323 16894492	170072 32023963	842357	3345961	8394935	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoropentanesulfonic acid (PFPeS)		AveID	45313 9894310	94329 19039998	483147	1978433	4742114	0.0235 4.69	0.0469 9.38	0.235	0.938	2.35
HFPO-DA (GenX)		AveID	15300 3590021	31217 7044956	167575	665757	1722088	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoroheptanoic acid		AveID	82079 15591324	156473 29883875	795088	3224792	8182409	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorohexanesulfonic acid (PFHxS)		AveID	41851 6594631	77581 12586480	347990	1422679	3396127	0.0228 4.55	0.0455 9.10	0.228	0.910	2.28
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)		AveID	199475 45673831	411783 82476142	2157561	8989122	22889387	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
6:2 FTS		AveID	17921 3339948	39304 6103915	184027	745322	1737376	0.0237 4.74	0.0474 9.48	0.237	0.948	2.37
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	19322 4217515	41663 7904644	217240	853750	2125936	0.0238 4.76	0.0476 9.52	0.238	0.952	2.38
Perfluorooctanoic acid (PFOA)		AveID	97039 15053618	182461 26753293	855494	3150668	7798451	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorooctanesulfonic acid (PFOS)		AveID	13358 2715602	26575 5196576	134752	565411	1353615	0.0232 4.64	0.0464 9.28	0.232	0.928	2.32
Perfluorononanoic acid (PFNA)		AveID	60388 13145750	127081 23580537	617917	2610945	6631589	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383200

SDG No.: 70132489

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 20:49 Calibration End Date: 06/03/2020 21:52 Calibration ID: 50353

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
F-53B Major		AveID	61145 13734790	128578 26345649	670814	2725619	6927774	0.0233 4.66	0.0466 9.32	0.233	0.932	2.33
Perfluorooctanesulfonamide (FOSA)		AveID	28915 5942477	59352 10941407	303466	1191472	2967886	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorononanesulfonic acid (PFNS)		AveID	10495 2121542	21304 4039861	111891	458680	1116390	0.0240 4.80	0.0480 9.60	0.240	0.960	2.40
Perfluorodecanoic acid (PFDA)		AveID	66983 12599664	119347 22626044	670649	2667118	6416328	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
8:2 FTS		AveID	17306 3351779	35773 5740074	192646	718249	1774010	0.0240 4.79	0.0479 9.58	0.240	0.958	2.40
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)		AveID	16470 4171737	35975 8405563	169306	725376	1899727	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorodecanesulfonic acid (PFDS)		AveID	7779 1574232	14072 2965384	90403	336549	865412	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
Perfluoroundecanoic acid (PFUnA)		AveID	49921 10049138	97171 19257100	453091	2000568	5099088	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NEtFOSAA		AveID	18712 3954042	40939 7245516	182438	740862	1771375	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NMeFOSE		AveID	16439 3823966	35594 7914584	183266	801389	1879431	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
F-53B Minor		AveID	65464 15694929	142016 29771603	735543	3044892	7552197	0.0236 4.71	0.0471 9.42	0.236	0.942	2.36
NMeFOSA		AveID	12041 3005640	24517 5697566	129557	620301	1496026	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanoic acid (PFDoA)		AveID	64559 12763197	137352 24303897	638268	2735335	6649461	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
NEtFOSE		AveID	18497 4594733	42146 8772503	219724	940920	2157255	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
10:2 FTS		AveID	14361 2739844	27842 5139250	130064	573834	1373371	0.0241 4.82	0.0482 9.64	0.241	0.964	2.41
NEtFOSA		AveID	14451 3328513	30921 6435459	158852	679547	1715647	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorododecanesulfonic acid (PFDoS)		AveID	7529 1465609	15131 2883712	74753	302931	755307	0.0242 4.84	0.0484 9.68	0.242	0.968	2.42
Perfluorotridecanoic acid (PFTriA)		AveID	59807 12628497	117555 22988143	609093	2740766	6049149	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluorotetradecanoic acid (PFTeA)		AveID	8077 1476395	16396 2725845	75742	328471	817070	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	62590 7415459	99393 14457600	395228	1501905	3526022	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50
Perfluoro-n-octadecanoic acid (PFODA)		AveID	21355 4733778	38652 9922359	213527	905281	2254569	0.0250 5.00	0.0500 10.0	0.250	1.00	2.50

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383200

SDG No.: 70132489

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 20:49 Calibration End Date: 06/03/2020 21:52 Calibration ID: 50353

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFBA	13PF OA	Ave	10093737 10376444	9977461 9879046	10263879	10244180	10166917	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C5 PFPeA	13PF OA	Ave	9111507 9194627	9088136 8809811	9278679	8921828	9268985	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 PFBS	13PF OA	Ave	6739959 6554112	6825823 6181382	6888399	6643096	6525531	2.33 2.33	2.33 2.33	2.33	2.33	2.33
M2-4:2 FTS	13PF OA	Ave	1152533 1019153	1172907 954788	1123165	1096916	1053408	2.34 2.34	2.34 2.34	2.34	2.34	2.34
13C2 PFHxA	13PF OA	Ave	9318024 8936428	8790275 8655695	9358102	9283930	9089479	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C3 HFPO-DA	13PF OA	Ave	1758314 1887673	1726198 1757481	1730427	1771761	1749993	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFHpA	13PF OA	Ave	8261973 7803830	8194966 7485089	8431940	8160086	7996259	2.50 2.50	2.50 2.50	2.50	2.50	2.50
18O2 PFHxS	13PF OA	Ave	3252150 3118573	3344126 2902046	3402875	3303564	3190776	2.37 2.37	2.37 2.37	2.37	2.37	2.37
M2-6:2 FTS	13PF OA	Ave	970316 813584	977136 756308	958146	899267	840045	2.38 2.38	2.38 2.38	2.38	2.38	2.38
13C4 PFOA	13PF OA	Ave	8441495 8016467	8011359 7311766	8500891	8286205	7885674	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C4 PFOS	13PF OA	Ave	1408568 1328196	1437707 1265539	1454051	1424253	1336521	2.39 2.39	2.39 2.39	2.39	2.39	2.39
13C5 PFNA	13PF OA	Ave	6568100 6606585	6526260 6122913	6673094	6790000	6687074	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 FOSA	13PF OA	Ave	3323169 3145739	3360141 2826961	3383852	3240917	3128280	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFDA	13PF OA	Ave	7659493 6807338	7315383 5910150	7553438	7397770	7104635	2.50 2.50	2.50 2.50	2.50	2.50	2.50
M2-8:2 FTS	13PF OA	Ave	1235375 1040437	1228849 894581	1241398	1177027	1107359	2.40 2.40	2.40 2.40	2.40	2.40	2.40
d3-NMeFOSAA	13PF OA	Ave	2602587 2639648	2740635 2601201	2721834	2519170	2612262	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFUnA	13PF OA	Ave	6914654 6528918	6775939 5916246	7133568	6781343	6455430	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d5-NEtFOSAA	13PF OA	Ave	2817647 2515024	2858002 2248741	2969997	2776260	2677034	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d7-N-MeFOSE-M	13PF OA	Ave	9910001 9838570	8655036 9583664	9353315	9872296	9211294	12.5 12.5	12.5 12.5	12.5	12.5	12.5
d-N-MeFOSA-M	13PF OA	Ave	1424579 1601871	1467744 1572924	1477715	1484616	1468361	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d9-N-EtFOSE-M	13PF OA	Ave	10573876 11428157	10556803 10702856	10828933	10629618	10760547	12.5 12.5	12.5 12.5	12.5	12.5	12.5

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

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1 Analy Batch No.: 383200

SDG No.: 70132489

Instrument ID: A18 GC Column: Gemini C18 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/03/2020 20:49 Calibration End Date: 06/03/2020 21:52 Calibration ID: 50353

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C2 PFDoA	13PF OA	Ave	6851312 7286258	6856554 6408321	6940530	7691922	7054473	2.50 2.50	2.50 2.50	2.50	2.50	2.50
d-N-EtFOSA-M	13PF OA	Ave	1475642 1657176	1535112 1578747	1520746	1524156	1496678	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFTeDA	13PF OA	Ave	5926515 5867063	5918965 6132618	5674809	6045514	5413550	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C2 PFHxDA	13PF OA	Ave	4119875 4203701	3941393 4424010	4234955	3929844	4163643	2.50 2.50	2.50 2.50	2.50	2.50	2.50
13C8 PFOA	13PF OA	Ave	6534929 6306791	6494112 6333861	6652710	6562263	6678798	2.45 2.45	2.45 2.45	2.45	2.45	2.45
13C8 PFOS	13PF OA	Ave	490970 445285	516256 433019	502396	474148	475604	2.39 2.39	2.39 2.39	2.39	2.39	2.39

Curve Type Legend:

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

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0008.d
Lims ID: IC STD 1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 03-Jun-2020 20:49:03 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: IC STD 1 (021)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 04-Jun-2020 10:32:13 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1046

First Level Reviewer: duranl Date: 04-Jun-2020 05:45:48
Ratio Calibration: Average of Initial Calibration

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	2.584	2.579	0.005	0.623	10093737	2.53		101	7633	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.592	2.581	0.011	1.003	80946	0.0235		94.2	23.9	
D 4 13C5 PFPeA										
267.90 > 223.00	2.955	2.957	-0.002	0.713	9111507	2.54		102	5546	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.967	2.959	0.008	1.004	109279	0.0311		125	32.4	
D 9 13C3 PFBS										
301.90 > 80.00	3.003	2.998	0.005	0.724	6739959	2.41		103	7166	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.003	3.003	0.0	1.000	59252	0.0210	Target=2.25	94.8	89.2	
298.90 > 99.00	3.003	3.003	0.0	1.000	25876		2.29(1.13-3.38)	94.8	25.7	
8 4:2 FTS										
327.00 > 307.00	3.296	3.297	-0.001	1.000	19486	0.0188		80.6	303	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.296	3.297	-0.001	0.795	1152533	2.53		108	1479	
D 11 13C2 PFHxA										
315.00 > 270.00	3.339	3.339	0.0	0.805	9318024	2.61		104	5243	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.339	3.339	0.0	1.000	88323	0.0255	Target=11.49	102	38.3	
313.00 > 119.00	3.339	3.339	0.0	1.000	7593		11.63(5.74-17.23)	102	9.7	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.360	3.359	0.001	1.119	45313	0.0218	Target=2.74	93.0	71.2	
349.00 > 99.00	3.360	3.359	0.001	1.119	16059		2.82(1.37-4.12)	93.0	57.4	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.466	3.459	0.007	0.836	1758314	2.52		101	3836	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.466	3.459	0.007	1.000	15300	0.0230		92.0	107	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.746	3.743	0.004	1.000	82079	0.0252	Target=3.25	101	32.1	
363.00 > 169.00	3.746	3.743	0.004	1.000	24880		3.30(1.62-4.87)	101	64.7	
D 18 13C4 PFHpA										
367.00 > 322.00	3.746	3.743	0.004	0.904	8261973	2.61		104	10217	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.755	3.752	0.003	1.000	41851	0.0264	Target=2.90	116	122	M
399.00 > 99.00	3.755	3.752	0.003	1.000	14743		2.84(1.45-4.35)	116	36.4	M
D 17 18O2 PFHxS										
403.00 > 84.00	3.755	3.752	0.003	0.906	3252150	2.43		103	4473	
19 DONA										
377.00 > 251.00	3.803	3.794	0.009	0.845	199475	0.0213	Target=2.01	90.4	351	
377.00 > 85.00	3.794	3.794	0.0	0.843	98720		2.02(1.00-3.01)	90.4	236	
21 6:2 FTS										
427.00 > 407.00	4.121	4.117	0.004	1.000	17921	0.0219		92.4	166	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.121	4.117	0.004	0.994	970316	2.64		111	2190	
$ 26 13C8 PFOA										
421.00 > 376.00	4.137	4.134	0.003	0.998	6534929	2.50		102	5867	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.137	4.136	0.001	0.920	19322	0.0217	Target=3.25	91.0	102	
449.00 > 99.00	4.137	4.136	0.001	0.920	5466		3.53(1.63-4.88)	91.0	38.1	
D 25 13C4 PFOA										
417.00 > 372.00	4.145	4.139	0.006	1.000	8441495	2.66		106	11540	
* 23 13C2 PFOA										
415.00 > 370.00	4.145	4.141	0.004		8009141	2.50			9212	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.137	4.141	-0.004	0.998	97039	0.0284	Target=2.35	114	38.8	M
413.00 > 169.00	4.145	4.141	0.004	1.000	44255		2.19(1.18-3.53)	114	65.3	
$ 28 13C8 PFOS										
507.00 > 99.00	4.499	4.496	0.003	1.085	490970	2.50		105	2100	
D 27 13C4 PFOS										
503.00 > 80.00	4.499	4.499	0.0	1.085	1408568	2.48		104	2685	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.507	4.500	0.007	1.002	13358	0.0225	Target=2.41	96.9	45.7	M
499.00 > 99.00	4.507	4.500	0.007	1.002	5742		2.33(1.21-3.62)	96.9	22.9	M
31 Perfluorononanoic acid										
463.00 > 419.00	4.515	4.512	0.003	1.000	60388	0.0239	Target=6.74	95.6	22.6	
463.00 > 169.00	4.523	4.512	0.011	1.002	9816		6.15(3.37-10.11)	95.6	30.2	
D 30 13C5 PFNA										
468.00 > 423.00	4.515	4.513	0.002	1.089	6568100	2.54		102	9456	
32 9ClFOS										
531.00 > 351.00	4.695	4.694	0.001	1.044	61145	0.0210		90.0	148	
D 33 13C8 FOSA										
506.00 > 78.00	4.837	4.832	0.005	1.167	3323169	2.64		106	3109	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.837	4.835	0.002	1.000	28915	0.0237		94.7	141	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.845	4.841	0.004	1.077	10495	0.0228	Target=1.37	95.0	51.4	
549.00 > 99.00	4.845	4.841	0.004	1.077	7282		1.44(0.69-2.06)	95.0	39.1	
D 39 13C2 PFDA										
515.00 > 470.00	4.863	4.862	0.001	1.173	7659493	2.74		110	6108	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.863	4.862	0.001	1.000	66983	0.0244	Target=8.07	97.7	75.2	
513.00 > 169.00	4.863	4.862	0.001	1.000	7978		8.40(4.04-12.11)	97.7	32.1	
36 8:2 FTS										
527.00 > 507.00	4.863	4.864	-0.001	1.000	17306	0.0218		91.2	259	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.863	4.864	-0.001	1.173	1235375	2.66		111	2292	
D 40 d3-NMeFOSAA										
573.00 > 419.00	5.029	5.023	0.006	1.213	2602587	2.51		100	2575	
41 NMeFOSAA										M
570.00 > 419.00	5.029	5.027	0.002	1.000	16470	0.0223		89.4	39.4	M
42 Perfluorodecanesulfonic acid										M
599.00 > 80.00	5.156	5.152	0.004	1.146	7779	0.0228	Target=1.31	94.7	91.2	
599.00 > 99.00	5.156	5.152	0.004	1.146	6150		1.26(0.65-1.96)	94.7	50.9	M
D 43 13C2 PFUnA										
565.00 > 520.00	5.175	5.178	-0.003	1.248	6914654	2.65		106	9436	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.175	5.179	-0.004	1.000	49921	0.0244	Target=6.70	97.5	89.0	
563.00 > 169.00	5.184	5.179	0.005	1.002	7394		6.75(3.35-10.05)	97.5	35.7	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.184	5.181	0.003	1.250	2817647	2.66		106	2355	
46 NEtFOSA										M
584.00 > 419.00	5.193	5.189	0.004	1.002	18712	0.0236		94.6	113	M
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.289	5.287	0.002	1.276	9910001	13.2		106	5790	
48 N-MeFOSE-M										
616.00 > 59.00	5.299	5.301	-0.002	1.002	16439	0.0211		84.4	55.9	
51 11ClFOS										
631.00 > 451.00	5.309	5.309	0.0	1.180	65464	0.0205		86.9	502	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.309	5.311	-0.002	1.281	1424579	2.41		96.3	31.6	
50 NMeFOSA										
512.00 > 169.00	5.319	5.316	0.003	1.002	12041	0.0229		91.5	66.7	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.458	5.454	0.004	1.317	10573876	12.4		99.5	12548	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.458	5.462	-0.004	0.998	64559	0.0253	Target=6.20	101	47.4	
613.00 > 169.00	5.469	5.462	0.007	1.000	11648		5.54(3.10-9.30)	101	60.8	
D 56 13C2 PFDoA										
615.00 > 570.00	5.469	5.462	0.007	1.319	6851312	2.48		99.3	6613	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
53 N-EtFOSE-M										
630.00 > 59.00	5.469	5.468	0.001	1.002	18497	0.0218		87.1	65.4	
58 10:2 FTS										
627.00 > 607.00	5.480	5.477	0.003	1.127	14361	0.0229		95.1	147	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.480	5.482	-0.002	1.322	1475642	2.43		97.2	513	
55 N-EtFOSA-M										
526.00 > 169.00	5.491	5.486	0.005	1.002	14451	0.0234		93.7	54.6	
59 PFDoS										
699.00 > 80.00	5.690	5.680	0.010	1.265	7529	0.0239	Target=2.11	98.6	93.8	
699.00 > 99.00	5.690	5.680	0.010	1.265	3207		2.35(1.06-3.17)	98.6	47.4	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.723	5.715	0.008	1.046	59807	0.0250	Target=4.98	99.9	149	
663.00 > 169.00	5.723	5.715	0.008	1.046	12965		4.61(2.49-7.47)	99.9	93.3	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.948	5.945	0.003	1.435	5926515	2.57		103	8426	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.948	5.945	0.003	1.000	8077	0.0256	Target=0.96	102	44.3	
713.00 > 219.00	5.948	5.945	0.003	1.000	7266		1.11(0.48-1.43)	102	141	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.359	6.352	0.007	1.534	4119875	2.52		101	5576	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.359	6.353	0.006	1.000	62590	0.0242	Target=5.10	97.0	72.8	
813.00 > 169.00	6.359	6.353	0.006	1.000	12801		4.89(2.55-7.64)	97.0	177	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.749	6.748	0.001	1.061	21355	0.0242	Target=5.50	96.7	29.5	
913.00 > 169.00	6.749	6.748	0.001	1.061	3803		5.62(2.75-8.25)	96.7	96.8	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL1_00021 Amount Added: 1.00 Units: mL

Report Date: 04-Jun-2020 10:32:15 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0008.d

Injection Date: 03-Jun-2020 20:49:03 Instrument ID: A18

Lims ID: IC STD 1

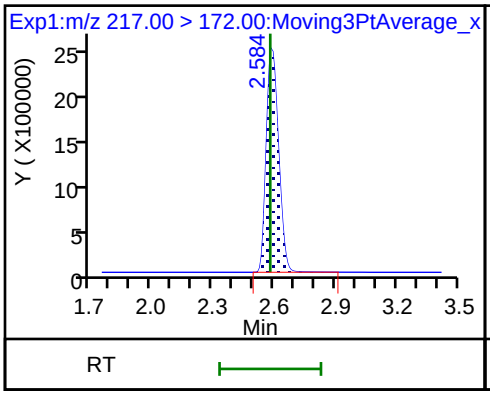
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2

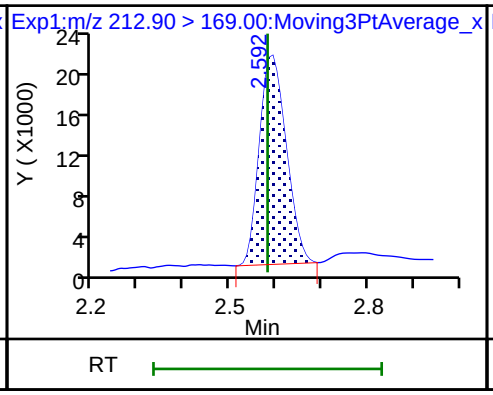
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

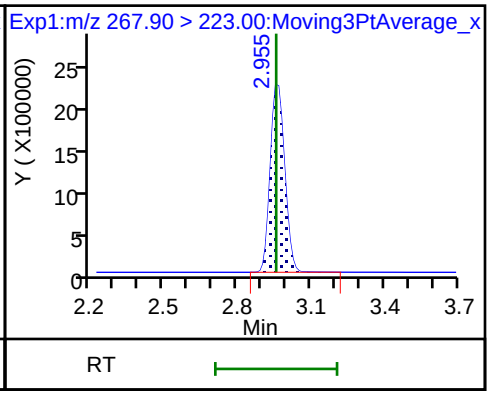
D 1 13C4 PFBA



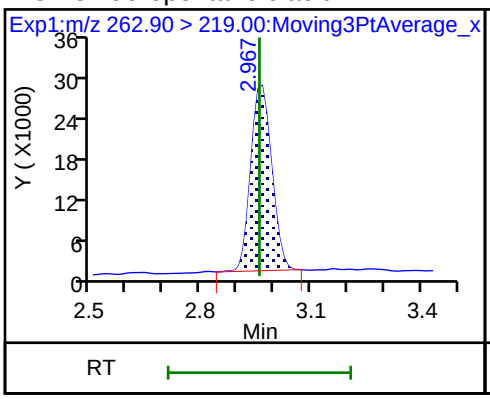
2 Perfluorobutanoic acid



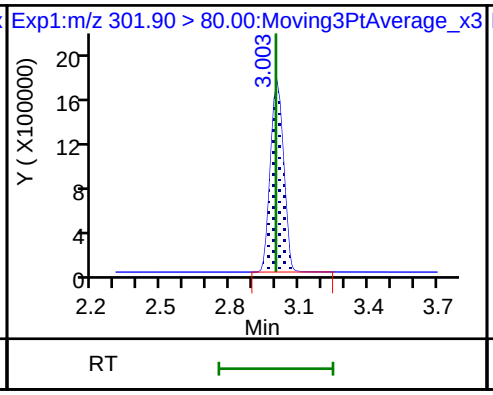
D 4 13C5 PFPeA



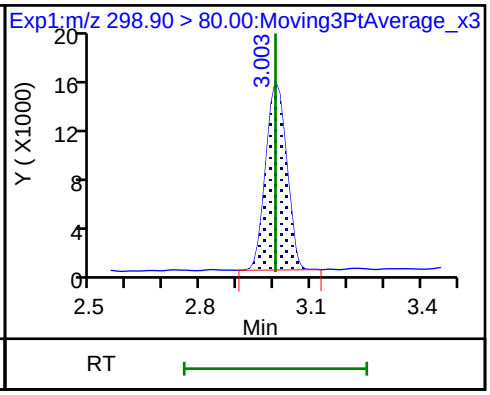
5 Perfluoropentanoic acid



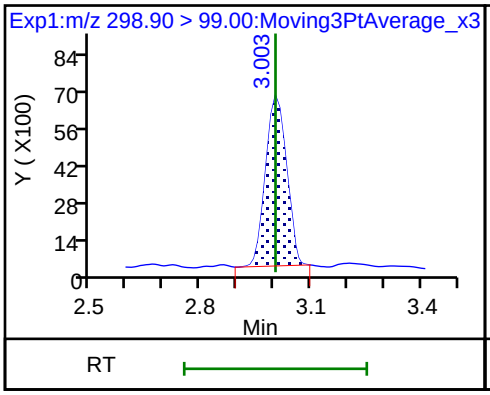
D 9 13C3 PFBS



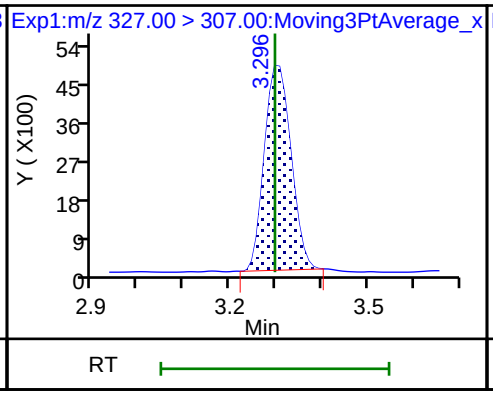
6 Perfluorobutanesulfonic acid



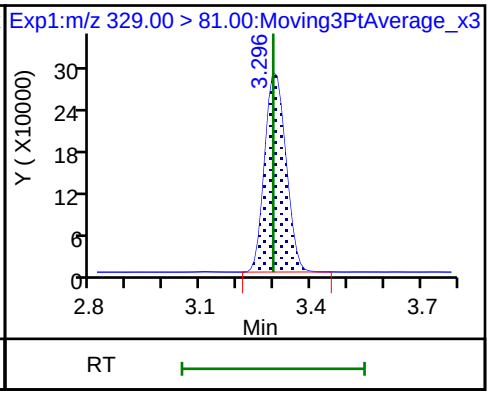
6 Perfluorobutanesulfonic acid



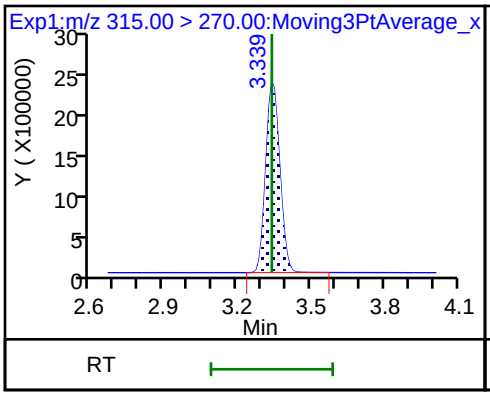
8 4:2 FTS



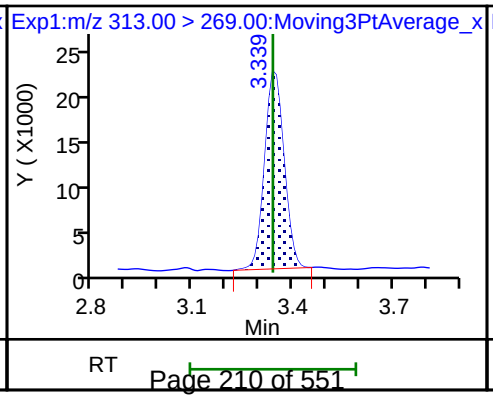
D 7 M2-4:2 FTS



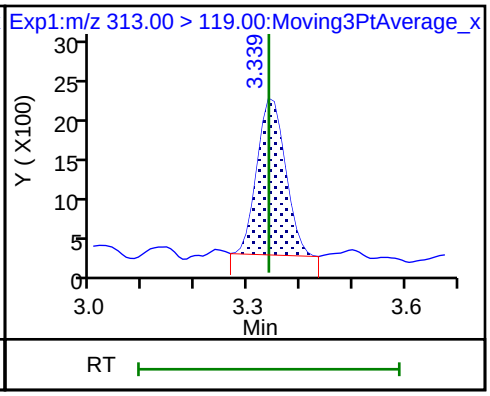
D 11 13C2 PFHxA



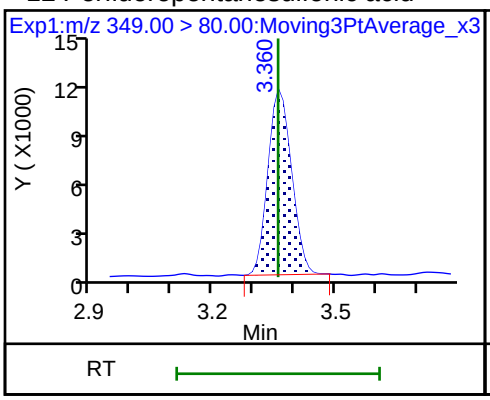
10 Perfluorohexanoic acid



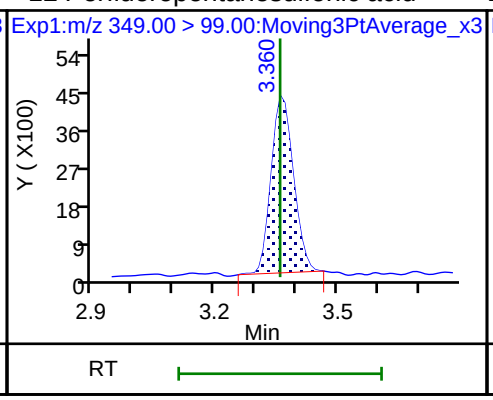
10 Perfluorohexanoic acid



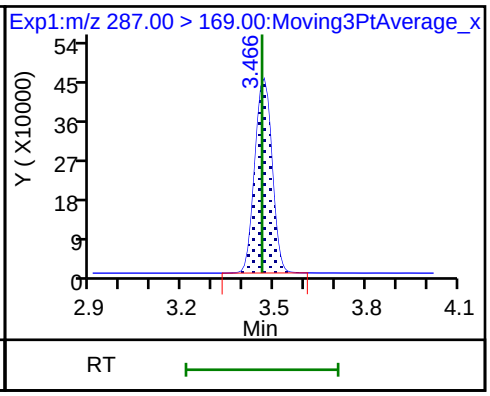
12 Perfluoropentanesulfonic acid



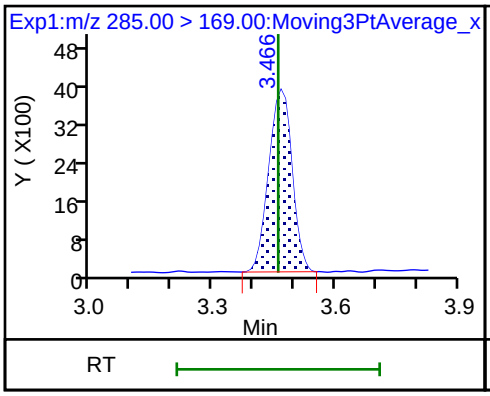
12 Perfluoropentanesulfonic acid



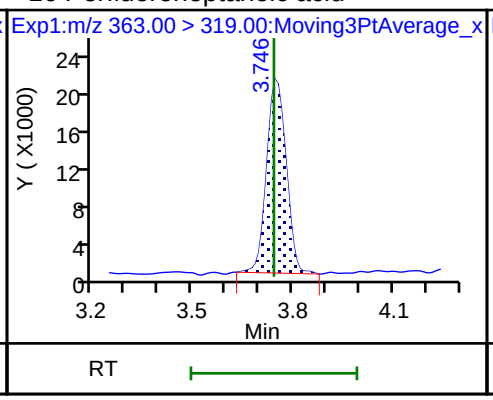
D 14 13C3 HFPO-DA



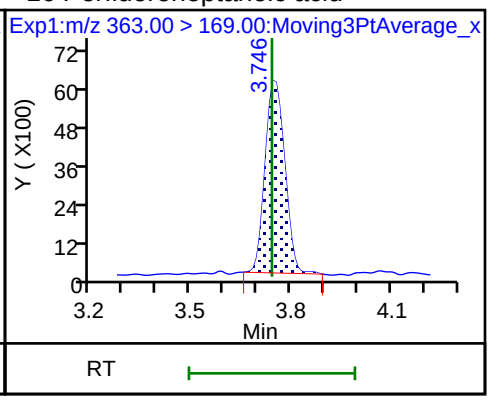
13 HPFO-DA



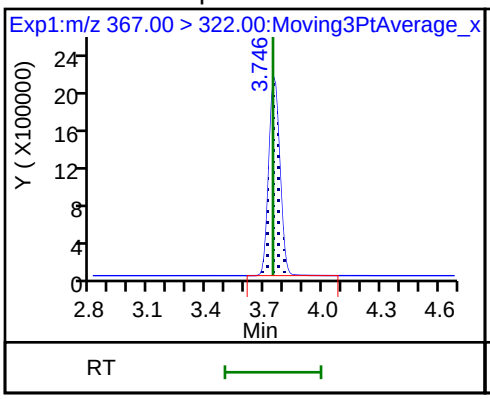
16 Perfluoroheptanoic acid



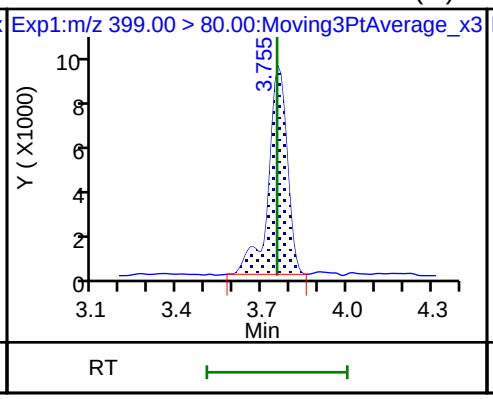
16 Perfluoroheptanoic acid



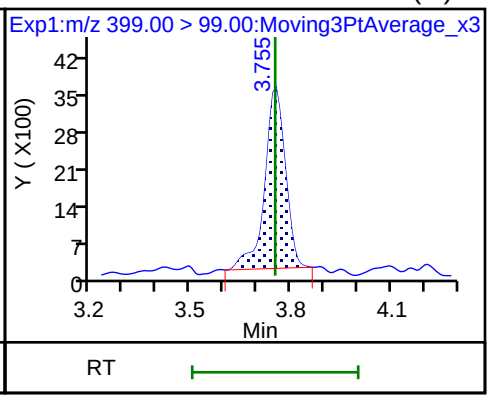
D 18 13C4 PFHpA



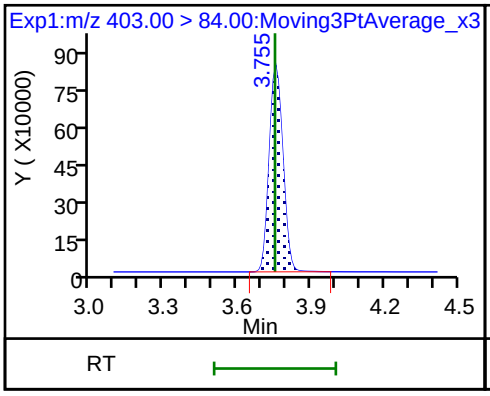
15 Perfluorohexanesulfonic acid (M)



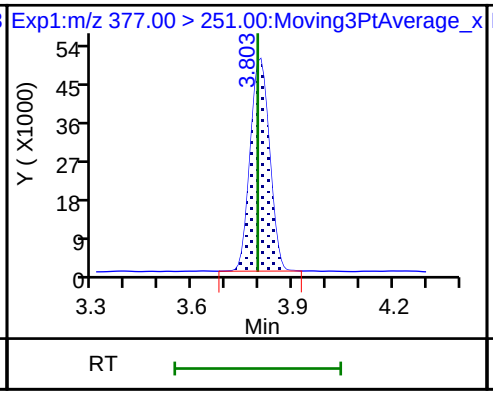
15 Perfluorohexanesulfonic acid (M)



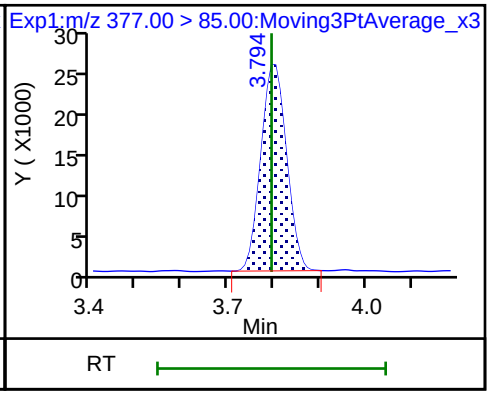
D 17 18O2 PFHxS



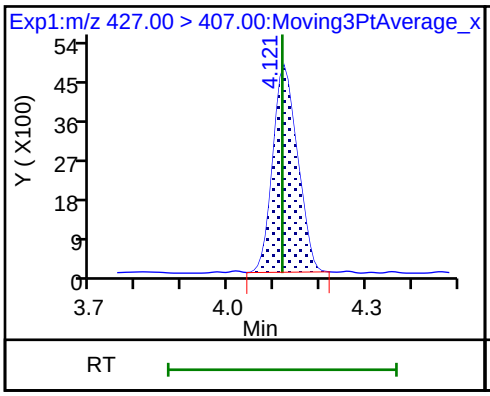
19 DONA



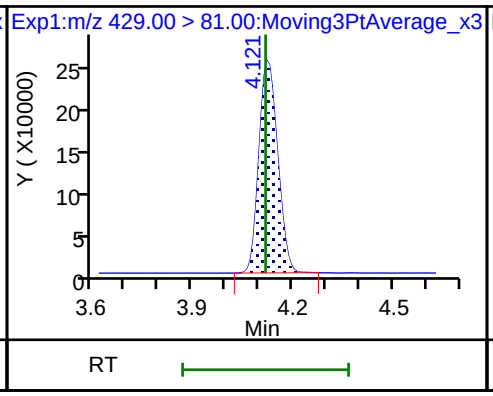
19 DONA



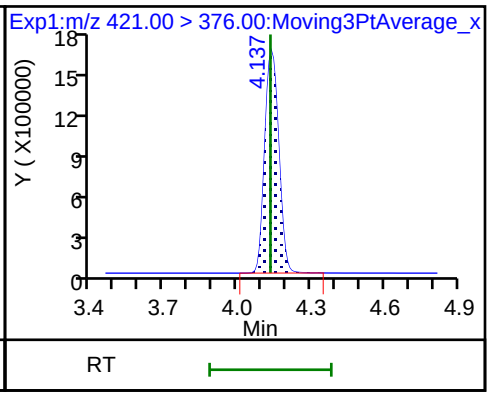
21 6:2 FTS



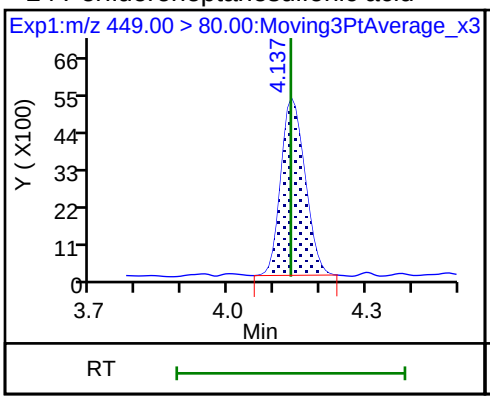
D 20 M2-6:2 FTS



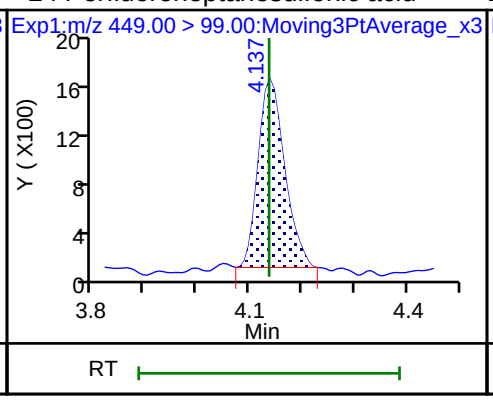
$ 26 13C8 PFOA



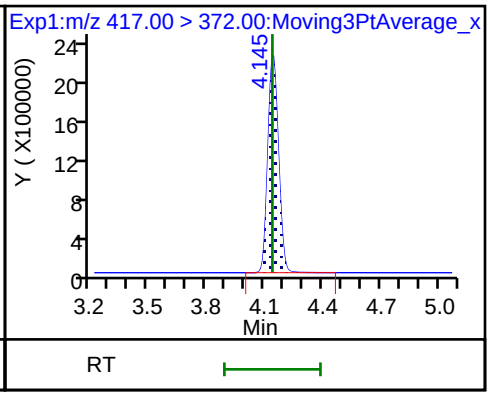
24 Perfluoroheptanesulfonic acid



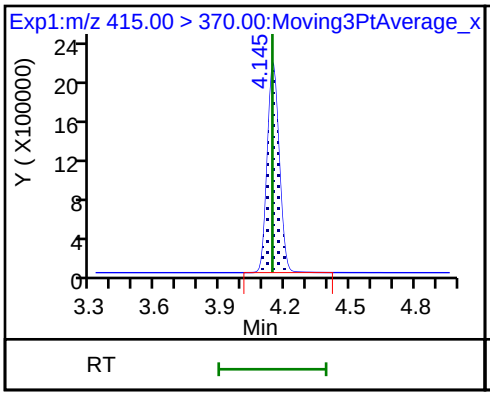
24 Perfluoroheptanesulfonic acid



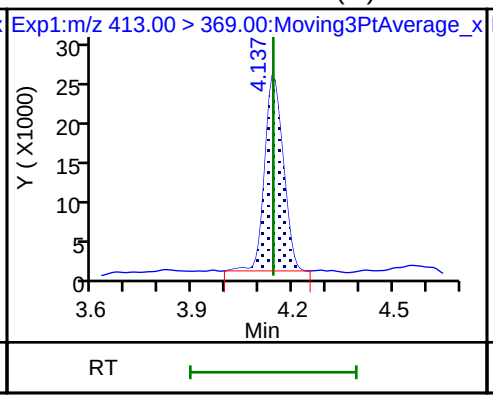
D 25 13C4 PFOA



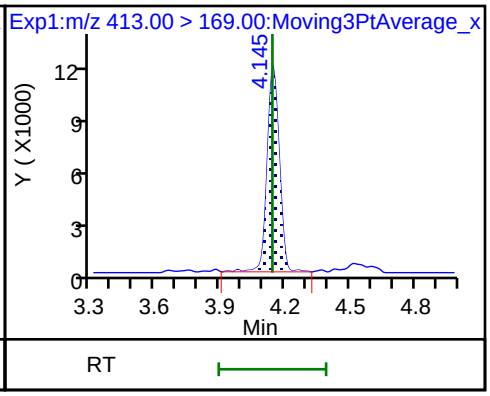
* 23 13C2 PFOA



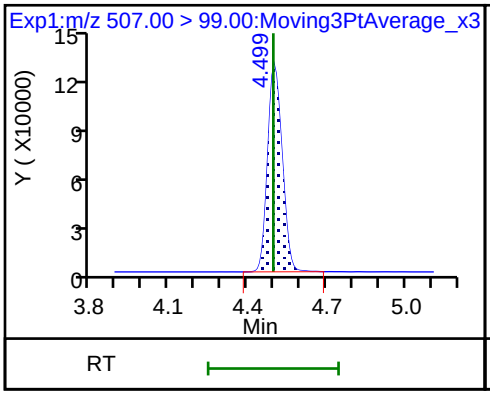
22 Perfluorooctanoic acid (M)



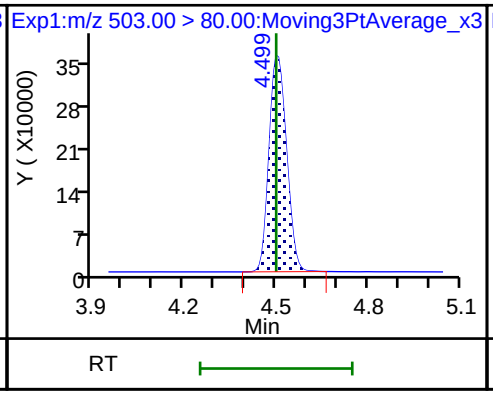
22 Perfluorooctanoic acid



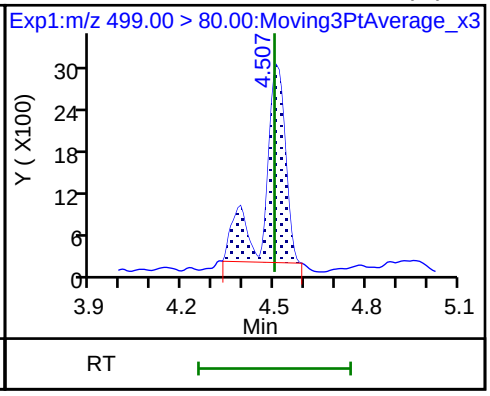
$ 28 13C8 PFOS



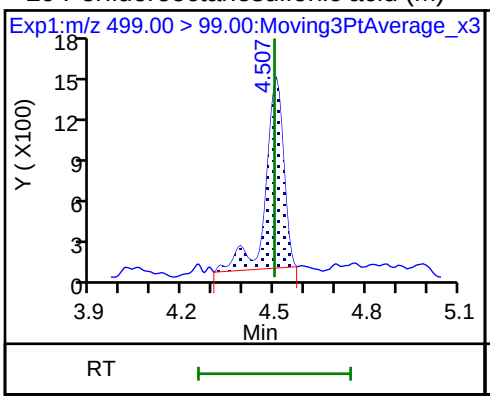
D 27 13C4 PFOS



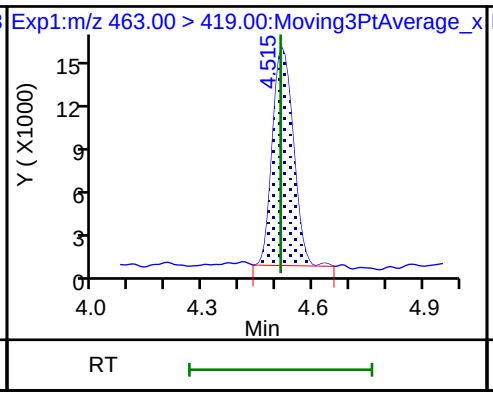
29 Perfluorooctanesulfonic acid (M)



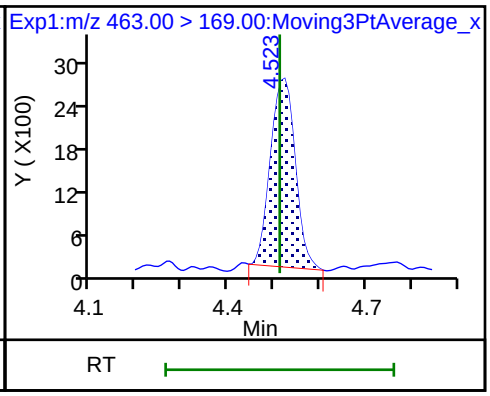
29 Perfluorooctanesulfonic acid (M)



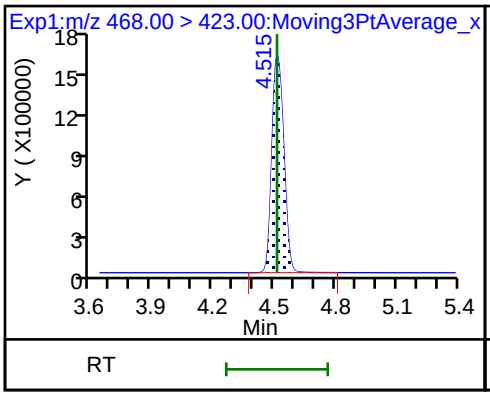
31 Perfluorononanoic acid



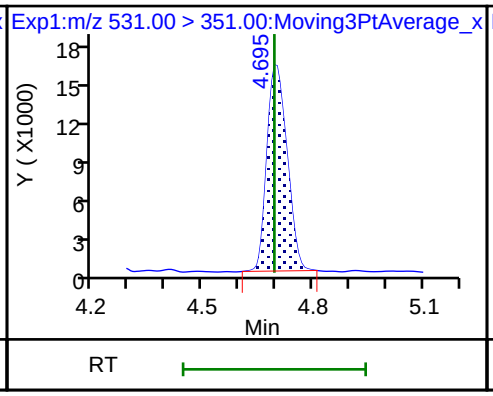
31 Perfluorononanoic acid



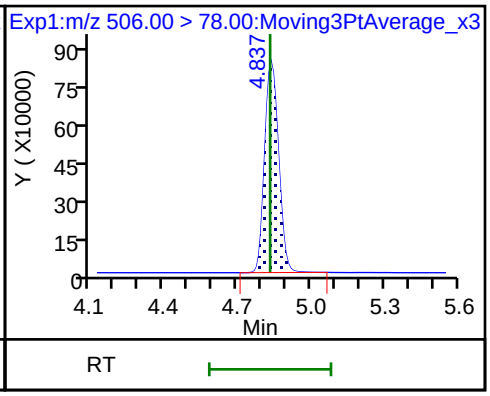
D 30 13C5 PFNA



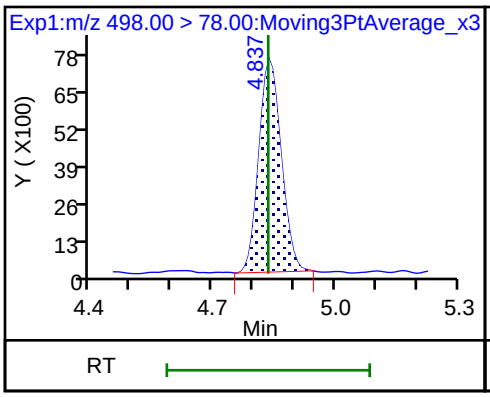
32 9ClFOS



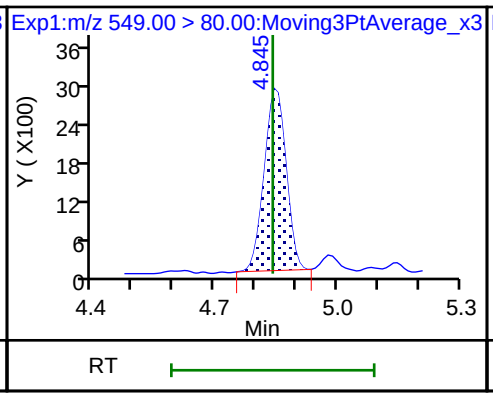
D 33 13C8 FOSA



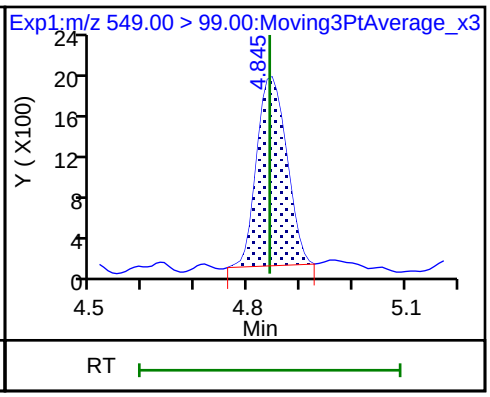
34 Perfluorooctanesulfonamide



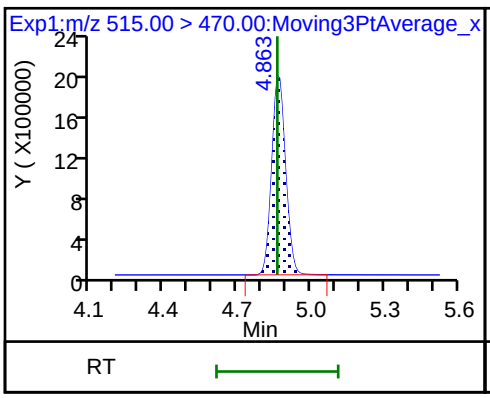
35 Perfluorononanesulfonic acid



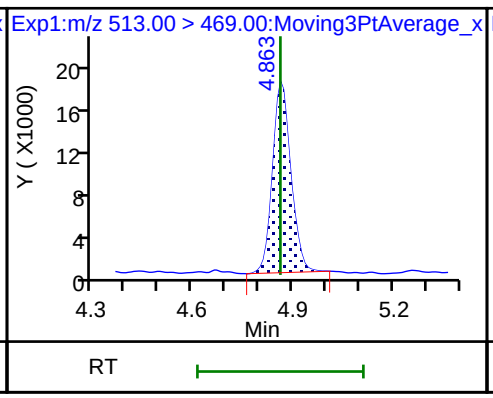
35 Perfluorononanesulfonic acid



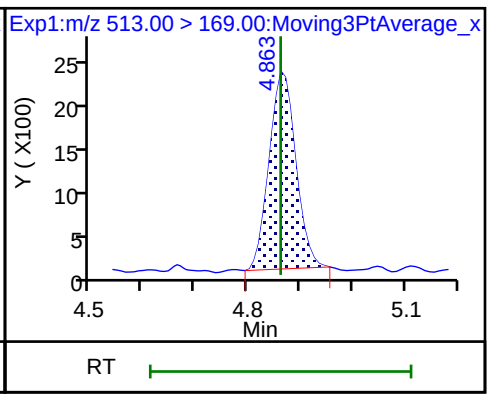
D 39 13C2 PFDA



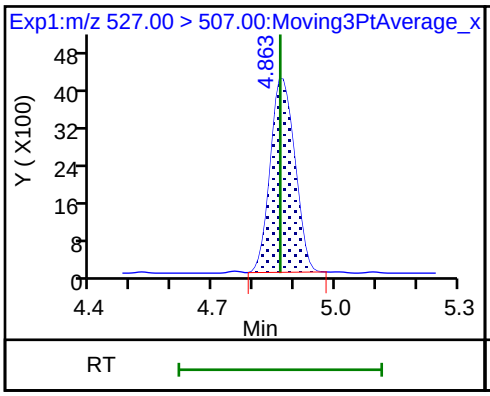
37 Perfluorodecanoic acid



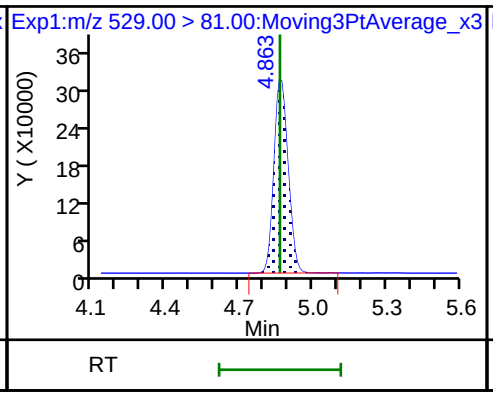
37 Perfluorodecanoic acid



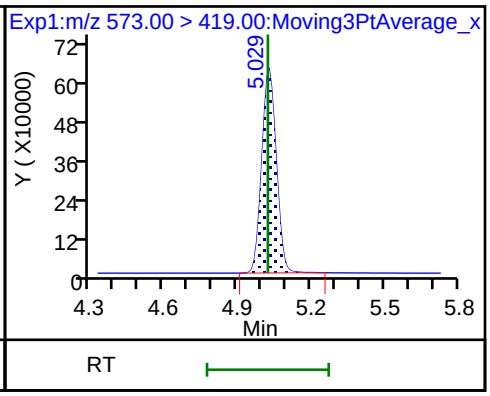
36 8:2 FTS



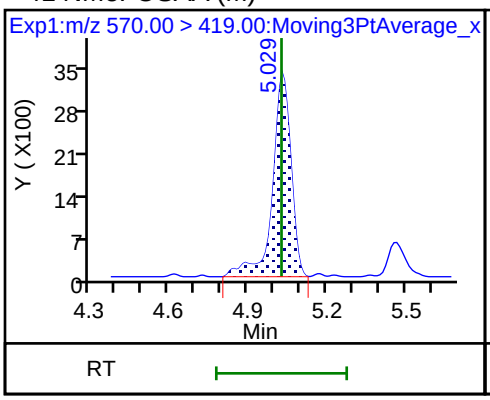
D 38 M2-8:2 FTS



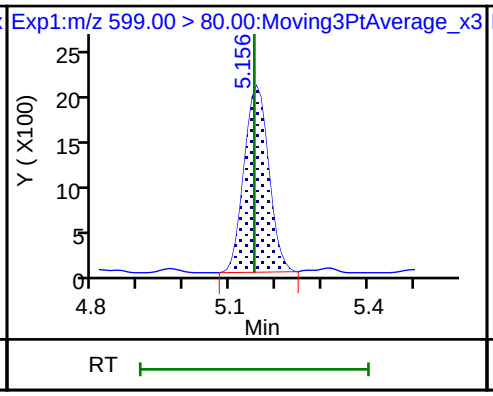
D 40 d3-NMeFOSAA



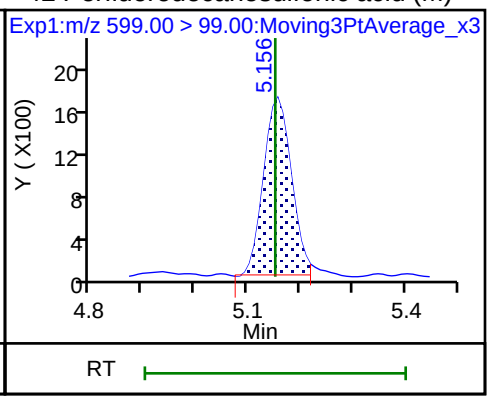
41 NMeFOSAA (M)



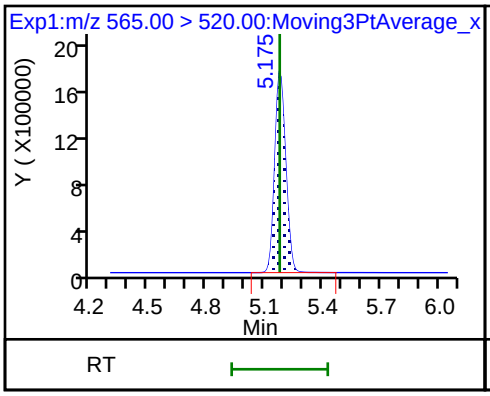
42 Perfluorodecanesulfonic acid



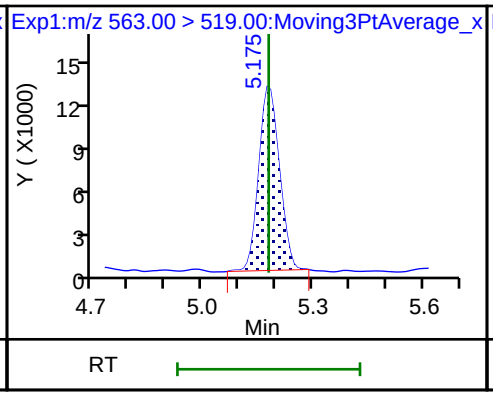
42 Perfluorodecanesulfonic acid (M)



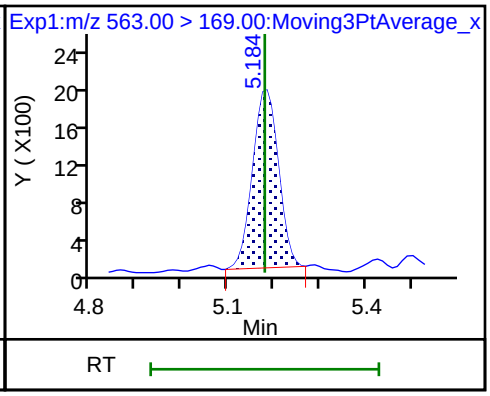
D 43 13C2 PFUnA



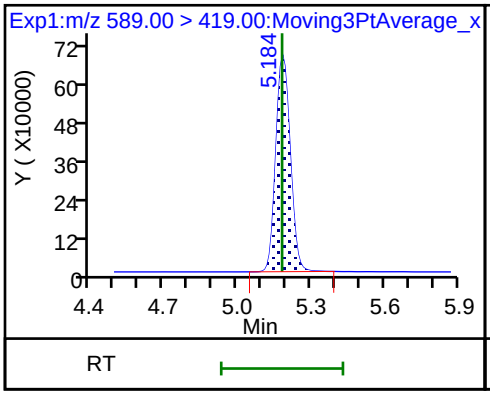
45 Perfluoroundecanoic acid



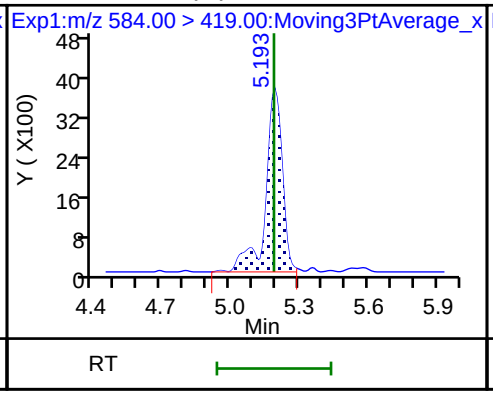
45 Perfluoroundecanoic acid



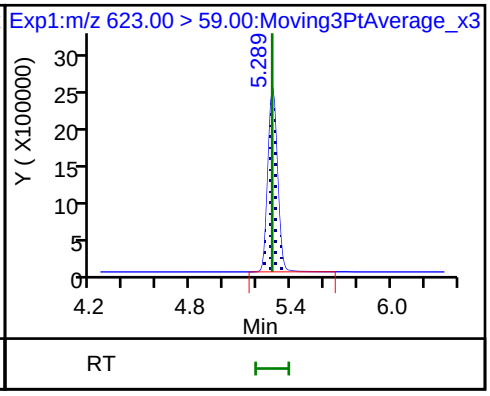
D 44 d5-NEtFOSAA



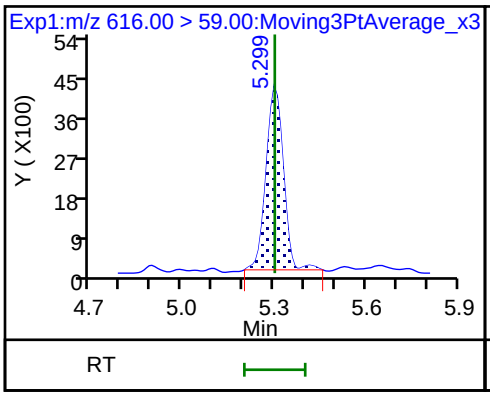
46 NEtFOSA (M)



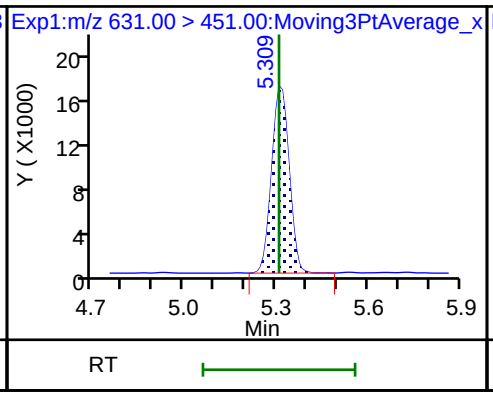
D 47 d7-N-MeFOSE-M



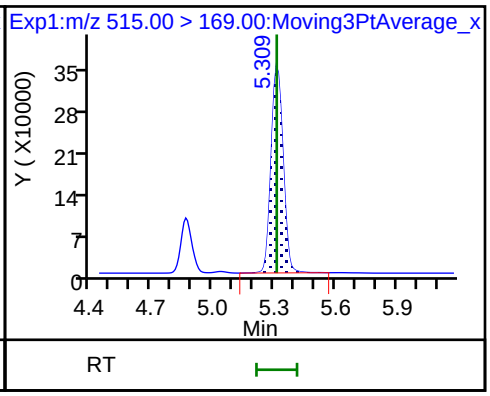
48 N-MeFOSE-M



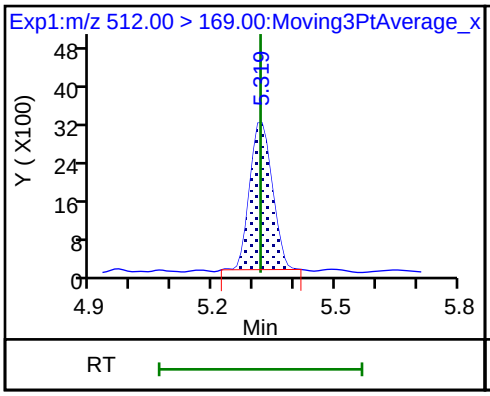
51 11ClFOS



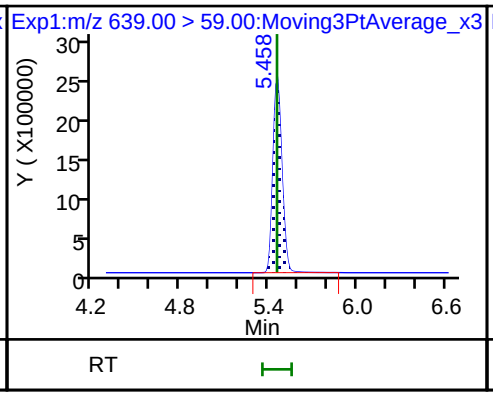
D 49 d-N-MeFOSA-M



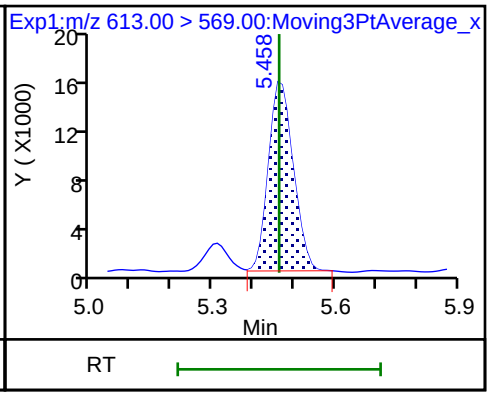
50 NMeFOSA



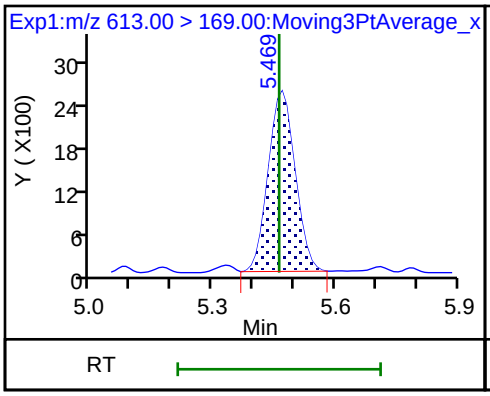
D 52 d9-N-EtFOSE-M



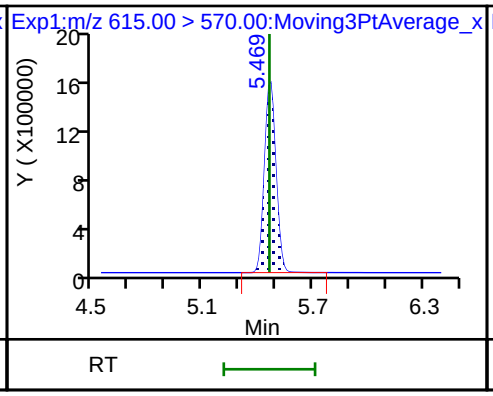
57 Perfluorododecanoic acid



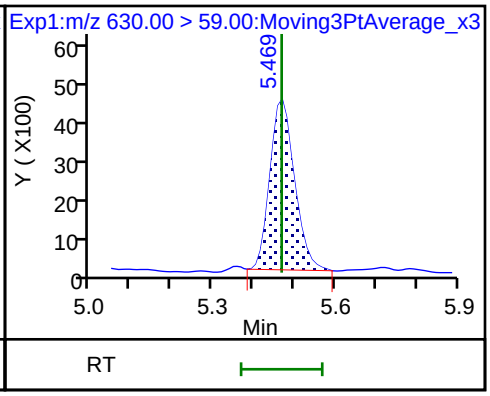
57 Perfluorododecanoic acid



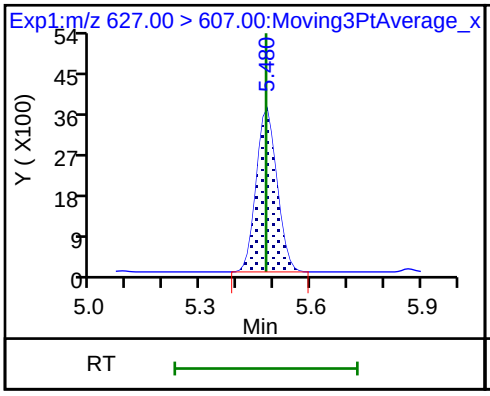
D 56 13C2 PFDoA



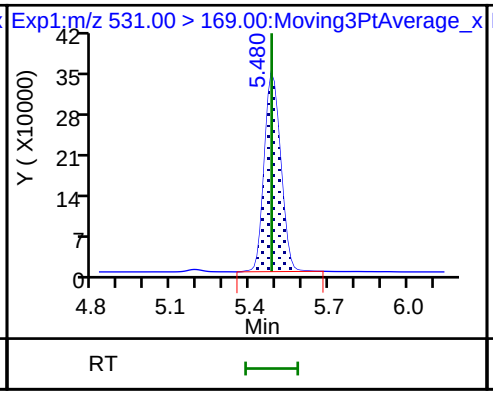
53 N-EtFOSE-M



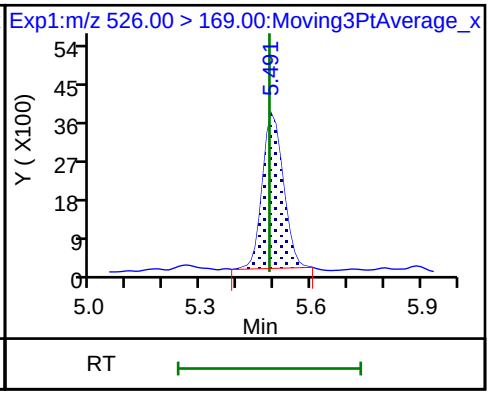
58 10:2 FTS



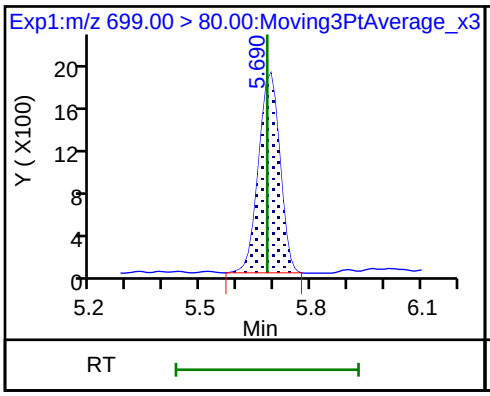
D 54 d-N-EtFOSA-M



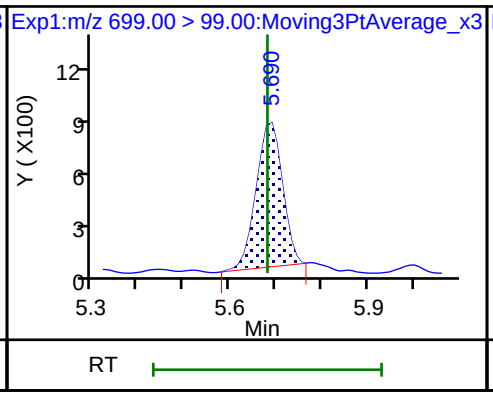
55 N-EtFOSA-M



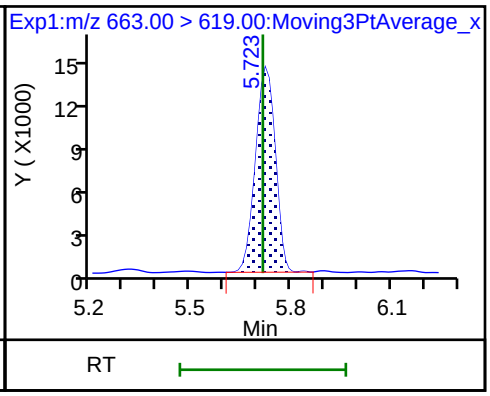
59 PFDoS



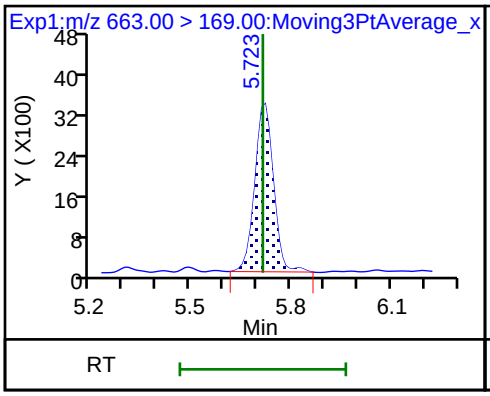
59 PFDoS



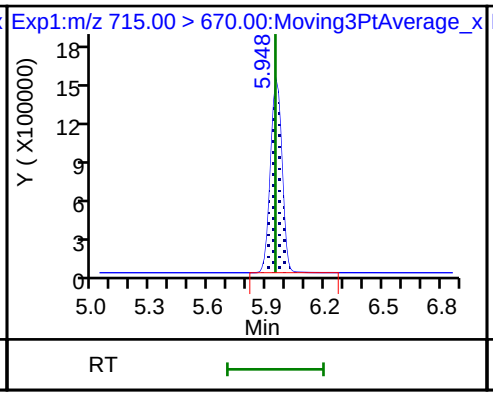
60 Perfluorotridecanoic acid



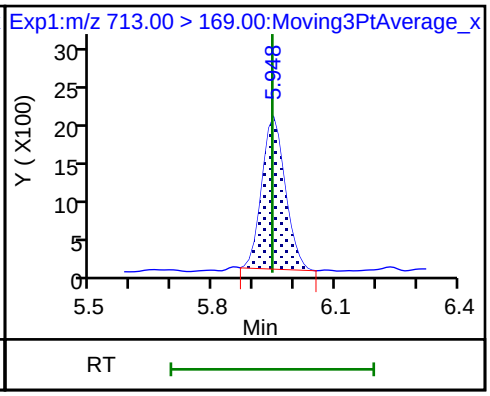
60 Perfluorotridecanoic acid



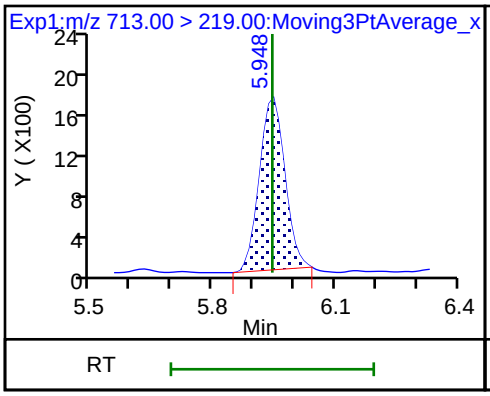
D 61 13C2 PFTeDA



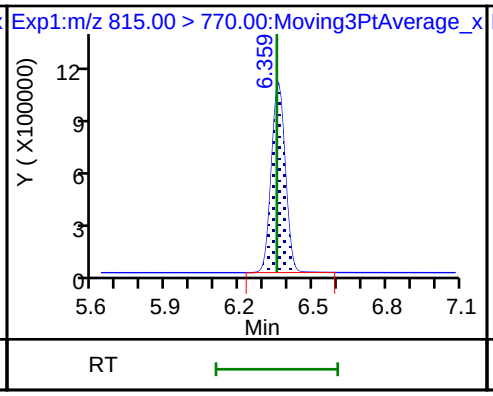
62 Perfluorotetradecanoic acid



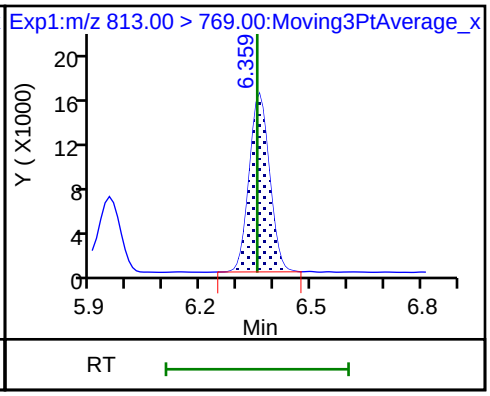
62 Perfluorotetradecanoic acid



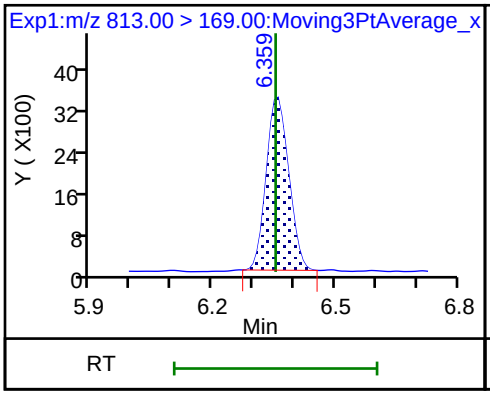
D 64 13C2 PFHxDA



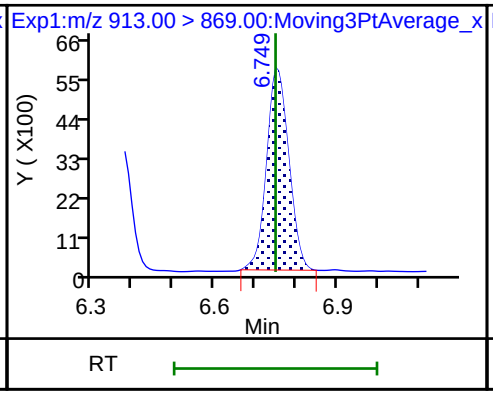
63 Perfluorohexadecanoic acid



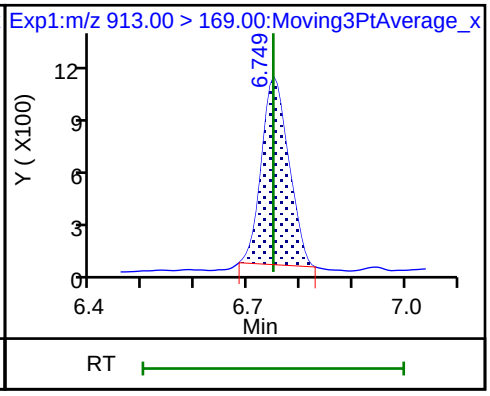
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

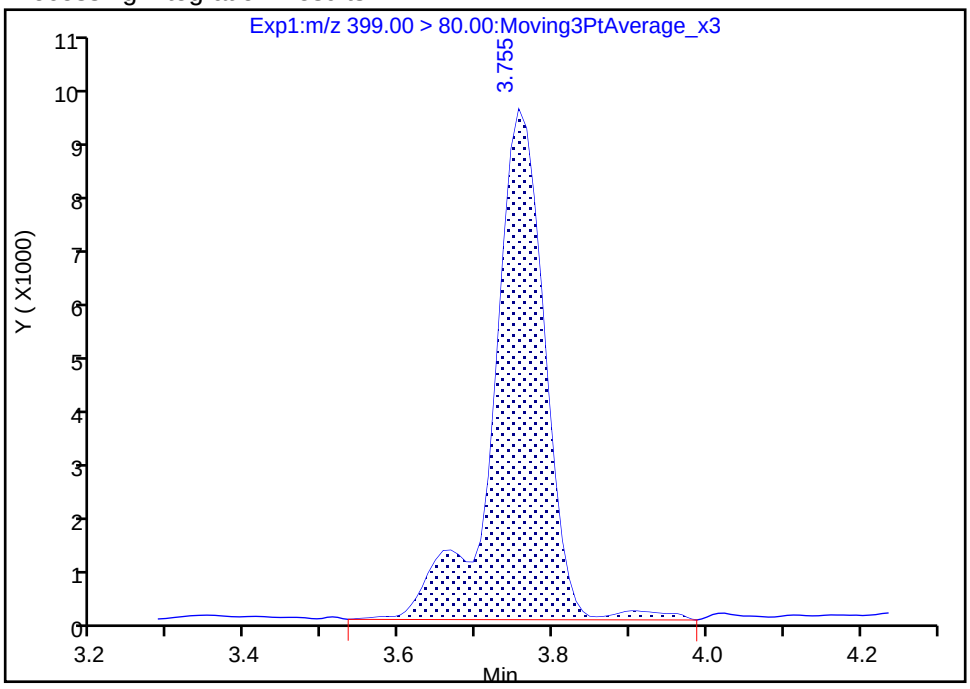
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0008.d				
Injection Date:	03-Jun-2020 20:49:03	Instrument ID:	A18		
Lims ID:	IC STD 1				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

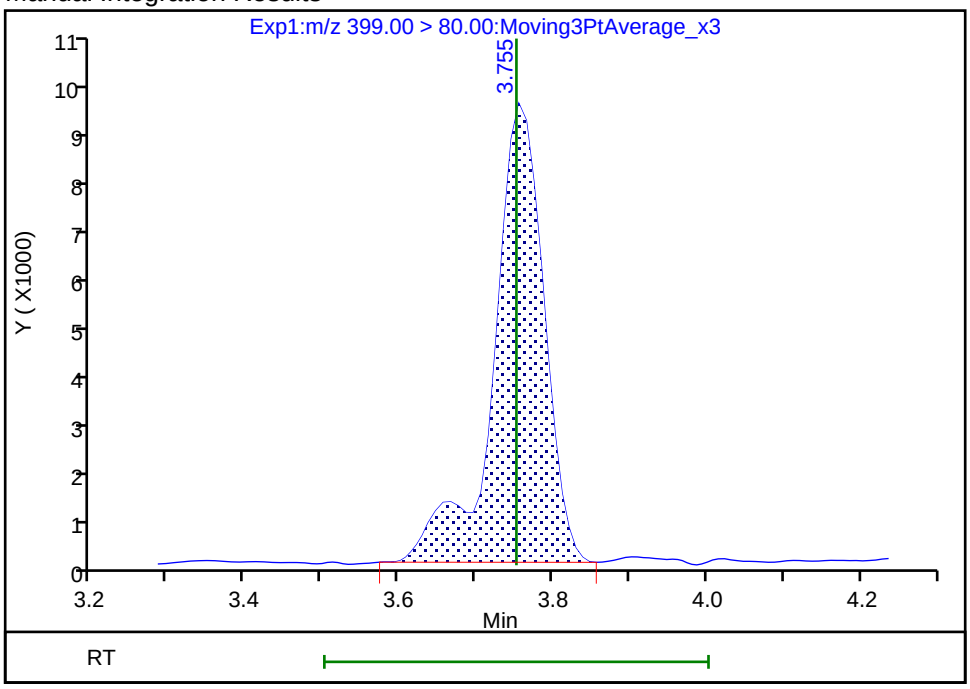
Processing Integration Results

RT: 3.76
Area: 43477
Amount: 0.027251
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 41851
Amount: 0.026436
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:54:07
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

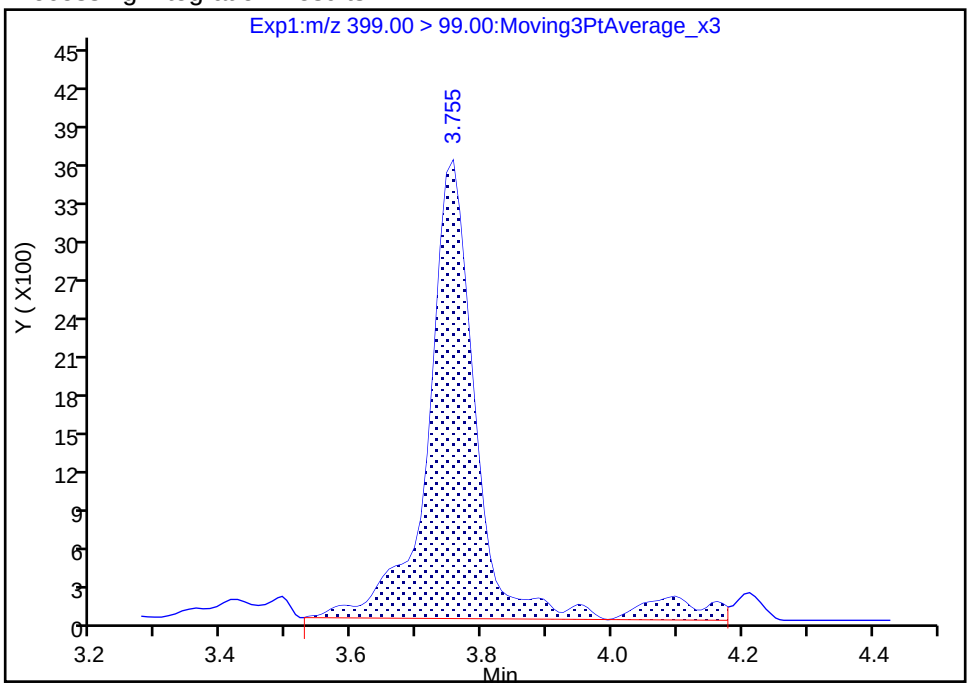
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0008.d				
Injection Date:	03-Jun-2020 20:49:03	Instrument ID:	A18		
Lims ID:	IC STD 1				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00 mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

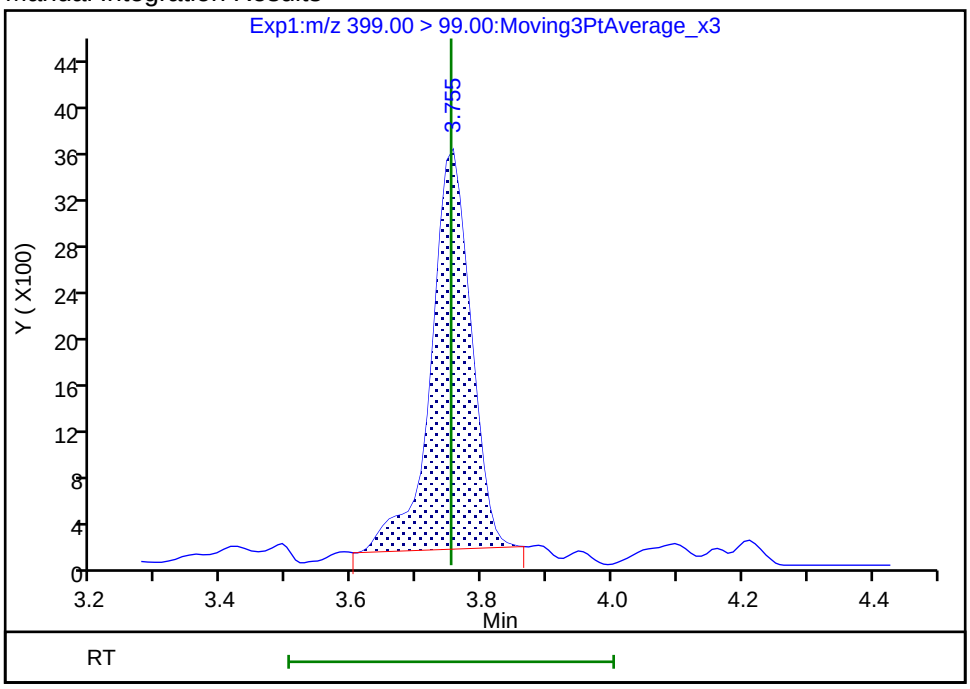
Processing Integration Results

RT: 3.76
Area: 18803
Amount: 0.027251
Amount Units: ng/ml



Manual Integration Results

RT: 3.76
Area: 14743
Amount: 0.026436
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:54:10
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

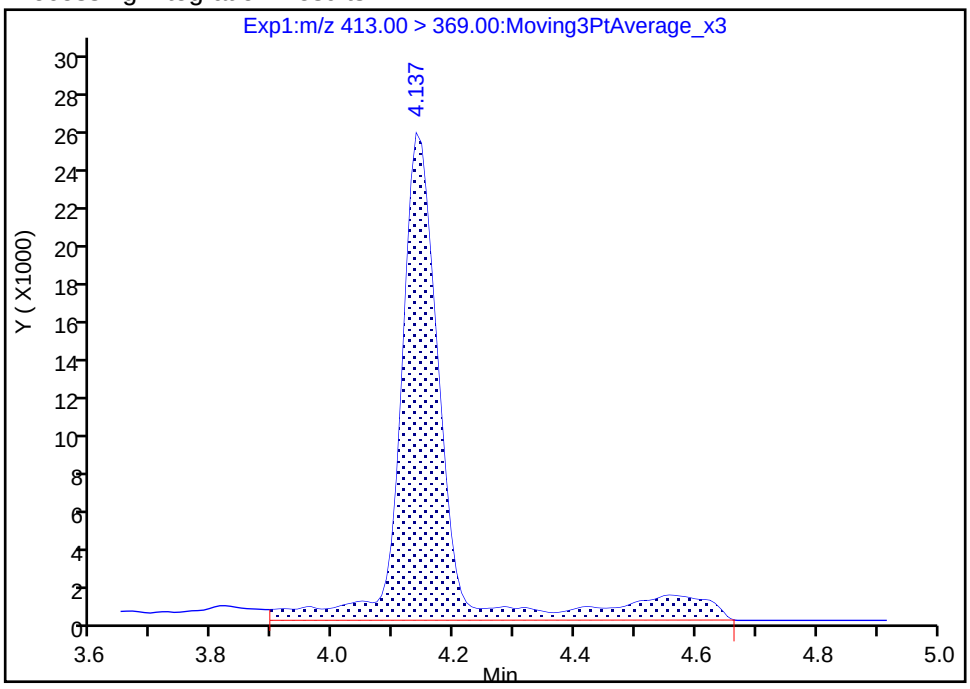
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0008.d
Injection Date: 03-Jun-2020 20:49:03 Instrument ID: A18
Lims ID: IC STD 1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

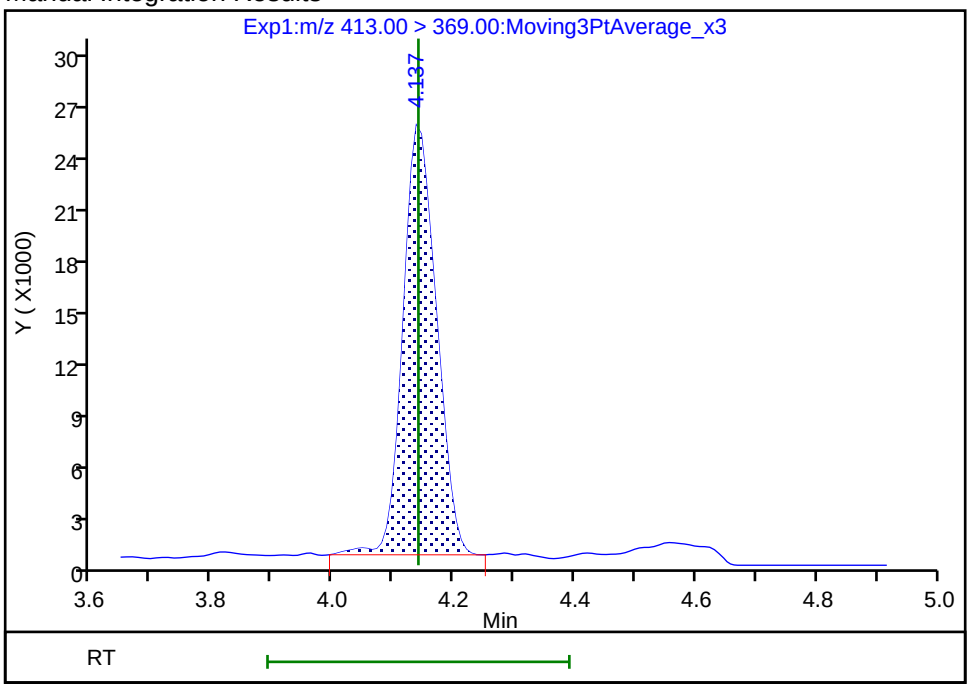
Processing Integration Results

RT: 4.14
Area: 128793
Amount: 0.035302
Amount Units: ng/ml



Manual Integration Results

RT: 4.14
Area: 97039
Amount: 0.028383
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:54:24
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

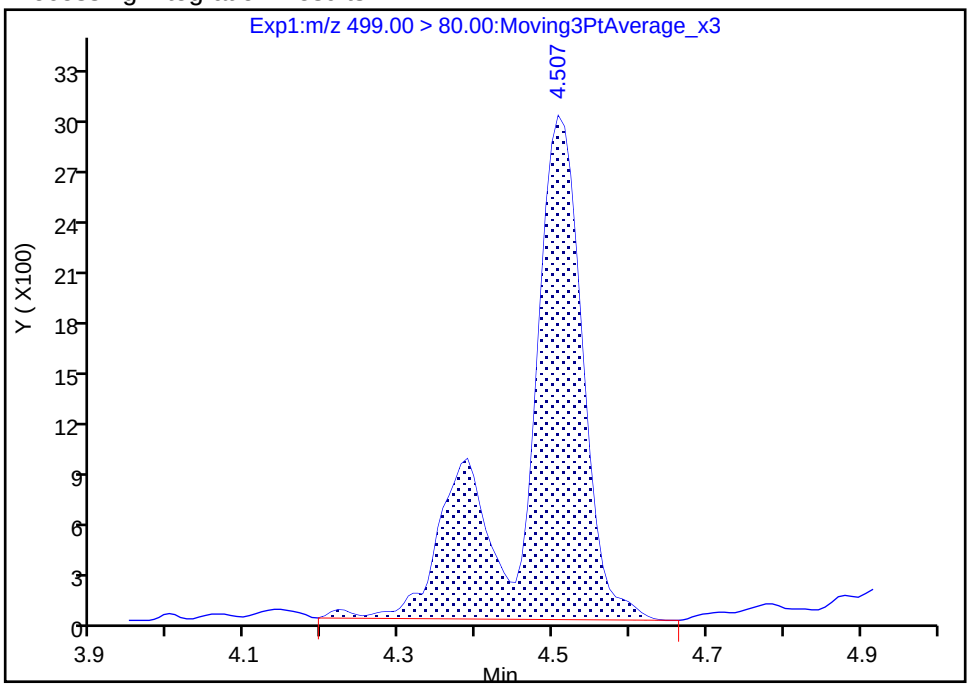
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0008.d
Injection Date: 03-Jun-2020 20:49:03 Instrument ID: A18
Lims ID: IC STD 1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

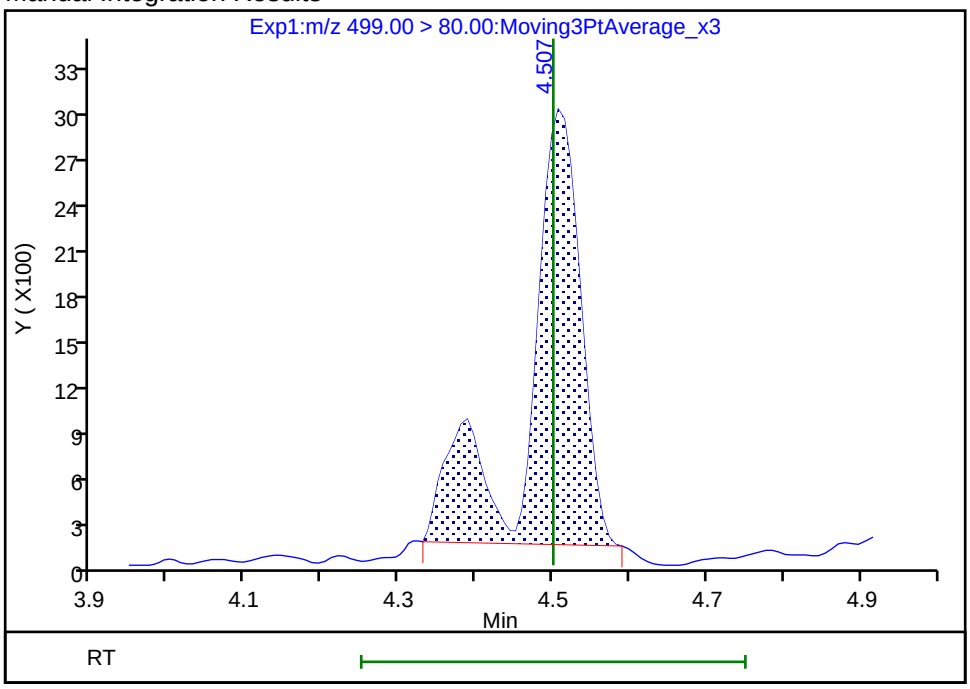
Processing Integration Results

RT: 4.51
Area: 16000
Amount: 0.027136
Amount Units: ng/ml



Manual Integration Results

RT: 4.51
Area: 13358
Amount: 0.022472
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:54:34
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

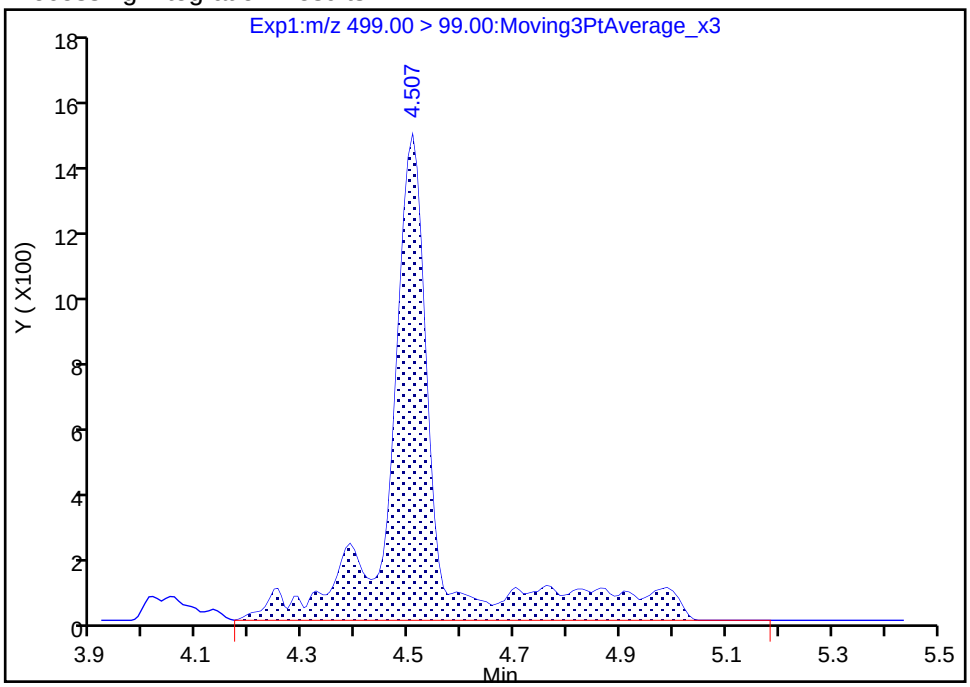
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0008.d				
Injection Date:	03-Jun-2020 20:49:03	Instrument ID:	A18		
Lims ID:	IC STD 1				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

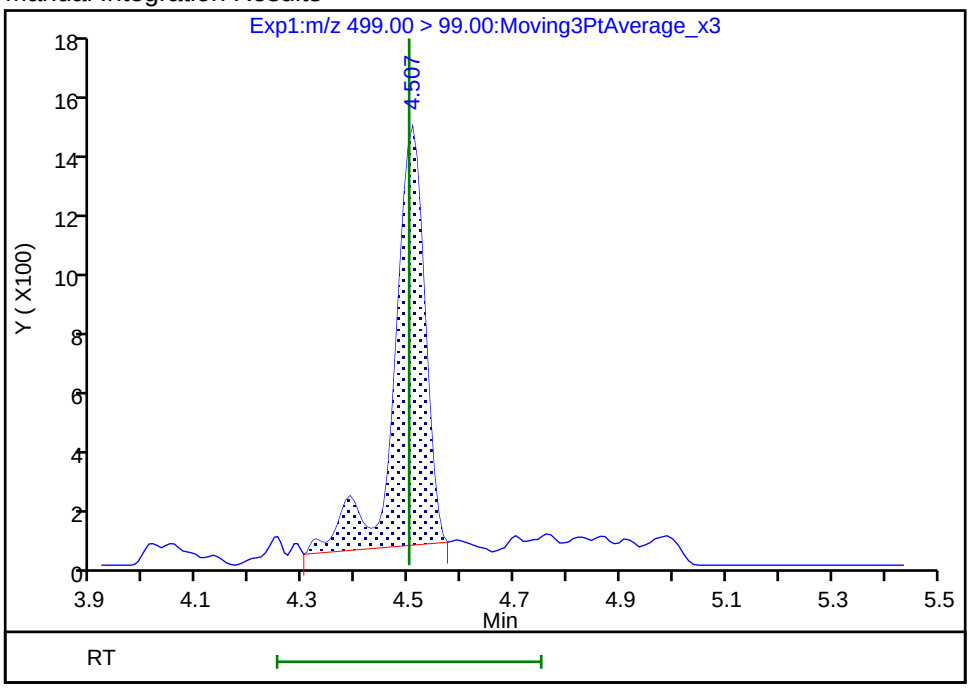
Processing Integration Results

RT: 4.51
Area: 9201
Amount: 0.027136
Amount Units: ng/ml



Manual Integration Results

RT: 4.51
Area: 5742
Amount: 0.022472
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:54:51
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

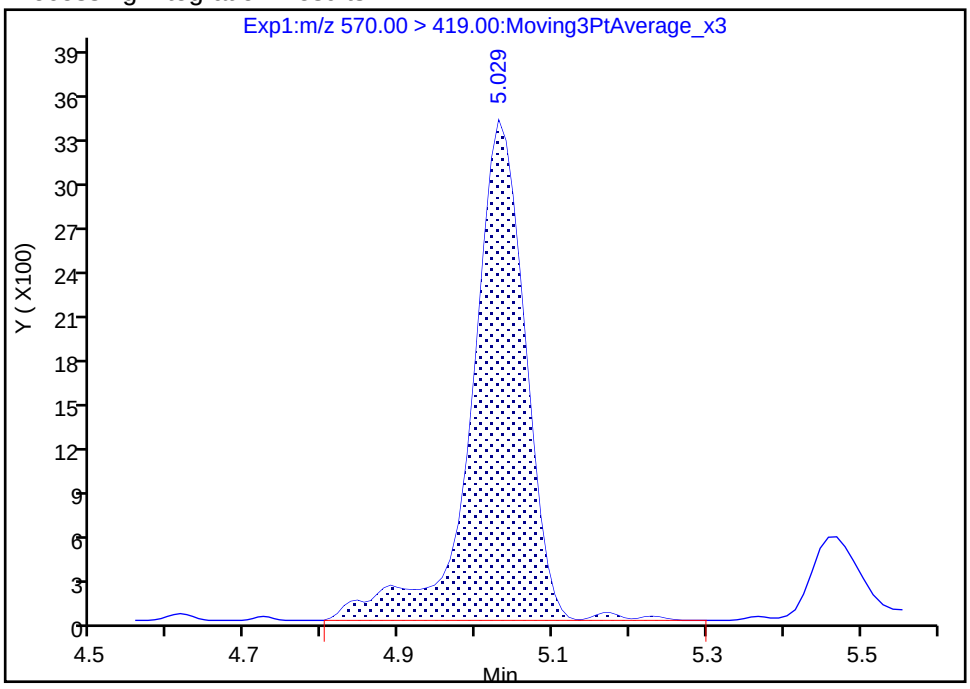
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0008.d				
Injection Date:	03-Jun-2020 20:49:03	Instrument ID:	A18		
Lims ID:	IC STD 1				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	1	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 NMeFOSAA, CAS: 2355-31-9

Signal: 1

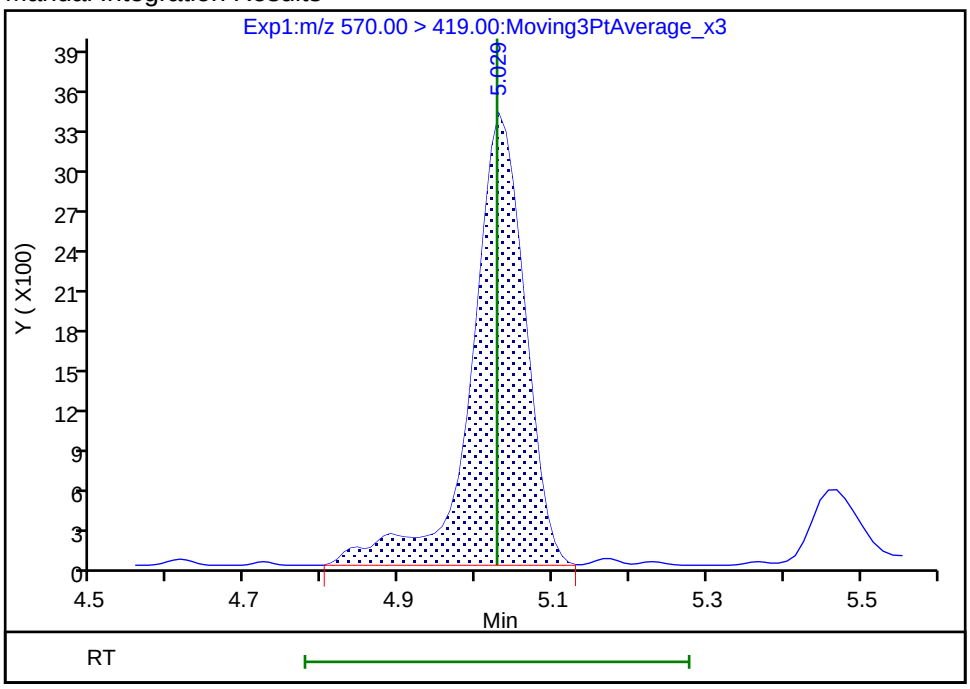
Processing Integration Results

RT: 5.03
Area: 16645
Amount: 0.022043
Amount Units: ng/ml



Manual Integration Results

RT: 5.03
Area: 16470
Amount: 0.022344
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:55:24
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

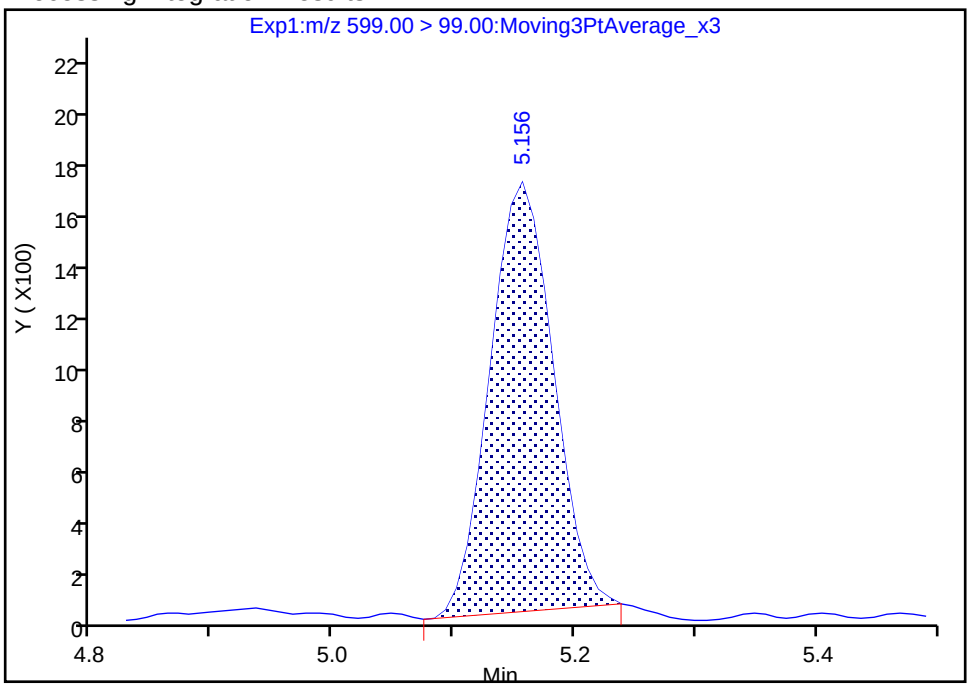
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0008.d
Injection Date: 03-Jun-2020 20:49:03 Instrument ID: A18
Lims ID: IC STD 1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

42 Perfluorodecanesulfonic acid, CAS: 335-77-3

Signal: 2

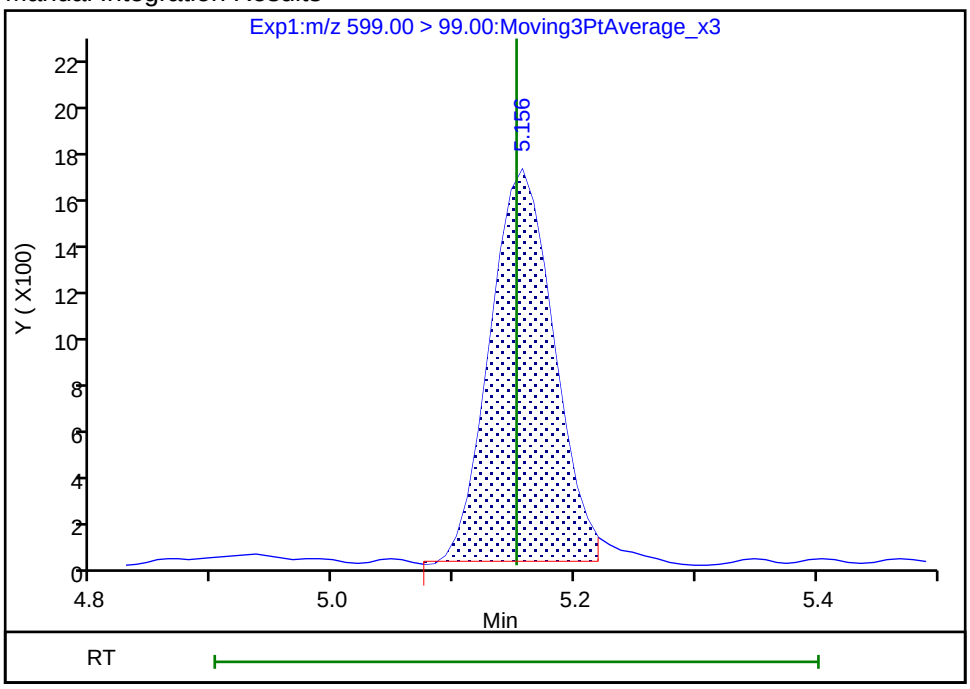
Processing Integration Results

RT: 5.16
Area: 6066
Amount: 0.022835
Amount Units: ng/ml



Manual Integration Results

RT: 5.16
Area: 6150
Amount: 0.022835
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:55:43
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

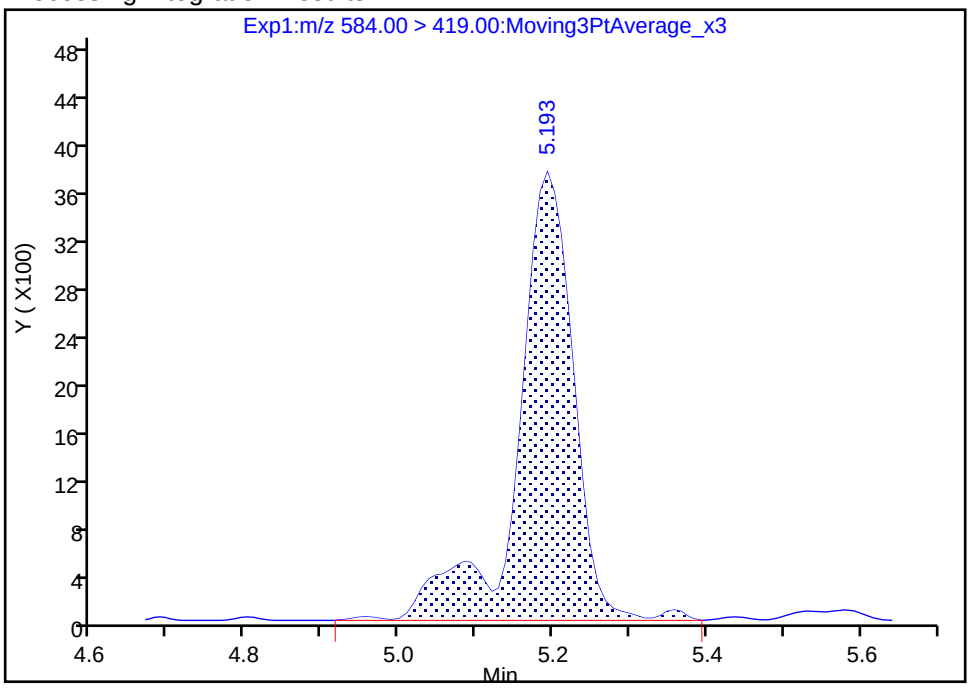
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0008.d
Injection Date: 03-Jun-2020 20:49:03 Instrument ID: A18
Lims ID: IC STD 1
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

46 NEtFOSA, CAS: 2991-50-6

Signal: 1

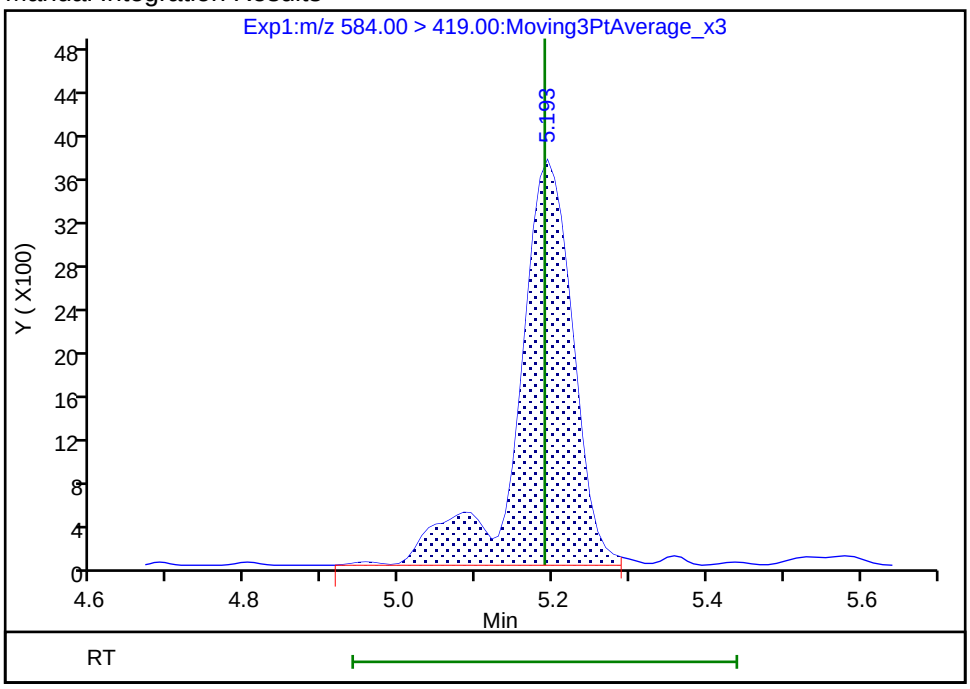
Processing Integration Results

RT: 5.19
Area: 18988
Amount: 0.023699
Amount Units: ng/ml



Manual Integration Results

RT: 5.19
Area: 18712
Amount: 0.023645
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:55:54
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0009.d
Lims ID: IC STD 2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 03-Jun-2020 20:58:10 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: IC STD 2 (020)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 04-Jun-2020 10:32:22 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1046

First Level Reviewer: duranl Date: 04-Jun-2020 05:59:36
Ratio Calibration: Average of Initial Calibration

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	2.589	2.579	0.010	0.625	9977461	2.38		95.2	8504	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.589	2.581	0.008	1.000	163497	0.0481		96.2	51.7	
D 4 13C5 PFPeA										
267.90 > 223.00	2.961	2.957	0.004	0.715	9088136	2.42		96.7	5146	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.961	2.959	0.002	1.000	188192	0.0538		108	58.2	
D 9 13C3 PFBS										
301.90 > 80.00	2.996	2.998	-0.002	0.724	6825823	2.32		99.8	7713	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.996	3.003	-0.007	1.000	119474	0.0417	Target=2.25	94.4	174	
298.90 > 99.00	2.996	3.003	-0.007	1.000	53549		2.23(1.13-3.38)	94.4	56.3	
8 4:2 FTS										
327.00 > 307.00	3.297	3.297	0.0	1.000	46617	0.0443		94.8	957	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.297	3.297	0.0	0.797	1172907	2.45		105	1697	
D 11 13C2 PFHxA										
315.00 > 270.00	3.340	3.339	0.001	0.807	8790275	2.35		93.9	6788	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.340	3.339	0.001	1.000	170072	0.0520	Target=11.49	104	76.5	
313.00 > 119.00	3.340	3.339	0.001	1.000	15906		10.69(5.74-17.23)	104	20.7	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.361	3.359	0.002	1.122	94329	0.0448	Target=2.74	95.6	178	
349.00 > 99.00	3.361	3.359	0.002	1.122	32233		2.93(1.37-4.12)	95.6	123	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.457	3.459	-0.002	0.835	1726198	2.36		94.4	4500	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.457	3.459	-0.002	1.000	31217	0.0478		95.6	180	
D 18 13C4 PFHpA										
367.00 > 322.00	3.739	3.743	-0.003	0.903	8194966	2.47		98.6	7470	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.739	3.743	-0.003	1.000	156473	0.0484	Target=3.25	96.9	62.6	
363.00 > 169.00	3.739	3.743	-0.003	1.000	45730		3.42(1.62-4.87)	96.9	128	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.749	3.752	-0.003	1.000	77581	0.0477	Target=2.90	105	233	
399.00 > 99.00	3.749	3.752	-0.003	1.000	28065		2.76(1.45-4.35)	105	56.6	
D 17 18O2 PFHxS										
403.00 > 84.00	3.749	3.752	-0.003	0.906	3344126	2.38		101	5056	
19 DONA										
377.00 > 251.00	3.788	3.794	-0.006	0.842	411783	0.0430	Target=2.01	91.4	774	
377.00 > 85.00	3.788	3.794	-0.006	0.842	200848		2.05(1.00-3.01)	91.4	435	
21 6:2 FTS										
427.00 > 407.00	4.115	4.117	-0.002	1.000	39304	0.0477		101	260	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.115	4.117	-0.002	0.994	977136	2.54		107	2259	
$ 26 13C8 PFOA										
421.00 > 376.00	4.131	4.134	-0.003	0.998	6494112	2.36		96.5	7315	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.139	4.136	0.003	0.919	41663	0.0457	Target=3.25	96.1	246	
449.00 > 99.00	4.131	4.136	-0.005	0.918	13875		3.00(1.63-4.88)	96.1	88.9	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.139	4.141	-0.002	1.000	182461	0.0562	Target=2.35	112	77.7	M
413.00 > 169.00	4.139	4.141	-0.002	1.000	74571		2.45(1.18-3.53)	112	114	
D 25 13C4 PFOA										
417.00 > 372.00	4.139	4.139	0.0	1.000	8011359	2.41		96.2	9030	
* 23 13C2 PFOA										
415.00 > 370.00	4.139	4.141	-0.002		8407461	2.50			6380	
$ 28 13C8 PFOS										
507.00 > 99.00	4.494	4.496	-0.002	1.086	516256	2.51		105	2774	
D 27 13C4 PFOS										
503.00 > 80.00	4.502	4.499	0.003	1.088	1437707	2.41		101	2411	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.502	4.500	0.002	1.000	26575	0.0438	Target=2.41	94.4	86.9	M
499.00 > 99.00	4.502	4.500	0.002	1.000	11231		2.37(1.21-3.62)	94.4	45.6	M
31 Perfluorononanoic acid										
463.00 > 419.00	4.510	4.512	-0.002	1.000	127081	0.0506	Target=6.74	101	55.7	
463.00 > 169.00	4.510	4.512	-0.002	1.000	18232		6.97(3.37-10.11)	101	49.0	
D 30 13C5 PFNA										
468.00 > 423.00	4.510	4.513	-0.003	1.089	6526260	2.41		96.2	11771	
32 9ClFOS										
531.00 > 351.00	4.695	4.694	0.001	1.043	128578	0.0432		92.7	345	
D 33 13C8 FOSA										
506.00 > 78.00	4.829	4.832	-0.003	1.167	3360141	2.54		102	4297	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.837	4.835	0.002	1.002	59352	0.0481		96.1	347	
35 Perfluorononanesulfonic acid										M
549.00 > 80.00	4.846	4.841	0.005	1.076	21304	0.0453	Target=1.37	94.4	112	M
549.00 > 99.00	4.846	4.841	0.005	1.076	16400		1.30(0.69-2.06)	94.4	89.0	M
D 39 13C2 PFDA										
515.00 > 470.00	4.863	4.862	0.001	1.175	7315383	2.50		99.8	12407	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.863	4.862	0.001	1.000	119347	0.0456	Target=8.07	91.1	128	
513.00 > 169.00	4.863	4.862	0.001	1.000	14864		8.03(4.04-12.11)	91.1	57.6	
36 8:2 FTS										
527.00 > 507.00	4.863	4.864	-0.001	1.000	35773	0.0454		94.8	596	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.863	4.864	-0.001	1.175	1228849	2.52		105	2389	
D 40 d3-NMeFOSAA										
573.00 > 419.00	5.021	5.023	-0.002	1.213	2740635	2.52		101	3838	
41 NMeFOSAA										M
570.00 > 419.00	5.030	5.027	0.003	1.002	35975	0.0463		92.7	55.6	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.157	5.152	0.005	1.146	14072	0.0405	Target=1.31	84.0	125	
599.00 > 99.00	5.148	5.152	-0.004	1.144	12214		1.15(0.65-1.96)	84.0	60.7	
D 43 13C2 PFUnA										
565.00 > 520.00	5.175	5.178	-0.003	1.250	6775939	2.47		98.8	7428	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.175	5.179	-0.004	1.000	97171	0.0484	Target=6.70	96.8	173	
563.00 > 169.00	5.175	5.179	-0.004	1.000	14292		6.80(3.35-10.05)	96.8	66.8	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.184	5.181	0.003	1.252	2858002	2.57		103	2141	
46 NEtFOSA										M
584.00 > 419.00	5.184	5.189	-0.005	1.000	40939	0.0510		102	226	M
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.290	5.287	0.003	1.278	8655036	11.0		88.1	8118	
48 N-MeFOSE-M										
616.00 > 59.00	5.300	5.301	-0.001	1.002	35594	0.0523		105	115	
51 11ClFOS										
631.00 > 451.00	5.311	5.309	0.002	1.180	142016	0.0435		92.4	1374	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.311	5.311	0.0	1.283	1467744	2.36		94.6	31.6	
50 NMeFOSA										
512.00 > 169.00	5.311	5.316	-0.005	1.000	24517	0.0452		90.4	113	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.448	5.454	-0.006	1.316	10556803	11.8		94.7	5836	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.459	5.462	-0.003	1.000	137352	0.0538	Target=6.20	108	102	
613.00 > 169.00	5.459	5.462	-0.003	1.000	20850		6.59(3.10-9.30)	108	98.6	
D 56 13C2 PFDoA										
615.00 > 570.00	5.459	5.462	-0.003	1.319	6856554	2.37		94.7	8364	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
53 N-EtFOSE-M										
630.00 > 59.00	5.469	5.468	0.001	1.004	42146	0.0497		99.4	130	
58 10:2 FTS										
627.00 > 607.00	5.480	5.477	0.003	1.127	27842	0.0447		92.7	466	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.480	5.482	-0.002	1.324	1535112	2.41		96.3	524	
55 N-EtFOSA-M										
526.00 > 169.00	5.480	5.486	-0.006	1.000	30921	0.0482		96.4	129	
59 PFDoS										
699.00 > 80.00	5.679	5.680	-0.001	1.261	15131	0.0470	Target=2.11	97.1	119	
699.00 > 99.00	5.679	5.680	-0.001	1.261	6289		2.41(1.06-3.17)	97.1	105	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.712	5.715	-0.003	1.046	117555	0.0490	Target=4.98	98.1	260	
663.00 > 169.00	5.712	5.715	-0.003	1.046	24369		4.82(2.49-7.47)	98.1	107	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.948	5.945	0.003	1.437	5918965	2.44		97.7	7081	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.948	5.945	0.003	1.000	16396	0.0520	Target=0.96	104	109	
713.00 > 219.00	5.937	5.945	-0.008	0.998	16411		1.00(0.48-1.43)	104	259	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.351	6.352	-0.001	1.534	3941393	2.30		91.8	5444	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.351	6.353	-0.002	1.000	99393	0.0530	Target=5.10	106	111	
813.00 > 169.00	6.351	6.353	-0.002	1.000	18207		5.46(2.55-7.64)	106	217	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.749	6.748	0.001	1.063	38652	0.0457	Target=5.50	91.4	48.8	
913.00 > 169.00	6.742	6.748	-0.006	1.062	7140		5.41(2.75-8.25)	91.4	193	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL2_00020 Amount Added: 1.00 Units: mL

Report Date: 04-Jun-2020 10:32:23 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0009.d

Injection Date: 03-Jun-2020 20:58:10 Instrument ID: A18

Lims ID: IC STD 2

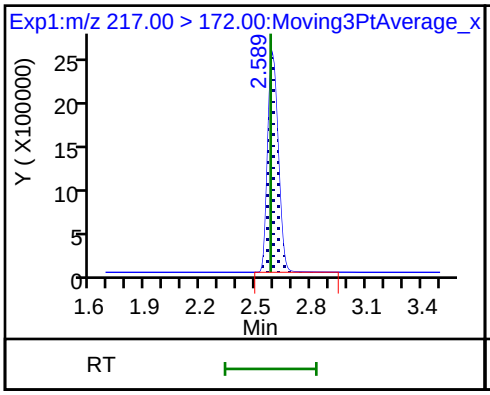
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3

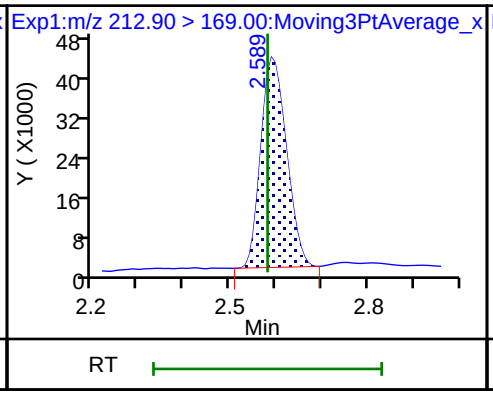
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

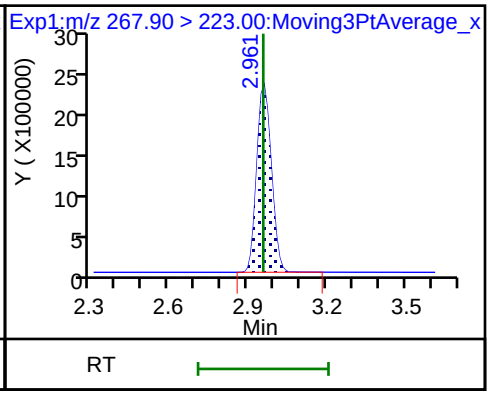
D 1 13C4 PFBA



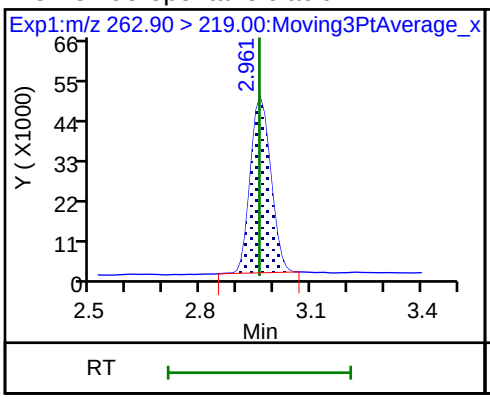
2 Perfluorobutanoic acid



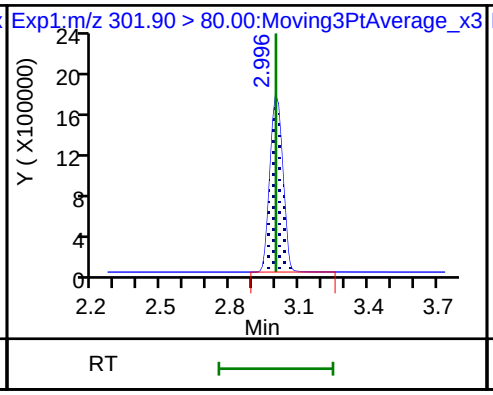
D 4 13C5 PFPeA



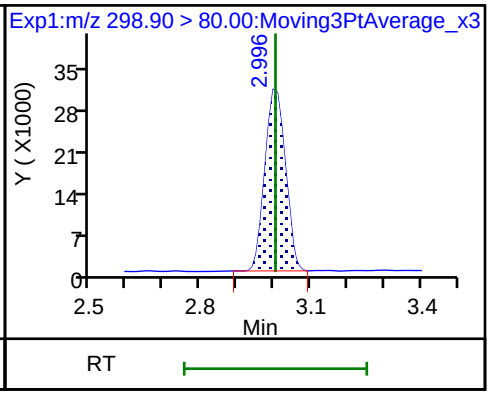
5 Perfluoropentanoic acid



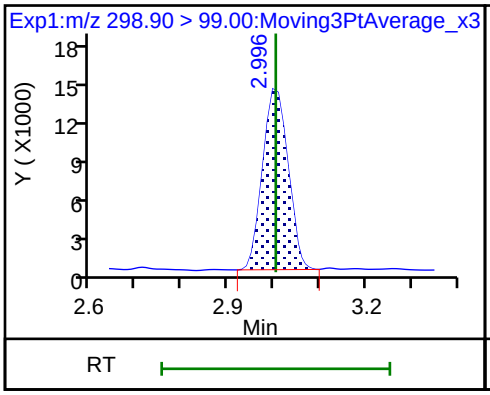
D 9 13C3 PFBS



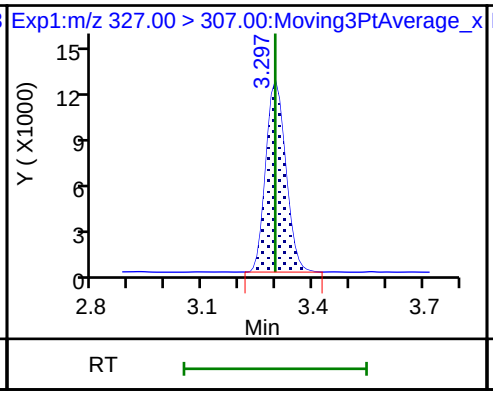
6 Perfluorobutanesulfonic acid



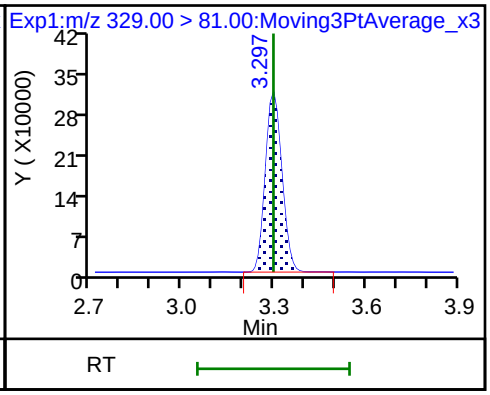
6 Perfluorobutanesulfonic acid



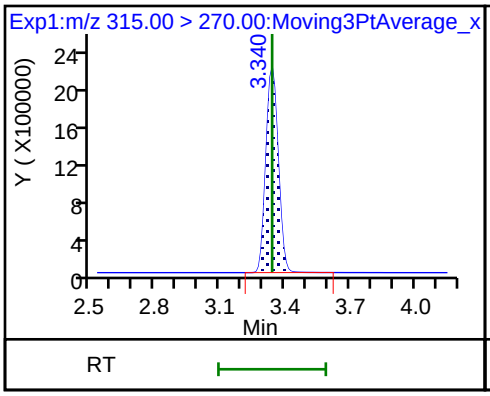
8 4:2 FTS



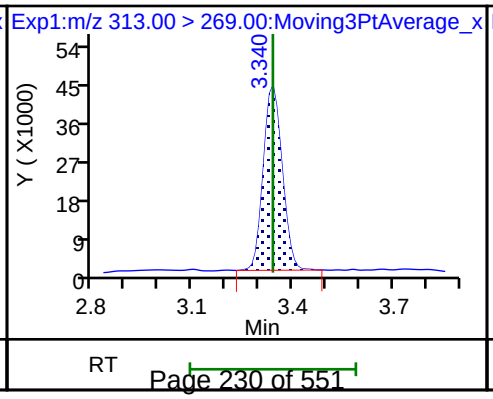
D 7 M2-4:2 FTS



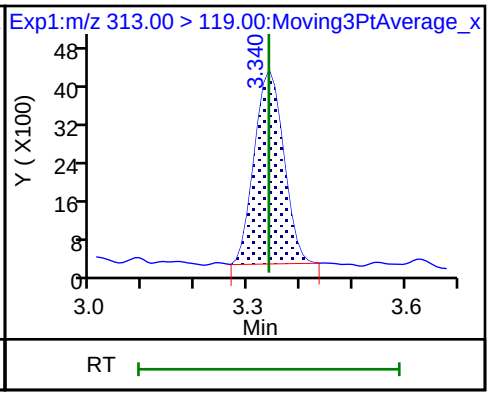
D 11 13C2 PFHxA



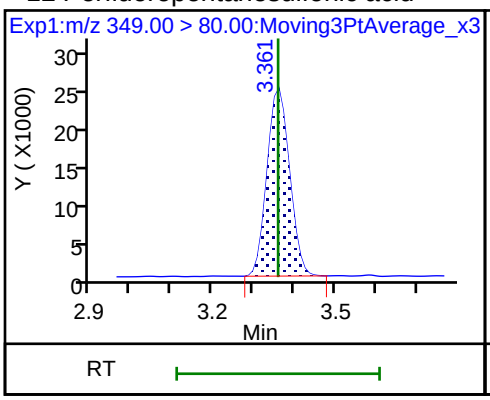
10 Perfluorohexanoic acid



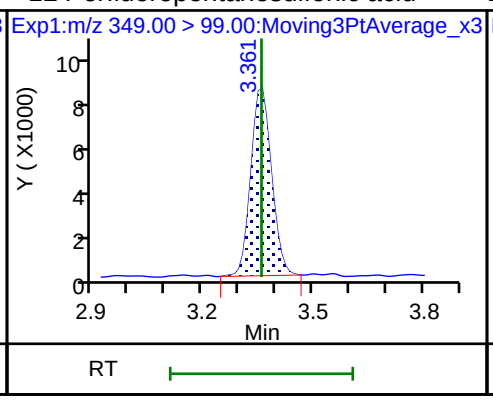
10 Perfluorohexanoic acid



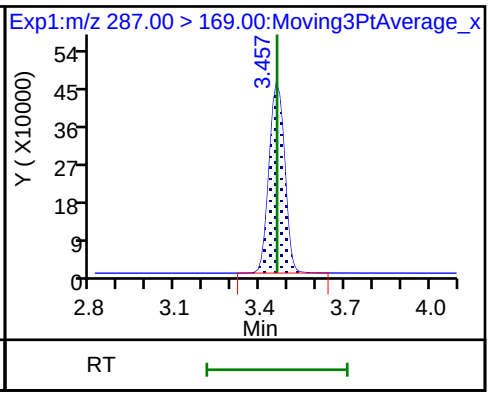
12 Perfluoropentanesulfonic acid



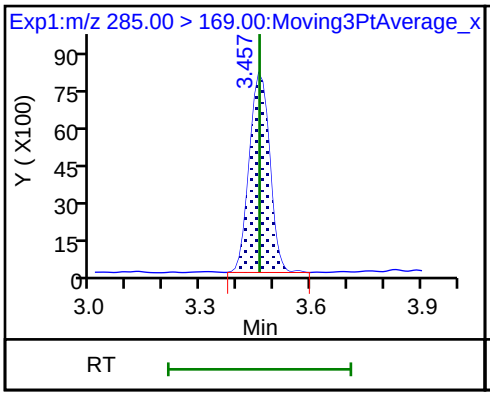
12 Perfluoropentanesulfonic acid



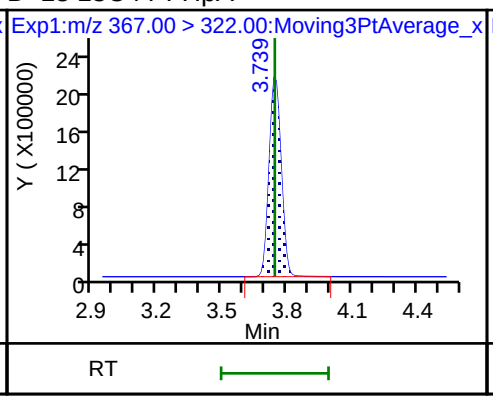
D 14 13C3 HFPO-DA



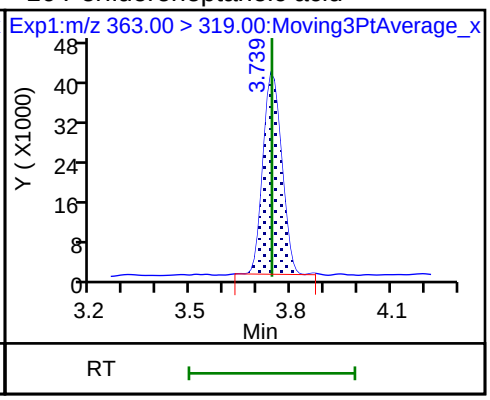
13 HPFO-DA



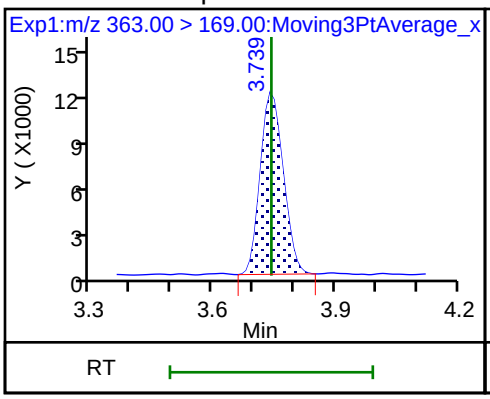
D 18 13C4 PFHpA



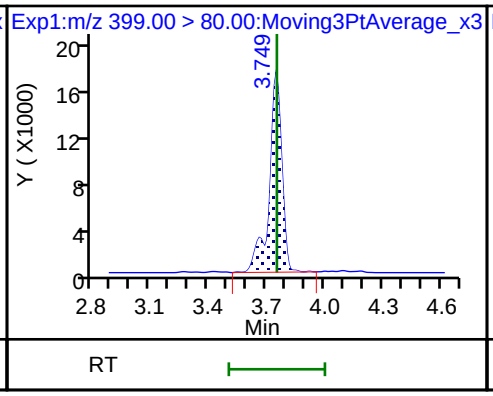
16 Perfluoroheptanoic acid



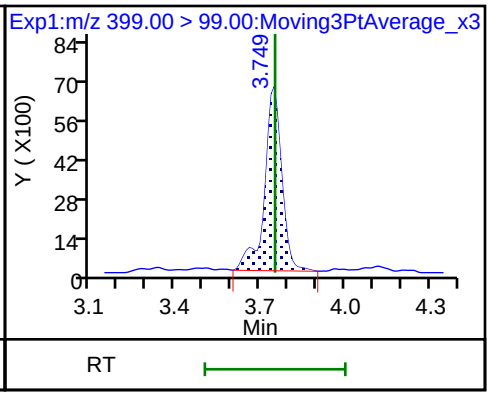
16 Perfluoroheptanoic acid



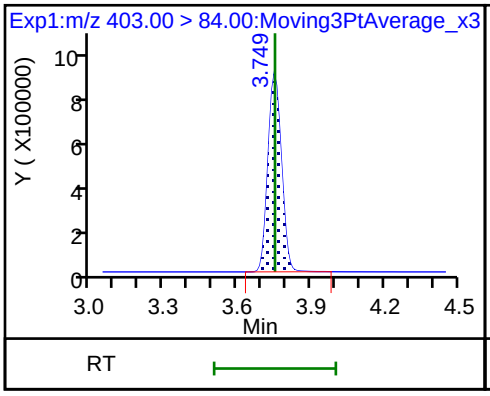
15 Perfluorohexanesulfonic acid



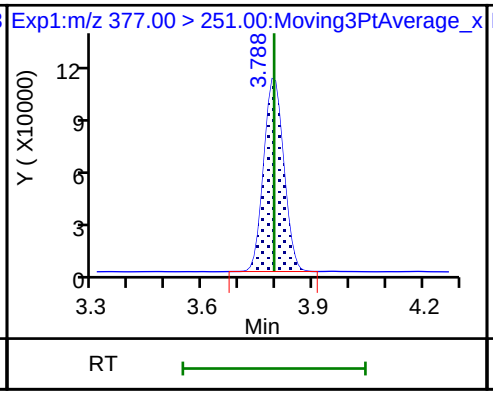
15 Perfluorohexanesulfonic acid



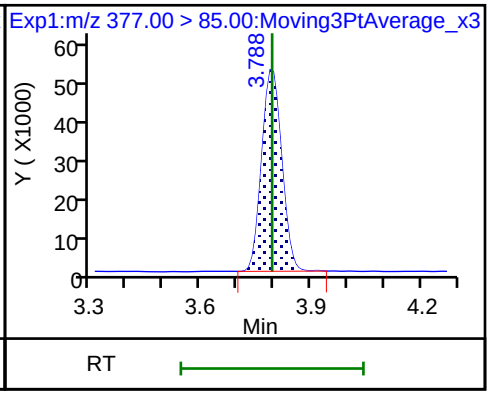
D 17 18O2 PFHxS



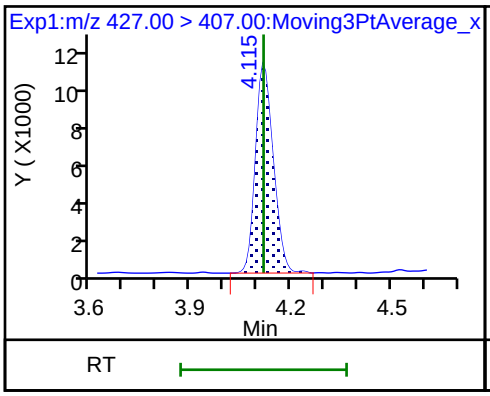
19 DONA



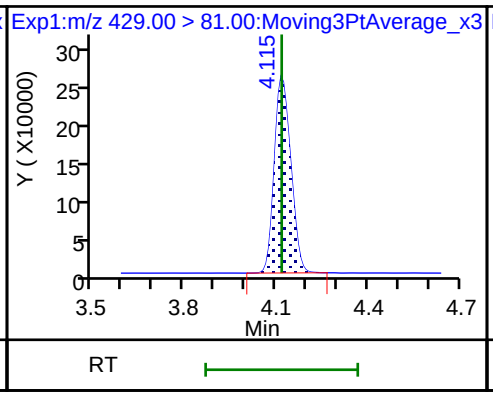
19 DONA



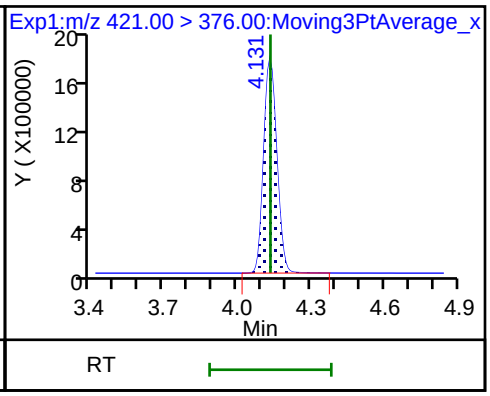
21 6:2 FTS



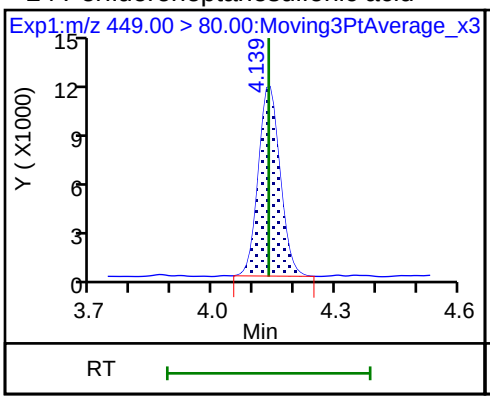
D 20 M2-6:2 FTS



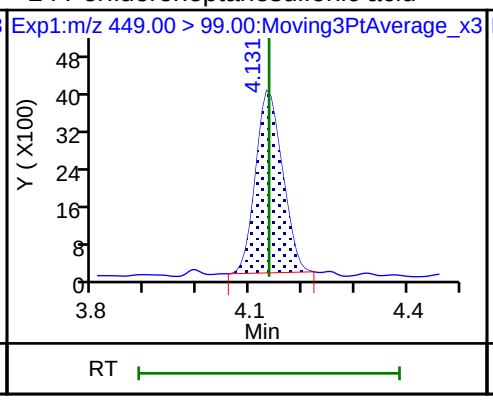
$ 26 13C8 PFOA



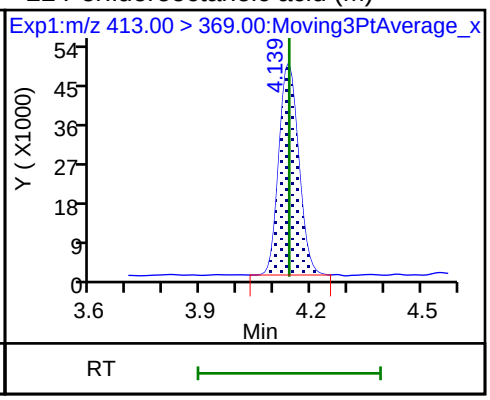
24 Perfluoroheptanesulfonic acid



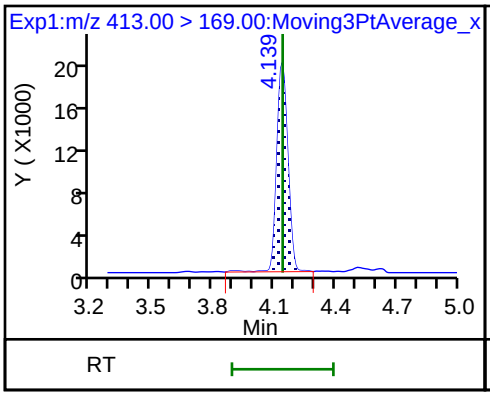
24 Perfluoroheptanesulfonic acid



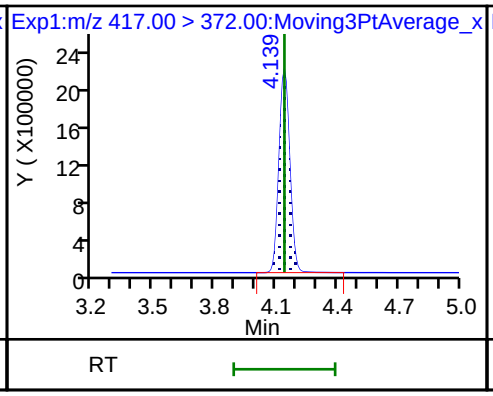
22 Perfluorooctanoic acid (M)



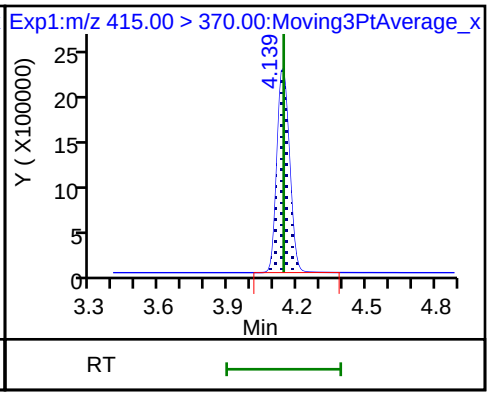
22 Perfluorooctanoic acid



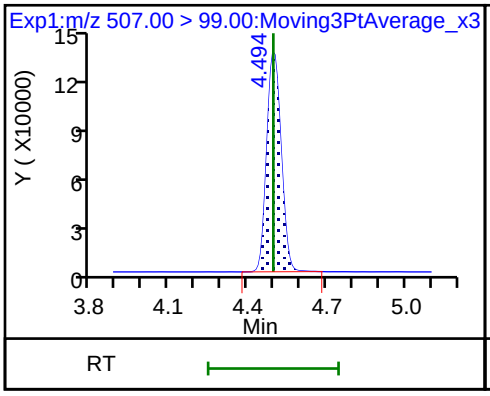
D 25 13C4 PFOA



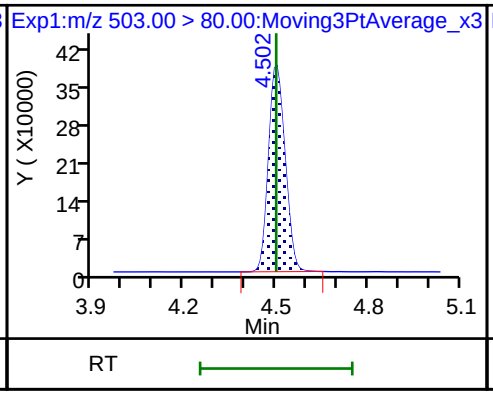
* 23 13C2 PFOA



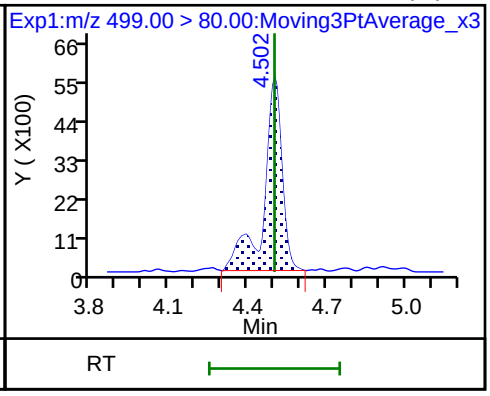
$ 28 13C8 PFOS



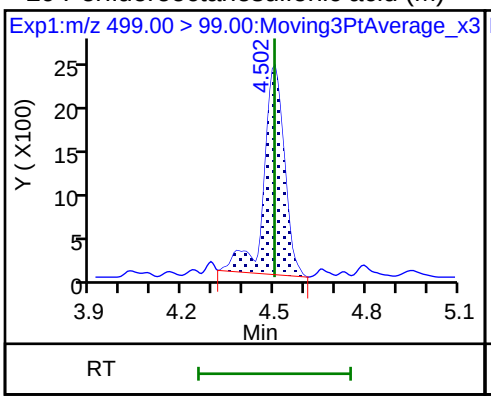
D 27 13C4 PFOS



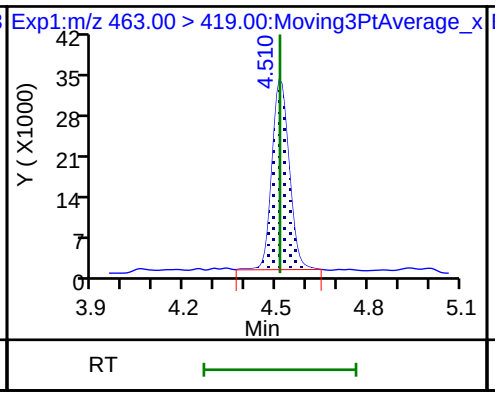
29 Perfluorooctanesulfonic acid (M)



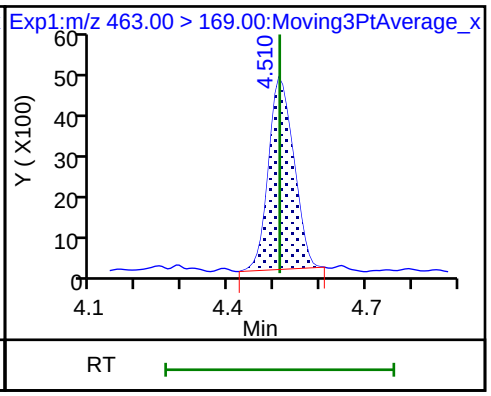
29 Perfluorooctanesulfonic acid (M)



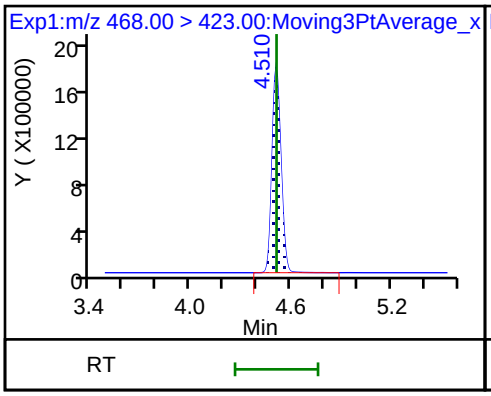
31 Perfluorononanoic acid



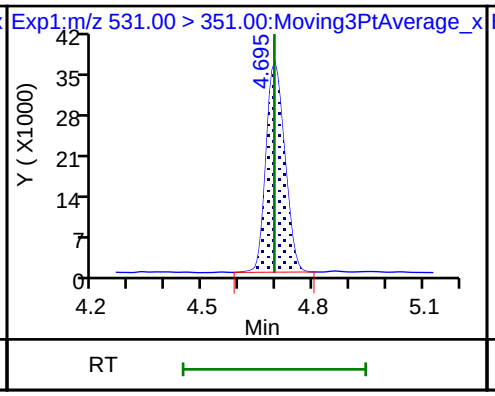
31 Perfluorononanoic acid



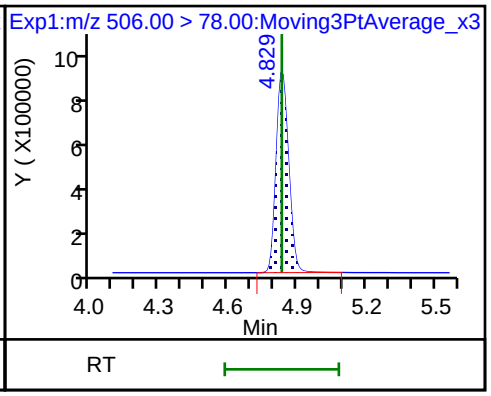
D 30 13C5 PFNA



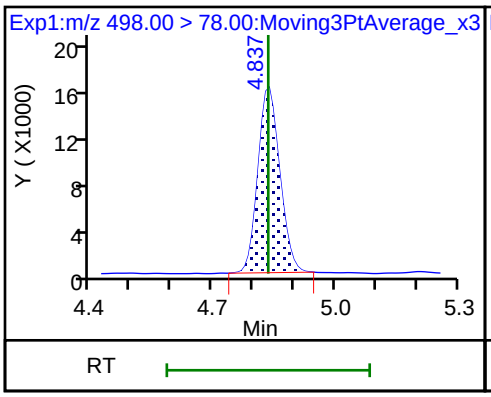
32 9ClFOS



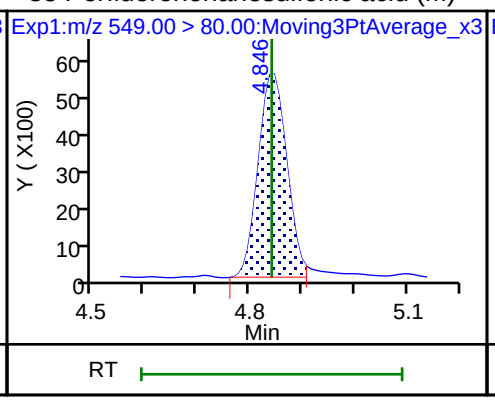
D 33 13C8 FOSA



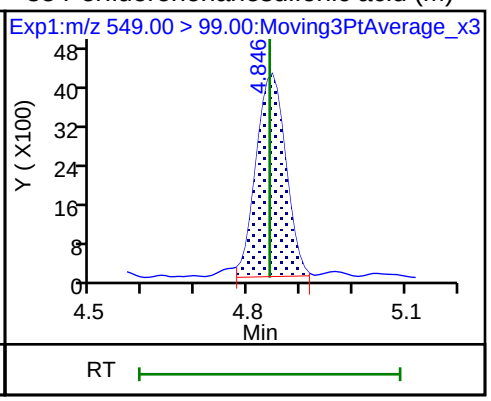
34 Perfluorooctanesulfonamide



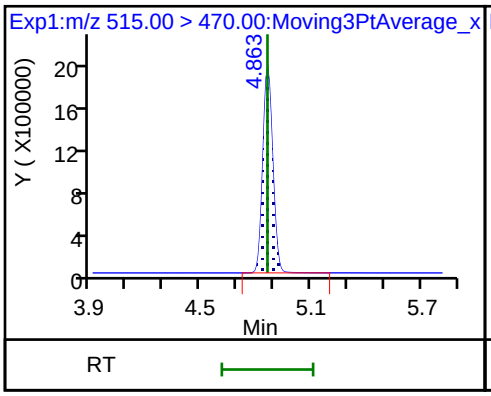
35 Perfluorononanesulfonic acid (M)



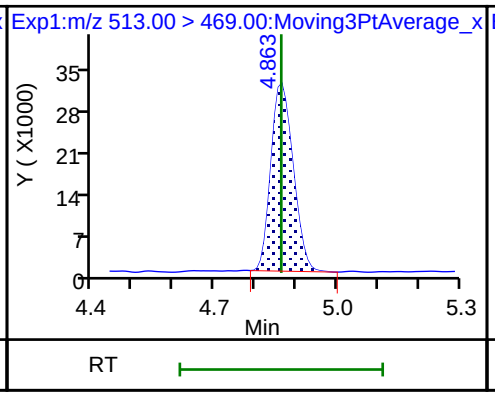
35 Perfluorononanesulfonic acid (M)



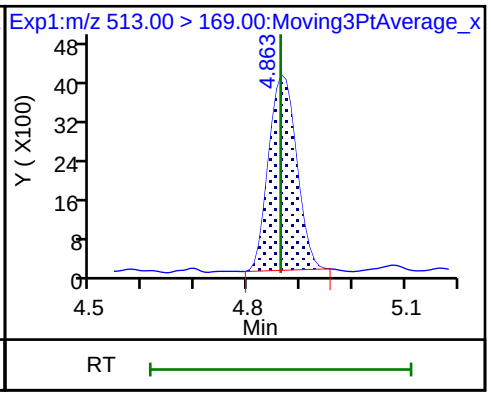
D 39 13C2 PFDA



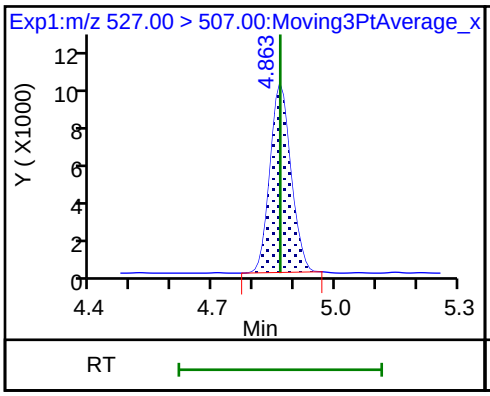
37 Perfluorodecanoic acid



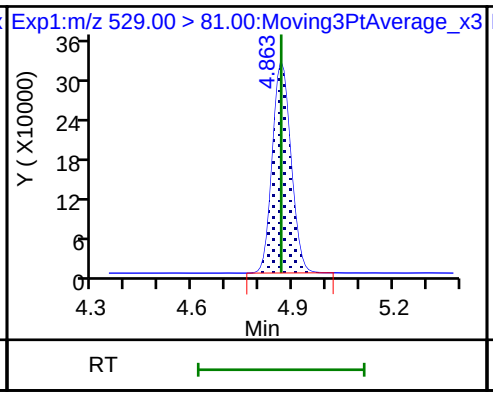
37 Perfluorodecanoic acid



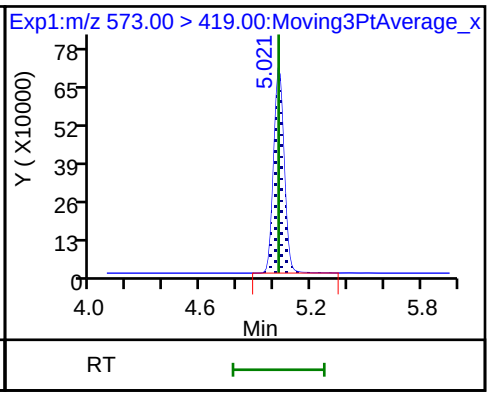
36 8:2 FTS



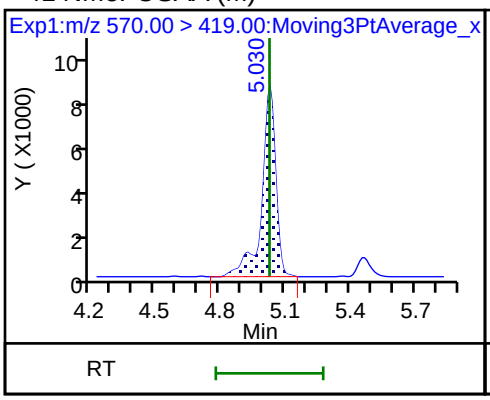
D 38 M2-8:2 FTS



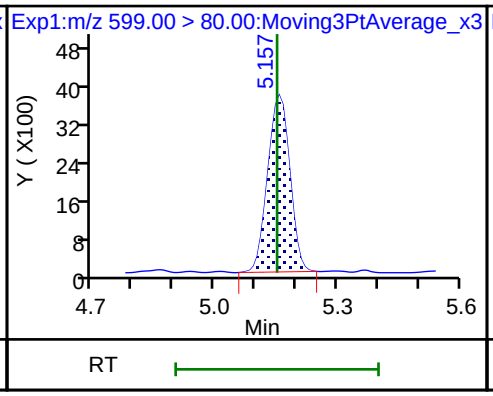
D 40 d3-NMeFOSAA



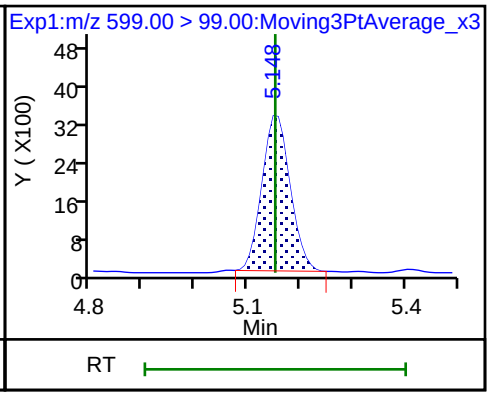
41 NMeFOSAA (M)



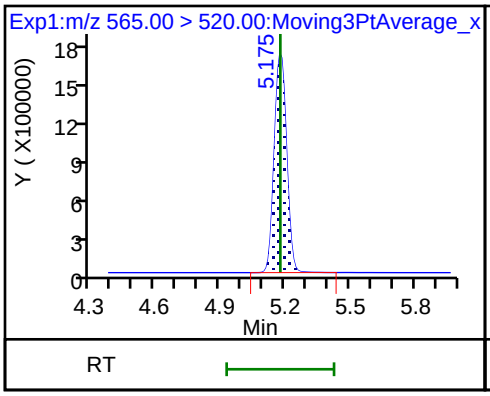
42 Perfluorodecanesulfonic acid



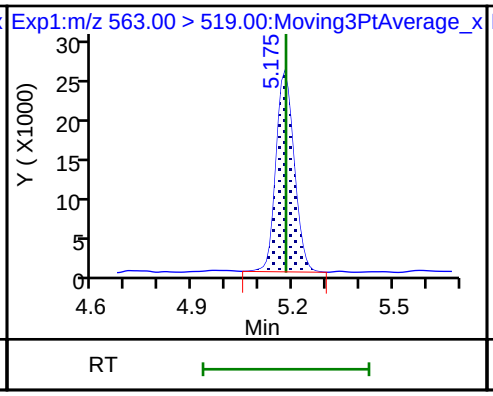
42 Perfluorodecanesulfonic acid



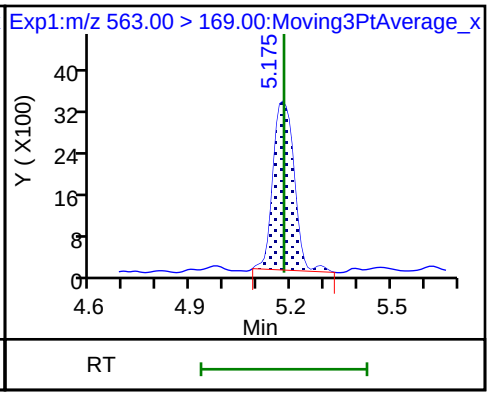
D 43 13C2 PFUnA



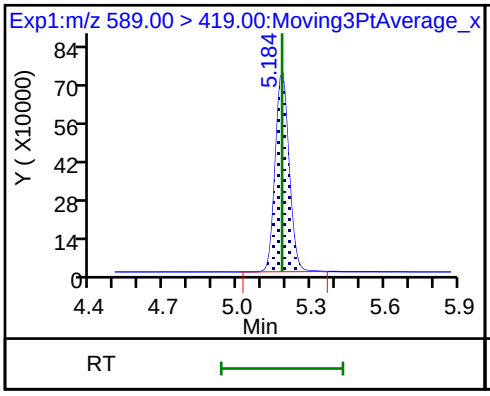
45 Perfluoroundecanoic acid



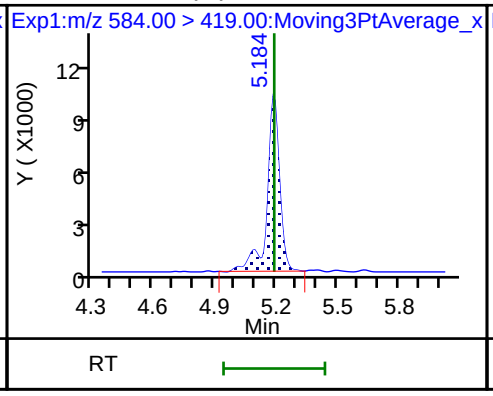
45 Perfluoroundecanoic acid



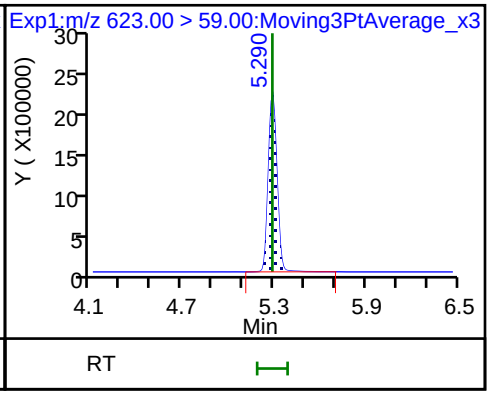
D 44 d5-NEtFOSAA



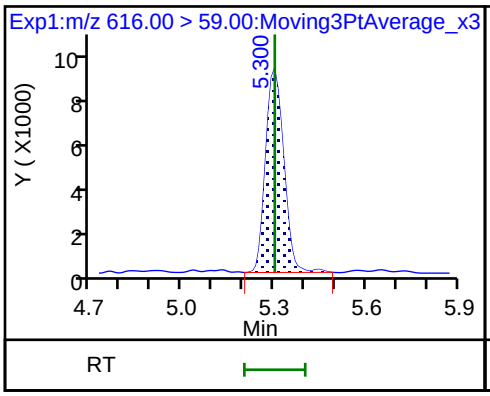
46 NEtFOSA (M)



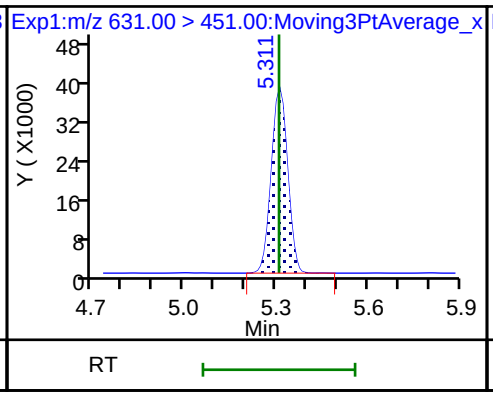
D 47 d7-N-MeFOSE-M



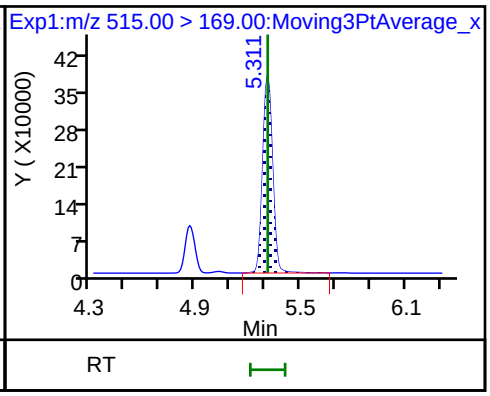
48 N-MeFOSE-M



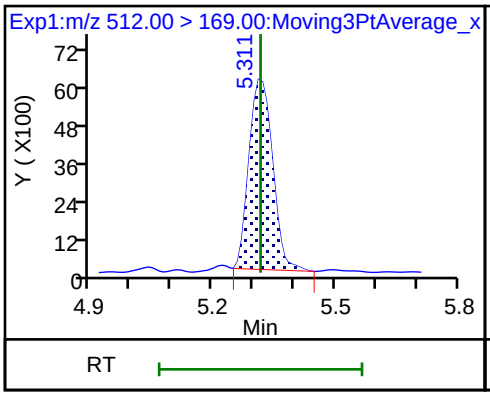
51 11ClFOS



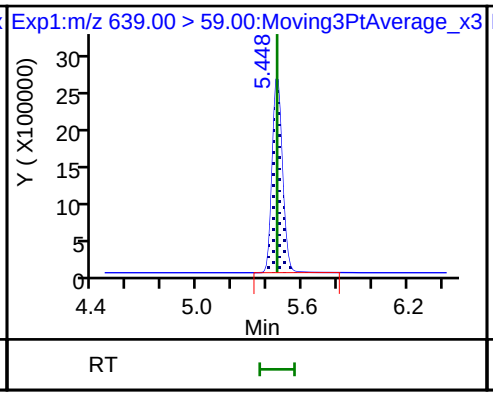
D 49 d-N-MeFOSA-M



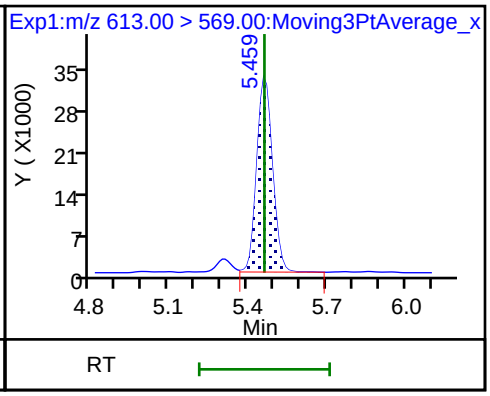
50 NMeFOSA



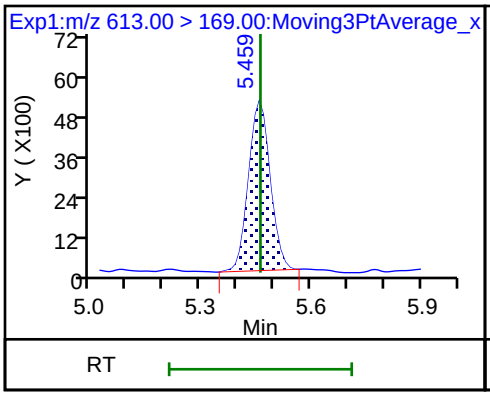
D 52 d9-N-EtFOSE-M



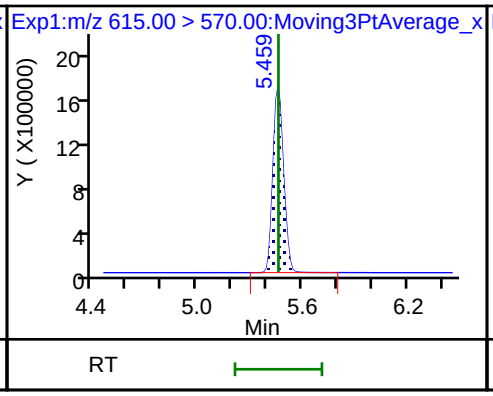
57 Perfluorododecanoic acid



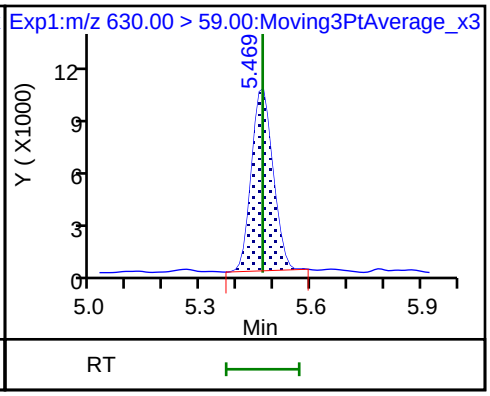
57 Perfluorododecanoic acid



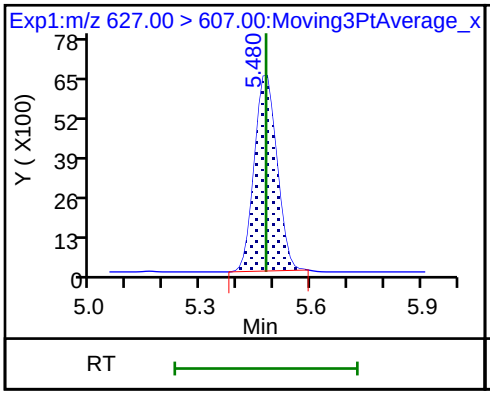
D 56 13C2 PFDoA



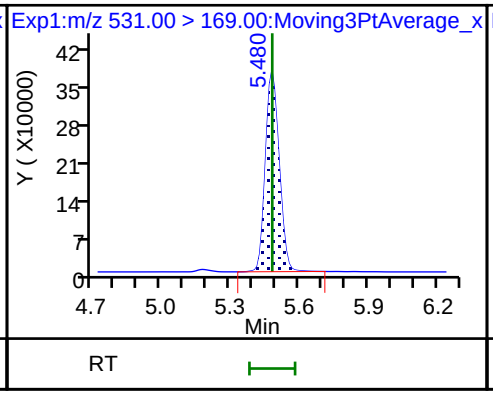
53 N-EtFOSE-M



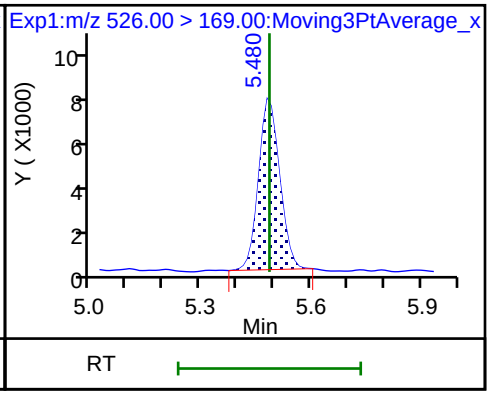
58 10:2 FTS



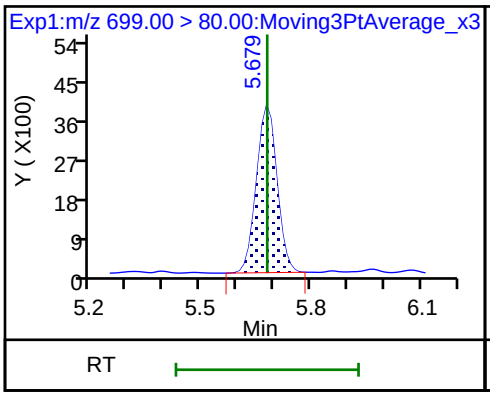
D 54 d-N-EtFOSA-M



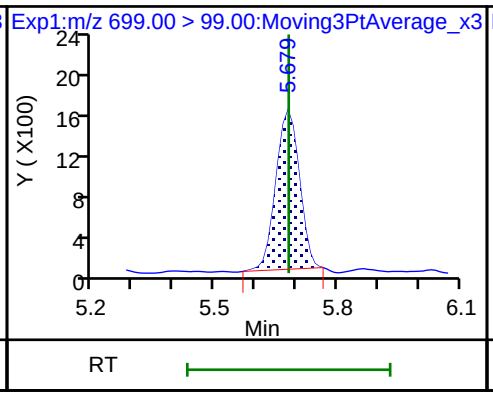
55 N-EtFOSA-M



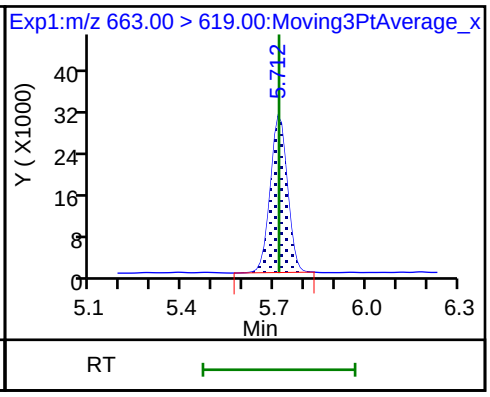
59 PFDoS



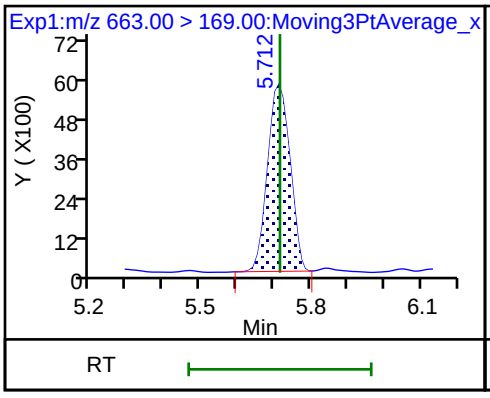
59 PFDoS



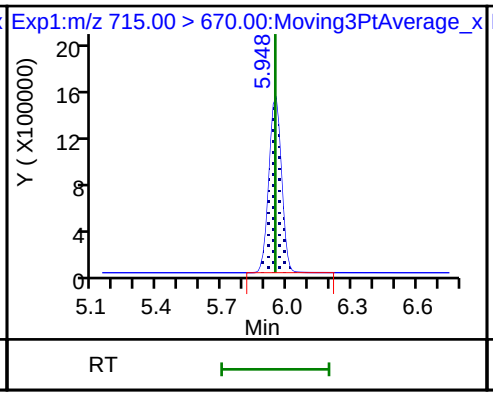
60 Perfluorotridecanoic acid



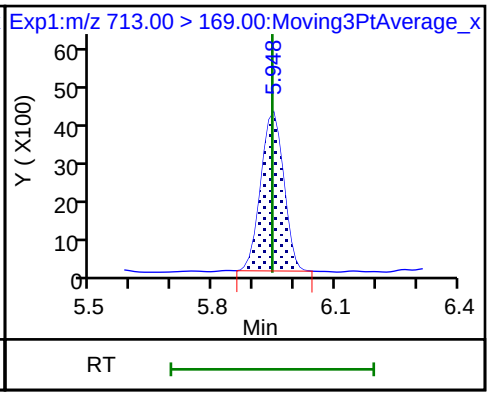
60 Perfluorotridecanoic acid



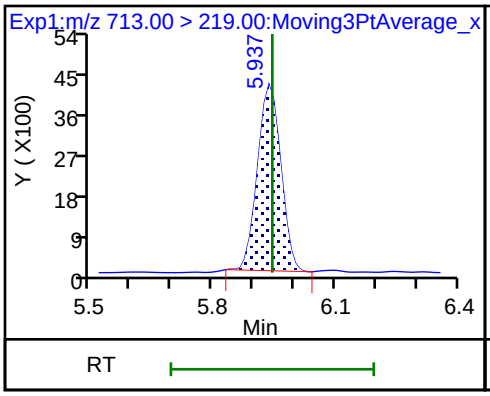
D 61 13C2 PFTeDA



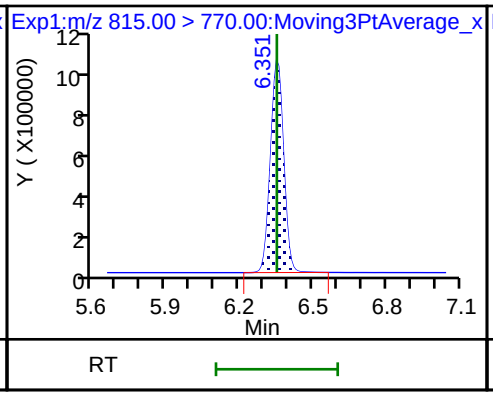
62 Perfluorotetradecanoic acid



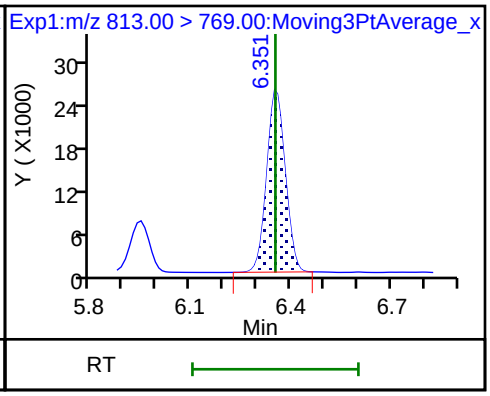
62 Perfluorotetradecanoic acid



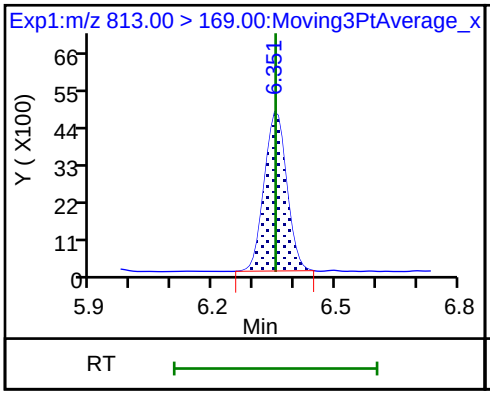
D 64 13C2 PFHxDA



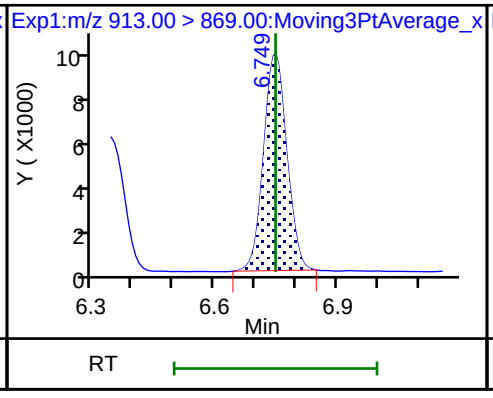
63 Perfluorohexadecanoic acid



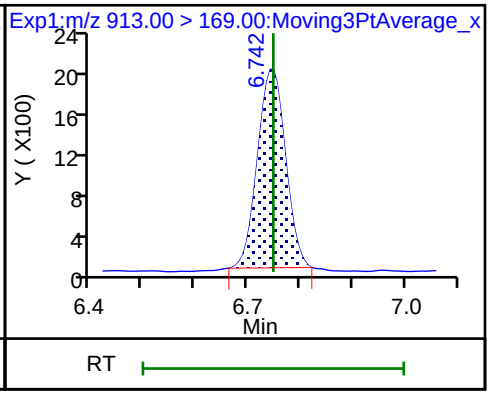
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

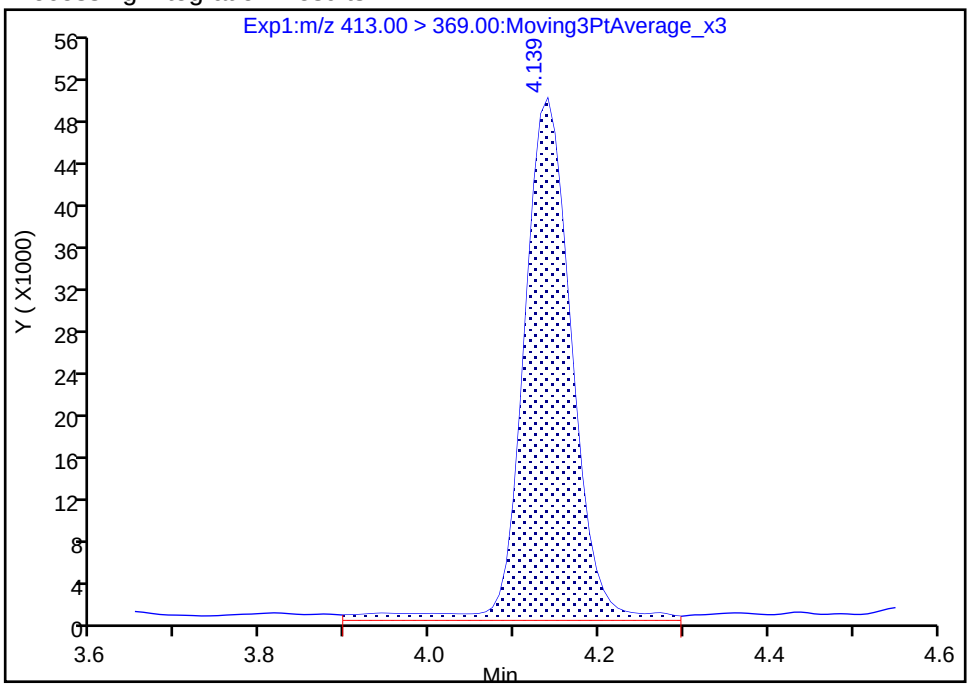
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0009.d
Injection Date: 03-Jun-2020 20:58:10 Instrument ID: A18
Lims ID: IC STD 2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

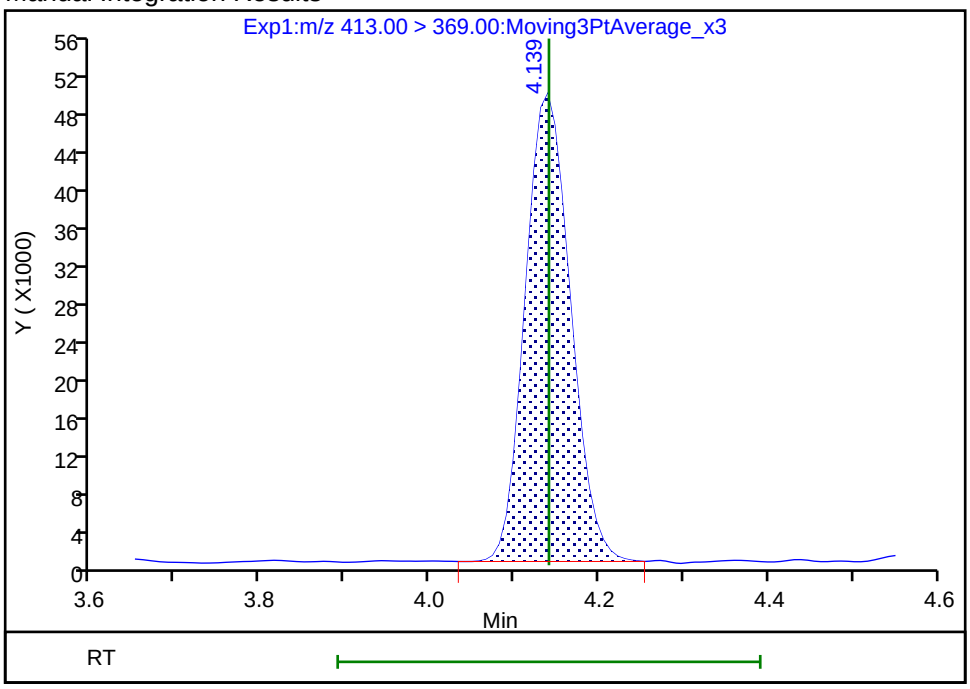
Processing Integration Results

RT: 4.14
Area: 196840
Amount: 0.059826
Amount Units: ng/ml



Manual Integration Results

RT: 4.14
Area: 182461
Amount: 0.056233
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:58:08
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

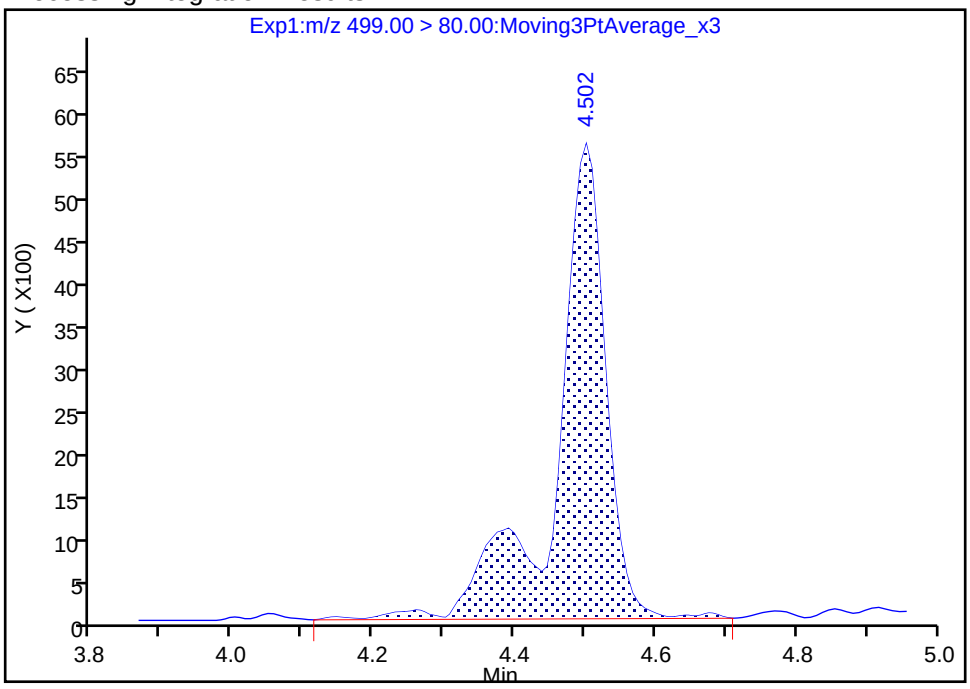
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0009.d				
Injection Date:	03-Jun-2020 20:58:10	Instrument ID:	A18		
Lims ID:	IC STD 2				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

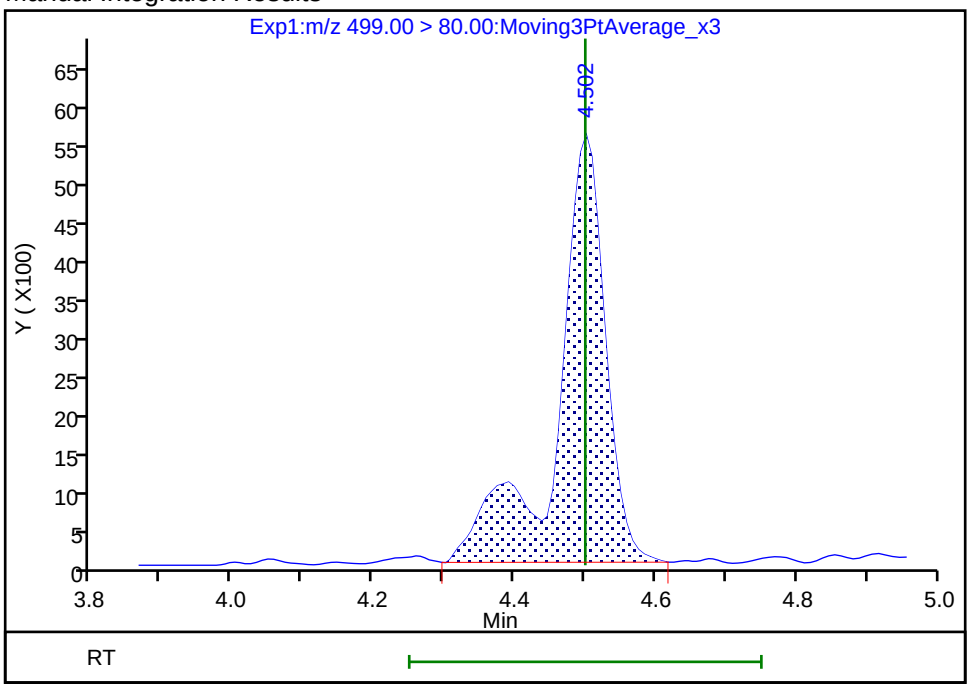
Processing Integration Results

RT: 4.50
Area: 27680
Amount: 0.047299
Amount Units: ng/ml



Manual Integration Results

RT: 4.50
Area: 26575
Amount: 0.043801
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:58:15

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

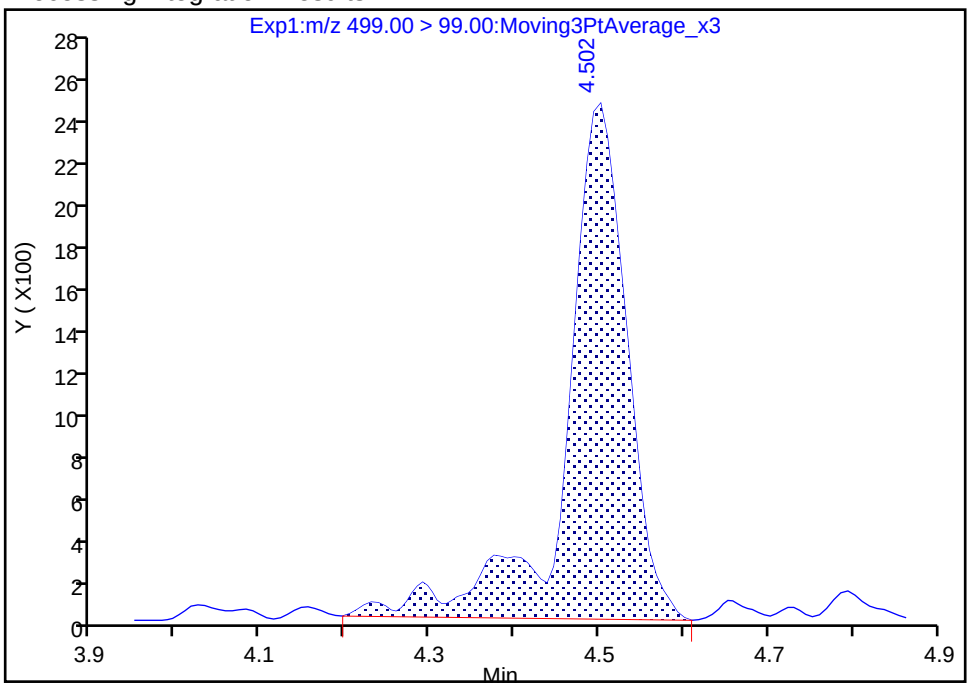
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0009.d
Injection Date: 03-Jun-2020 20:58:10 Instrument ID: A18
Lims ID: IC STD 2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

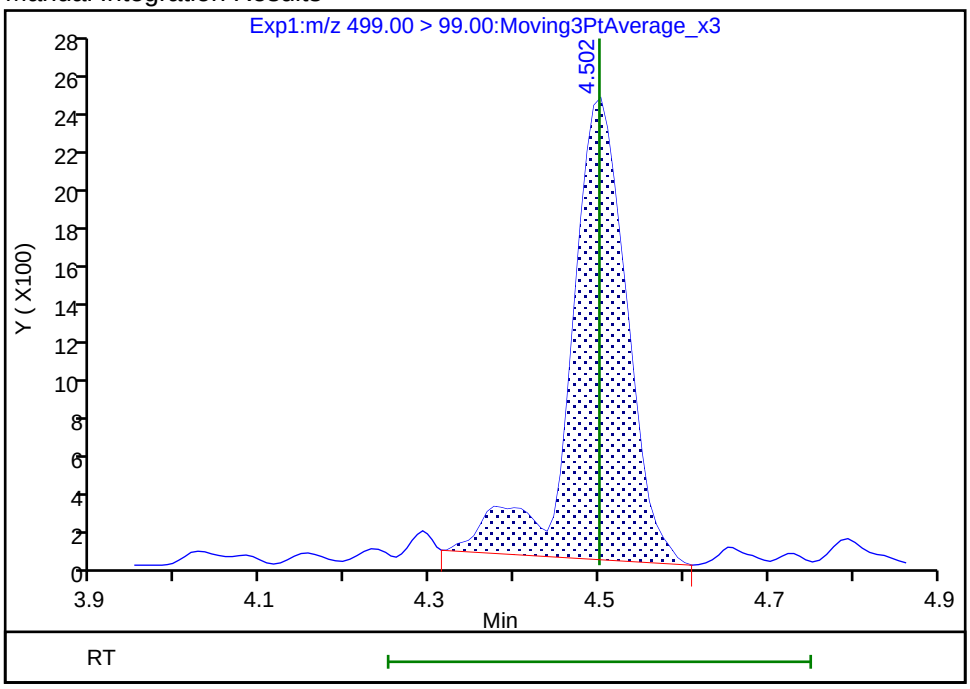
Processing Integration Results

RT: 4.50
Area: 12281
Amount: 0.047299
Amount Units: ng/ml



Manual Integration Results

RT: 4.50
Area: 11231
Amount: 0.043801
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:58:21
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

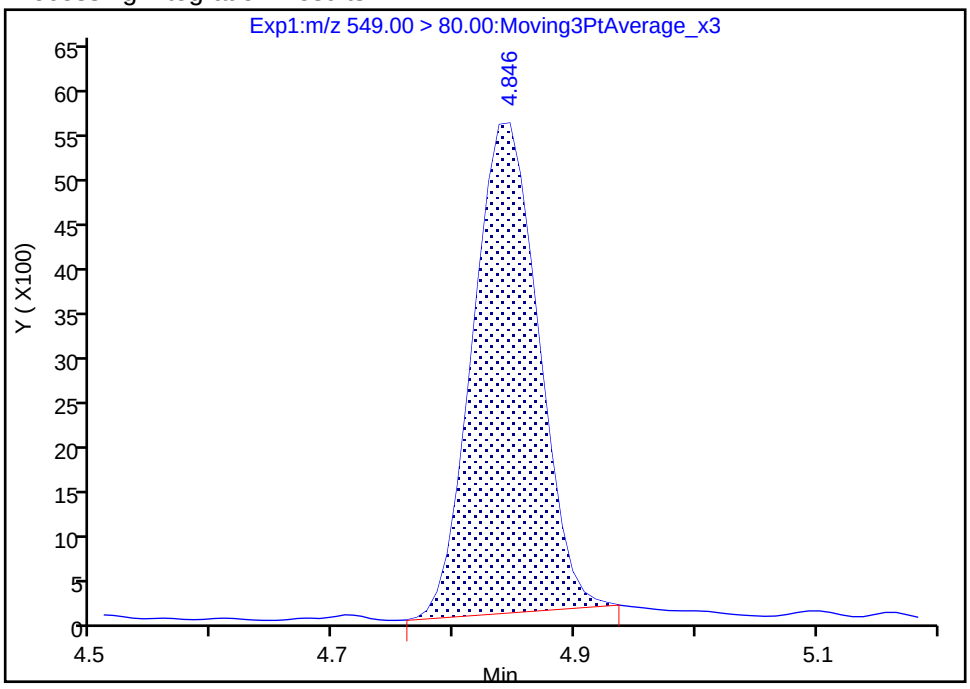
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0009.d				
Injection Date:	03-Jun-2020 20:58:10	Instrument ID:	A18		
Lims ID:	IC STD 2				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

35 Perfluorononanesulfonic acid, CAS: 68259-12-1

Signal: 1

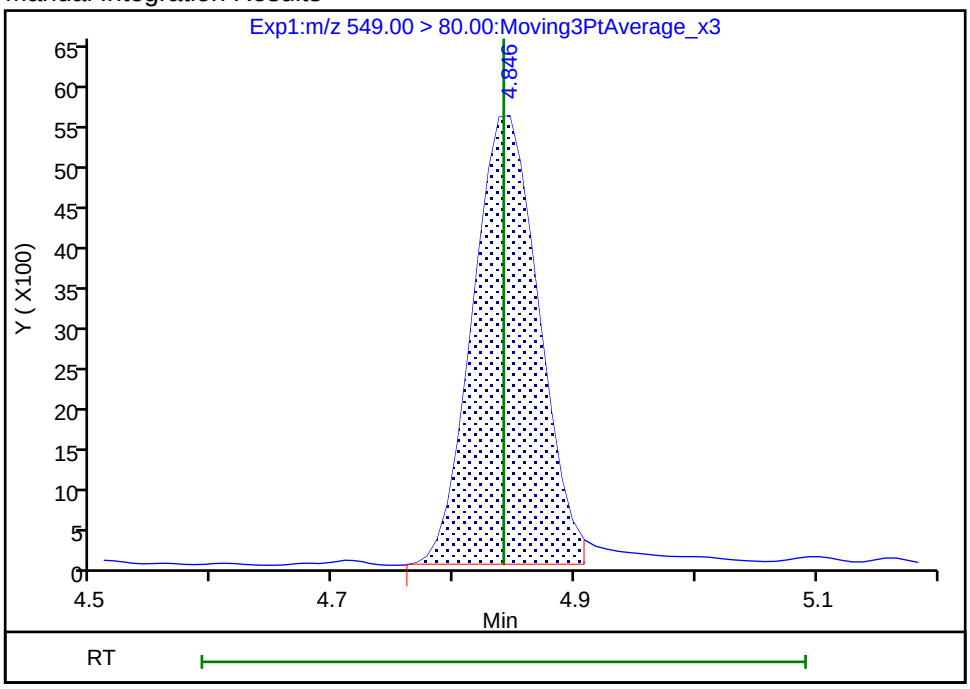
Processing Integration Results

RT: 4.85
Area: 20904
Amount: 0.044585
Amount Units: ng/ml



Manual Integration Results

RT: 4.85
Area: 21304
Amount: 0.045323
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:58:43
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

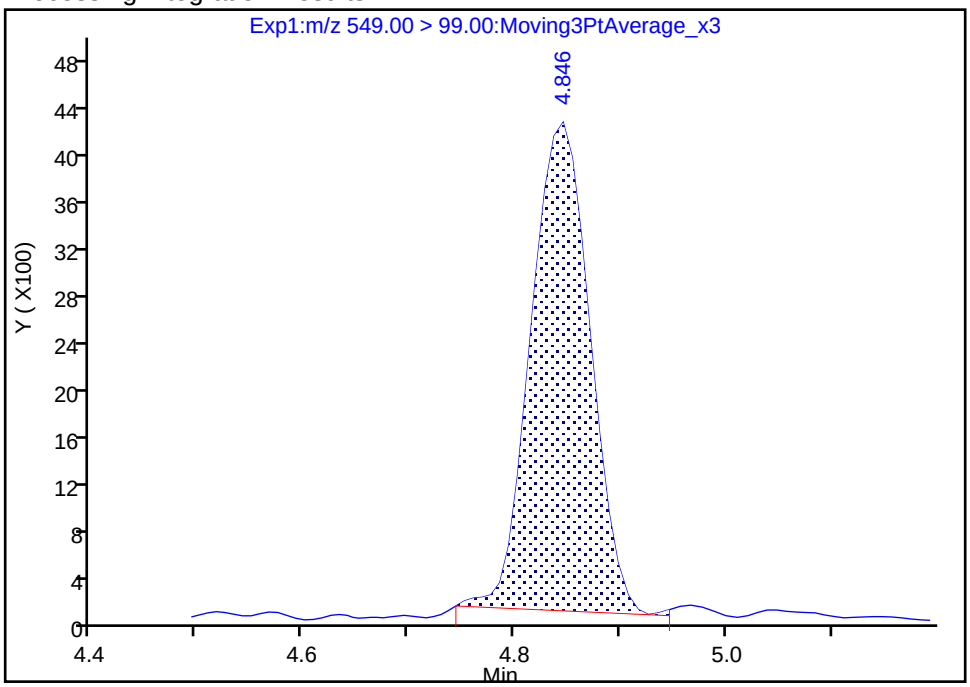
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0009.d
Injection Date: 03-Jun-2020 20:58:10 Instrument ID: A18
Lims ID: IC STD 2
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

35 Perfluorononanesulfonic acid, CAS: 68259-12-1

Signal: 2

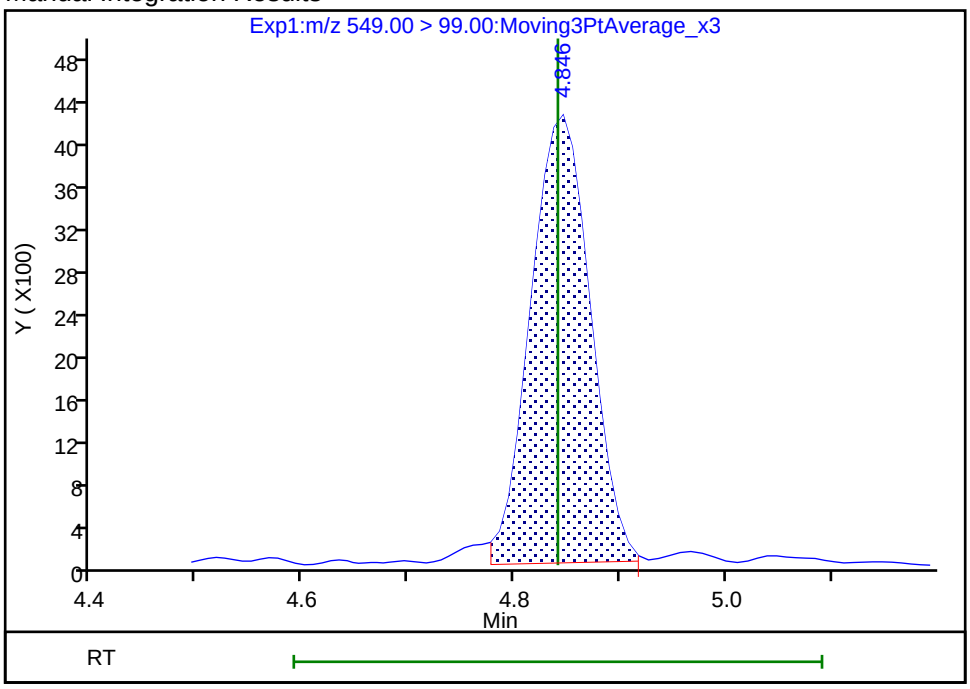
Processing Integration Results

RT: 4.85
Area: 16088
Amount: 0.044585
Amount Units: ng/ml



Manual Integration Results

RT: 4.85
Area: 16400
Amount: 0.045323
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:58:49
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

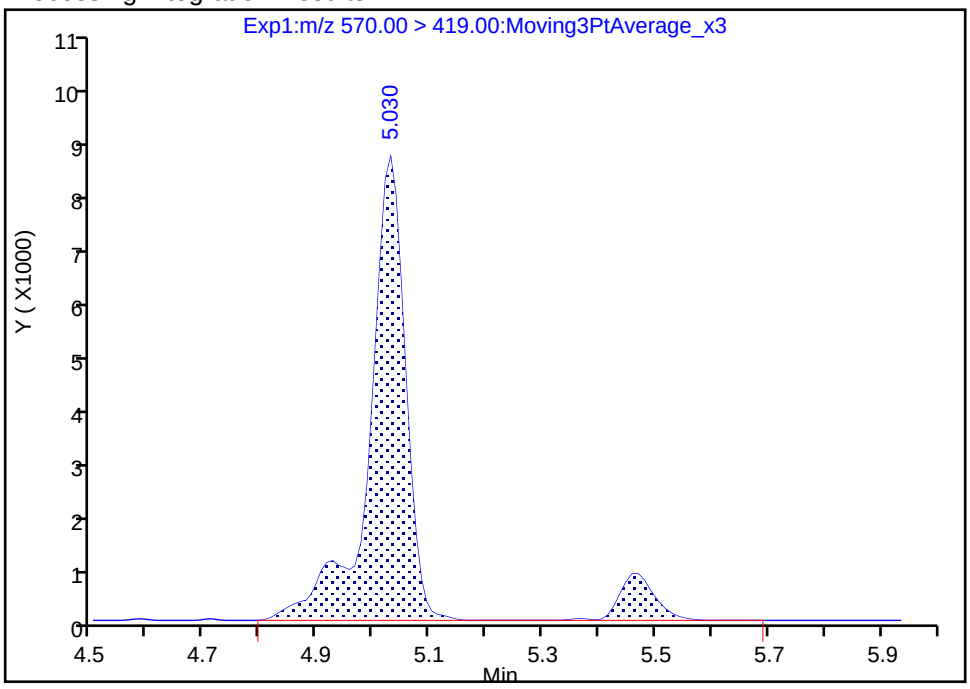
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0009.d				
Injection Date:	03-Jun-2020 20:58:10	Instrument ID:	A18		
Lims ID:	IC STD 2				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 NMeFOSAA, CAS: 2355-31-9

Signal: 1

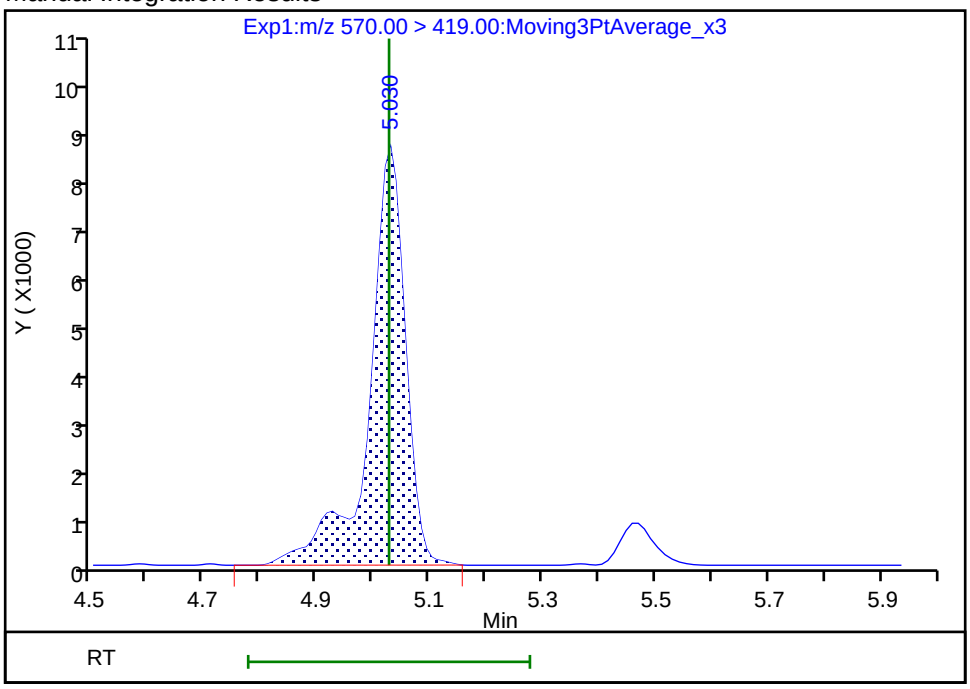
Processing Integration Results

RT: 5.03
Area: 39498
Amount: 0.049737
Amount Units: ng/ml



Manual Integration Results

RT: 5.03
Area: 35975
Amount: 0.046348
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:59:03

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

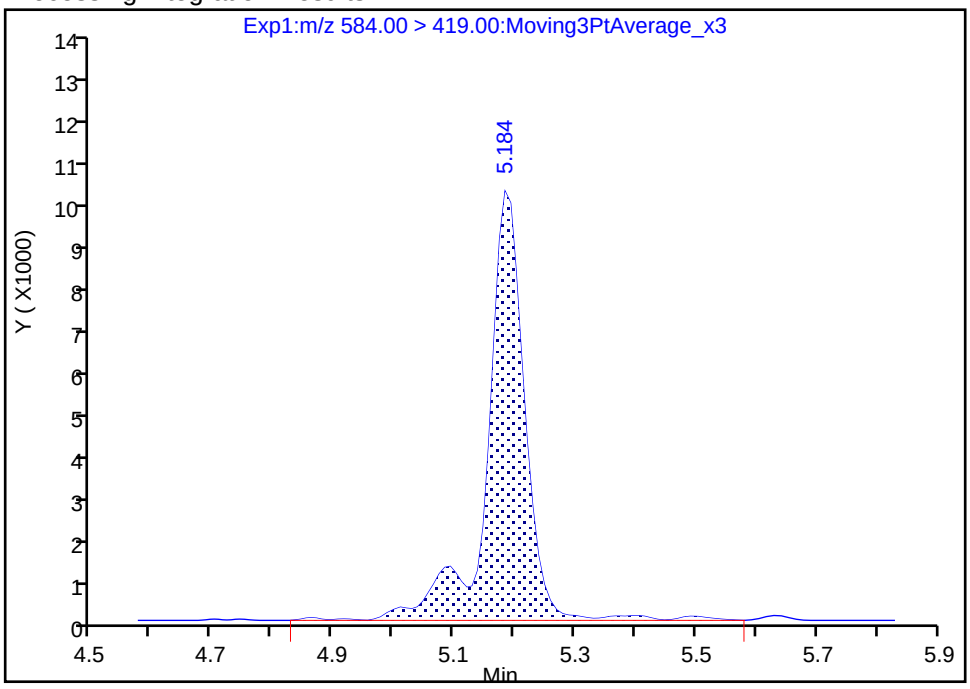
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0009.d				
Injection Date:	03-Jun-2020 20:58:10	Instrument ID:	A18		
Lims ID:	IC STD 2				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	2	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

46 NEtFOSA, CAS: 2991-50-6

Signal: 1

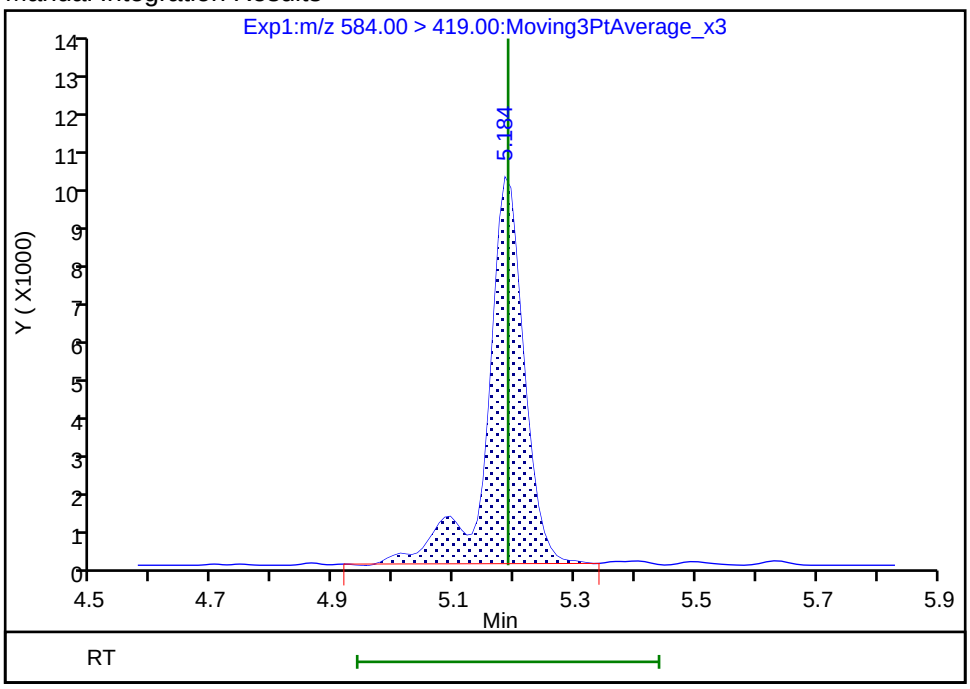
Processing Integration Results

RT: 5.18
Area: 42851
Amount: 0.052831
Amount Units: ng/ml



Manual Integration Results

RT: 5.18
Area: 40939
Amount: 0.051002
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:59:10
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0010.d
Lims ID: IC STD 3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 03-Jun-2020 21:07:18 ALS Bottle#: 3 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: IC STD 3 (019)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 04-Jun-2020 10:32:30 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1046

First Level Reviewer: duranl Date: 04-Jun-2020 06:00:36
Ratio Calibration: Average of Initial Calibration

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	2.589	2.579	0.010	0.624	10263879	2.40		95.9	8193	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.589	2.581	0.008	1.000	848141	0.2426		97.0	254	
D 4 13C5 PFPeA										
267.90 > 223.00	2.961	2.957	0.004	0.714	9278679	2.42		96.6	5380	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.961	2.959	0.002	1.000	865102	0.2421		96.8	243	
D 9 13C3 PFBS										
301.90 > 80.00	3.009	2.998	0.011	0.725	6888399	2.29		98.6	8566	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.009	3.003	0.006	1.000	616680	0.2135	Target=2.25	96.6	801	
298.90 > 99.00	3.009	3.003	0.006	1.000	276150		2.23(1.13-3.38)	96.6	295	
8 4:2 FTS										
327.00 > 307.00	3.298	3.297	0.001	1.000	236912	0.2349		101	2782	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.298	3.297	0.001	0.795	1123165	2.30		98.5	1584	
D 11 13C2 PFHxA										
315.00 > 270.00	3.341	3.339	0.002	0.805	9358102	2.45		97.9	5295	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.341	3.339	0.002	1.000	842357	0.2420	Target=11.49	96.8	351	
313.00 > 119.00	3.341	3.339	0.002	1.000	71088		11.85(5.74-17.23)	96.8	108	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.362	3.359	0.003	1.117	483147	0.2275	Target=2.74	97.0	639	
349.00 > 99.00	3.362	3.359	0.003	1.117	176284		2.74(1.37-4.12)	97.0	545	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.468	3.459	0.009	0.836	1730427	2.32		92.6	3288	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.468	3.459	0.009	1.000	167575	0.2560		102	696	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.750	3.743	0.008	1.000	795088	0.2392	Target=3.25	95.7	294	
363.00 > 169.00	3.750	3.743	0.008	1.000	257748		3.08(1.62-4.87)	95.7	655	
D 18 13C4 PFHpA										
367.00 > 322.00	3.750	3.743	0.008	0.904	8431940	2.48		99.3	5851	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.760	3.752	0.008	1.000	347990	0.2101	Target=2.90	92.3	1187	
399.00 > 99.00	3.760	3.752	0.008	1.000	117510		2.96(1.45-4.35)	92.3	216	
D 17 18O2 PFHxS										
403.00 > 84.00	3.760	3.752	0.008	0.906	3402875	2.37		100	3244	
19 DONA										
377.00 > 251.00	3.798	3.794	0.004	0.844	2157561	0.2230	Target=2.01	94.7	2735	
377.00 > 85.00	3.798	3.794	0.004	0.844	1086654		1.99(1.00-3.01)	94.7	1871	
21 6:2 FTS										
427.00 > 407.00	4.123	4.117	0.006	1.000	184027	0.2278		96.1	900	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.123	4.117	0.006	0.994	958146	2.43		102	2443	
$ 26 13C8 PFOA										
421.00 > 376.00	4.139	4.134	0.005	0.998	6652710	2.37		96.8	7402	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.139	4.136	0.003	0.919	217240	0.2359	Target=3.25	99.1	1030	
449.00 > 99.00	4.139	4.136	0.003	0.919	66988		3.24(1.63-4.88)	99.1	326	
D 25 13C4 PFOA										
417.00 > 372.00	4.139	4.139	0.0	0.998	8500891	2.50		100.0	5792	
* 23 13C2 PFOA										
415.00 > 370.00	4.148	4.141	0.007		8586477	2.50			8464	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.148	4.141	0.007	1.002	855494	0.2485	Target=2.35	99.4	511	
413.00 > 169.00	4.148	4.141	0.007	1.002	334768		2.56(1.18-3.53)	99.4	462	
$ 28 13C8 PFOS										
507.00 > 99.00	4.502	4.496	0.006	1.085	502396	2.39		100.0	2100	
D 27 13C4 PFOS										
503.00 > 80.00	4.502	4.499	0.003	1.085	1454051	2.39		100	3589	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.502	4.500	0.002	1.000	134752	0.2196	Target=2.41	94.7	324	
499.00 > 99.00	4.502	4.500	0.002	1.000	58181		2.32(1.21-3.62)	94.7	192	
31 Perfluorononanoic acid										
463.00 > 419.00	4.518	4.512	0.006	1.000	617917	0.2408	Target=6.74	96.3	244	
463.00 > 169.00	4.518	4.512	0.006	1.000	93326		6.62(3.37-10.11)	96.3	212	
D 30 13C5 PFNA										
468.00 > 423.00	4.518	4.513	0.005	1.089	6673094	2.41		96.3	10139	
32 9ClFOS										
531.00 > 351.00	4.702	4.694	0.008	1.045	670814	0.2228		95.6	1275	
D 33 13C8 FOSA										
506.00 > 78.00	4.837	4.832	0.005	1.166	3383852	2.51		100	2989	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.837	4.835	0.002	1.000	303466	0.2441		97.6	913	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.846	4.841	0.005	1.076	111891	0.2354	Target=1.37	98.1	442	
549.00 > 99.00	4.837	4.841	-0.004	1.075	81923		1.37(0.69-2.06)	98.1	409	
D 39 13C2 PFDA										
515.00 > 470.00	4.863	4.862	0.001	1.173	7553438	2.52		101	9365	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.863	4.862	0.001	1.000	670649	0.2480	Target=8.07	99.2	727	
513.00 > 169.00	4.863	4.862	0.001	1.000	85390		7.85(4.04-12.11)	99.2	223	
36 8:2 FTS										
527.00 > 507.00	4.872	4.864	0.008	1.000	192646	0.2420		101	1301	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.872	4.864	0.008	1.175	1241398	2.50		104	2612	
D 40 d3-NMeFOSAA										
573.00 > 419.00	5.030	5.023	0.007	1.213	2721834	2.45		97.9	2710	
41 NMeFOSAA										M
570.00 > 419.00	5.030	5.027	0.003	1.000	169306	0.2196		87.9	232	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.157	5.152	0.005	1.146	90403	0.2571	Target=1.31	107	694	
599.00 > 99.00	5.157	5.152	0.005	1.146	64245		1.41(0.65-1.96)	107	434	
D 43 13C2 PFUnA										
565.00 > 520.00	5.184	5.178	0.006	1.250	7133568	2.55		102	8577	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.184	5.179	0.005	1.000	453091	0.2144	Target=6.70	85.8	769	
563.00 > 169.00	5.184	5.179	0.005	1.000	74126		6.11(3.35-10.05)	85.8	331	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.184	5.181	0.003	1.250	2969997	2.62		105	4008	
46 NEtFOSA										
584.00 > 419.00	5.193	5.189	0.004	1.002	182438	0.2187		87.5	2501	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.290	5.287	0.003	1.275	9353315	11.7		93.3	12369	
48 N-MeFOSE-M										
616.00 > 59.00	5.300	5.301	-0.001	1.002	183266	0.2493		99.7	489	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.310	5.311	-0.001	1.280	1477715	2.33		93.2	38.6	
50 NMeFOSA										
512.00 > 169.00	5.321	5.316	0.005	1.002	129557	0.2373		94.9	460	
51 11ClFOS										
631.00 > 451.00	5.310	5.309	0.001	1.180	735543	0.2228		94.6	3249	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.459	5.454	0.005	1.316	10828933	11.9		95.1	10596	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.469	5.462	0.007	1.000	638268	0.2469	Target=6.20	98.7	409	
613.00 > 169.00	5.469	5.462	0.007	1.000	93434		6.83(3.10-9.30)	98.7	459	
D 56 13C2 PFDoA										
615.00 > 570.00	5.469	5.462	0.007	1.319	6940530	2.35		93.8	10801	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
53 N-EtFOSE-M										
630.00 > 59.00	5.469	5.468	0.001	1.002	219724	0.2527		101	540	
58 10:2 FTS										
627.00 > 607.00	5.480	5.477	0.003	1.125	130064	0.2066		85.7	1343	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.480	5.482	-0.002	1.321	1520746	2.33		93.4	474	
55 N-EtFOSA-M										
526.00 > 169.00	5.491	5.486	0.005	1.002	158852	0.2499		100.0	372	
59 PFDoS										
699.00 > 80.00	5.679	5.680	-0.001	1.261	74753	0.2296	Target=2.11	94.9	452	
699.00 > 99.00	5.679	5.680	-0.001	1.261	36703		2.04(1.06-3.17)	94.9	426	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.712	5.715	-0.003	1.044	609093	0.2510	Target=4.98	100	1010	
663.00 > 169.00	5.712	5.715	-0.003	1.044	140519		4.33(2.49-7.47)	100	676	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.948	5.945	0.003	1.434	5674809	2.29		91.7	6377	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.948	5.945	0.003	1.000	75742	0.2506	Target=0.96	100	378	
713.00 > 219.00	5.936	5.945	-0.009	0.998	80789		0.94(0.48-1.43)	100	815	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.359	6.352	0.007	1.533	4234955	2.42		96.6	5617	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.359	6.353	0.006	1.000	395228	0.2480	Target=5.10	99.2	434	
813.00 > 169.00	6.359	6.353	0.006	1.000	75677		5.22(2.55-7.64)	99.2	794	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.755	6.748	0.007	1.062	213527	0.2350	Target=5.50	94.0	250	
913.00 > 169.00	6.749	6.748	0.001	1.061	36790		5.80(2.75-8.25)	94.0	553	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL3_00019 Amount Added: 1.00 Units: mL

Report Date: 04-Jun-2020 10:32:32 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0010.d

Injection Date: 03-Jun-2020 21:07:18 Instrument ID: A18

Lims ID: IC STD 3

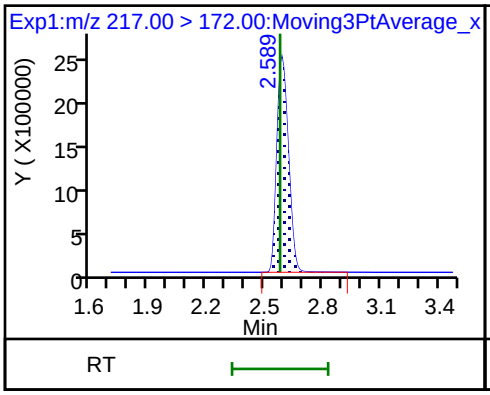
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 3 Worklist Smp#: 4

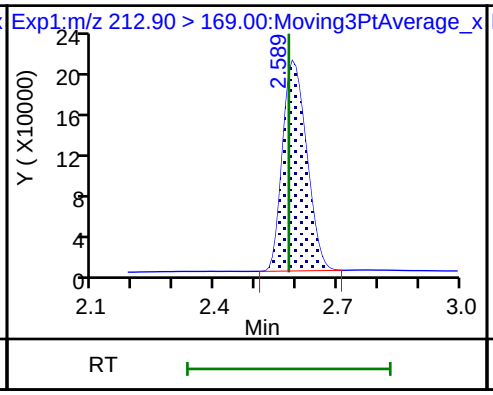
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

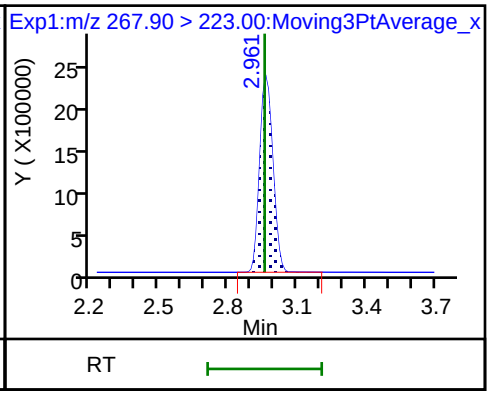
D 1 13C4 PFBA



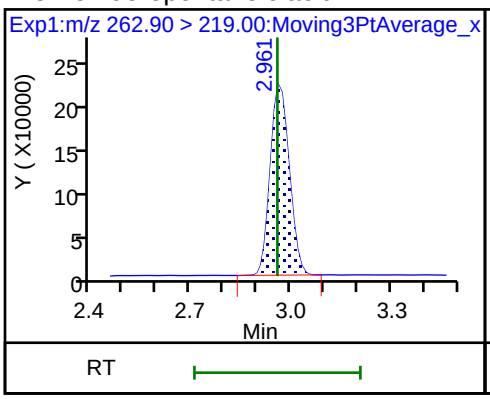
2 Perfluorobutanoic acid



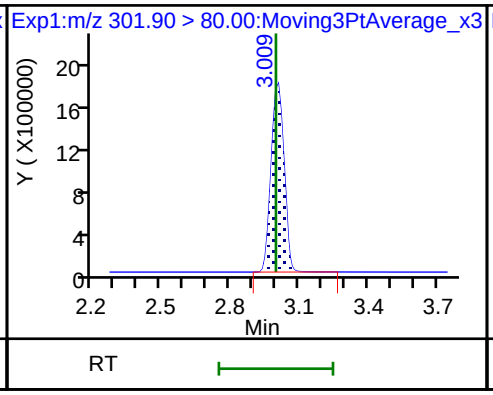
D 4 13C5 PFPeA



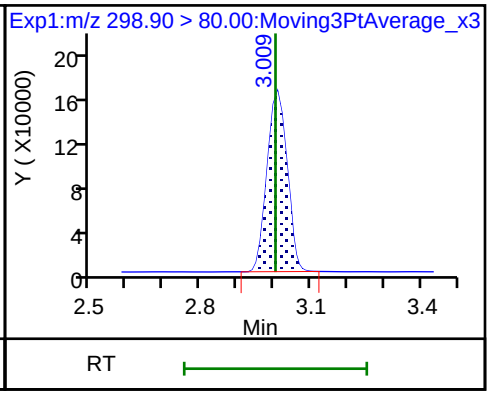
5 Perfluoropentanoic acid



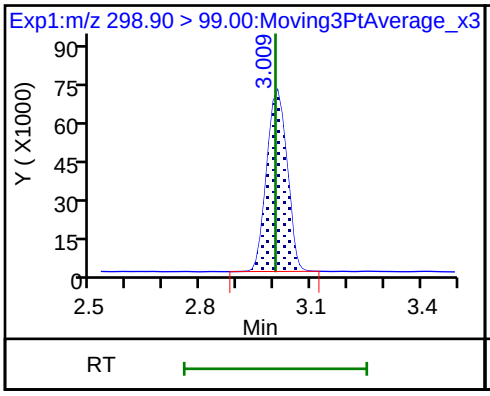
D 9 13C3 PFBS



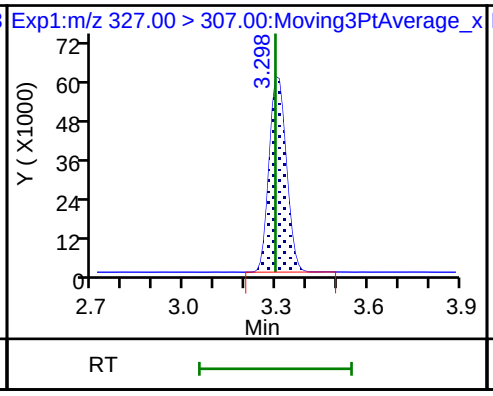
6 Perfluorobutanesulfonic acid



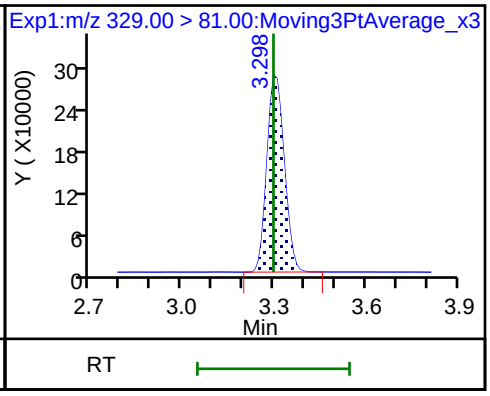
6 Perfluorobutanesulfonic acid



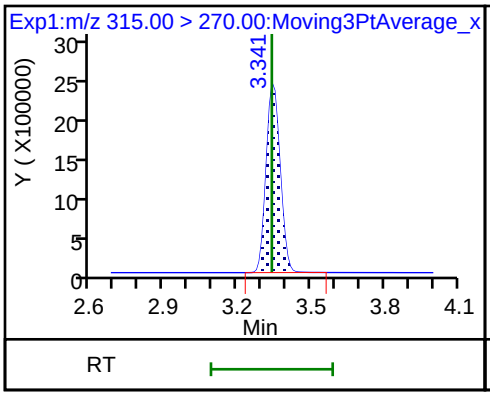
8 4:2 FTS



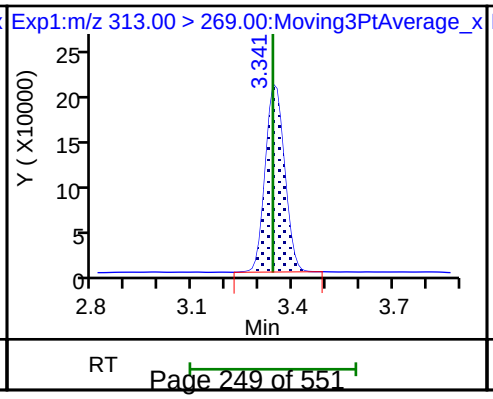
D 7 M2-4:2 FTS



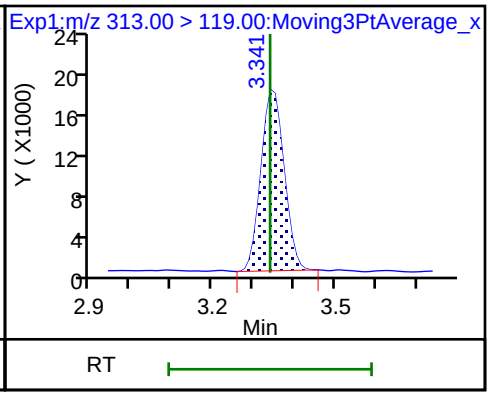
D 11 13C2 PFHxA



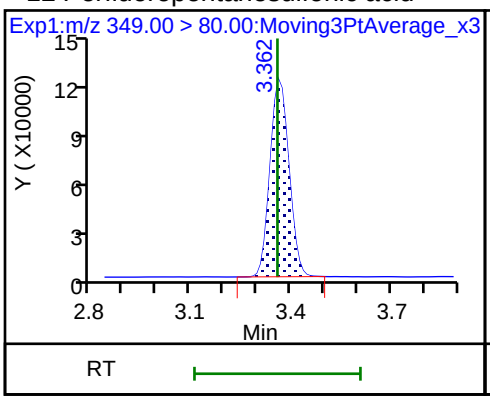
10 Perfluorohexanoic acid



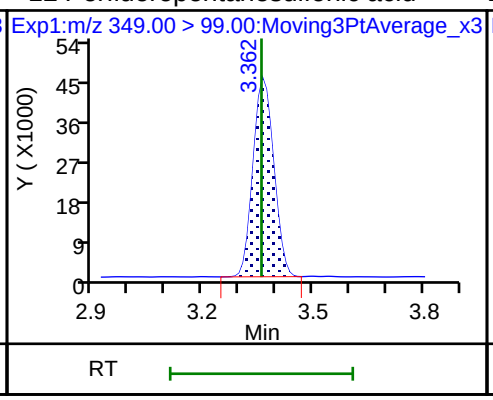
10 Perfluorohexanoic acid



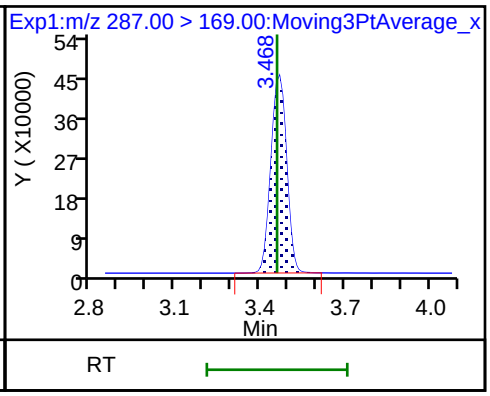
12 Perfluoropentanesulfonic acid



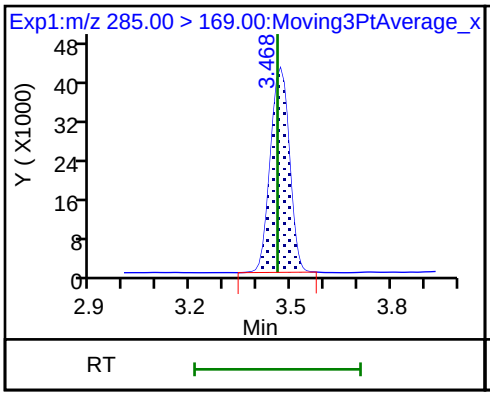
12 Perfluoropentanesulfonic acid



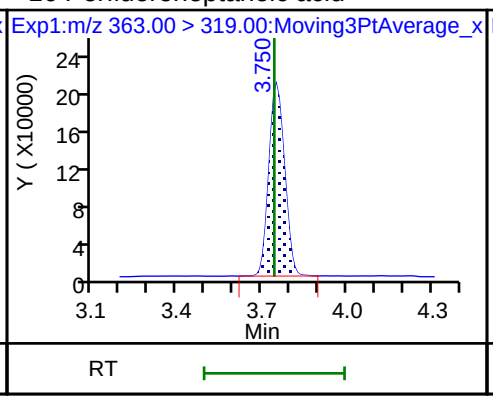
D 14 13C3 HFPO-DA



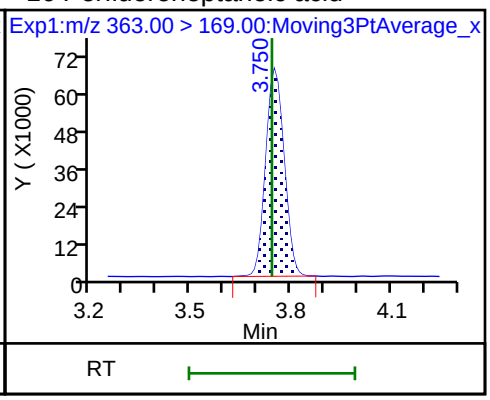
13 HPFO-DA



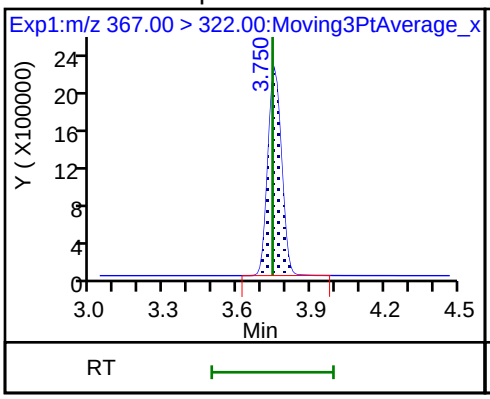
16 Perfluoroheptanoic acid



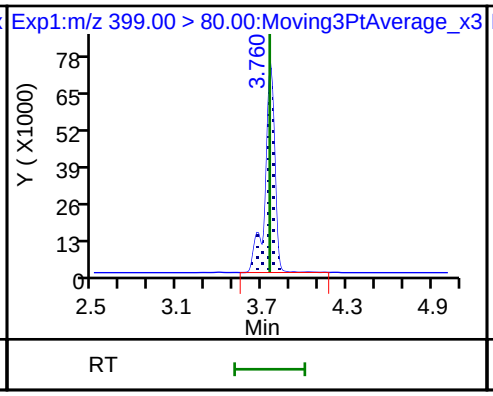
16 Perfluoroheptanoic acid



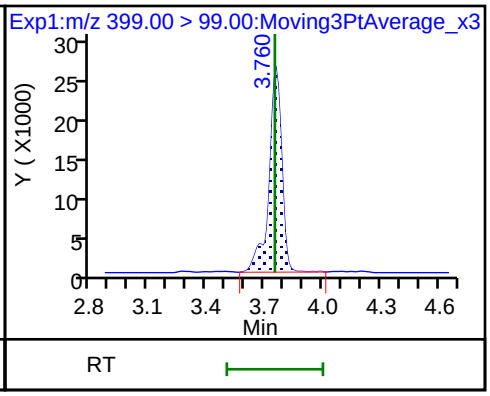
D 18 13C4 PFHpA



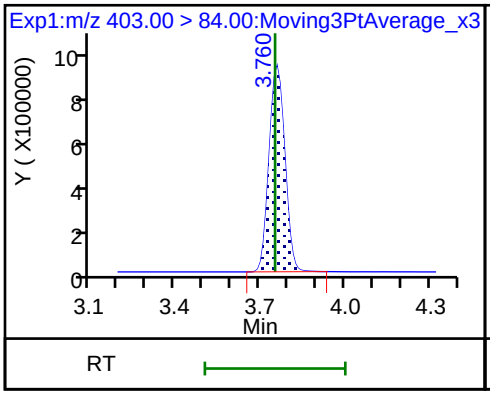
15 Perfluorohexanesulfonic acid



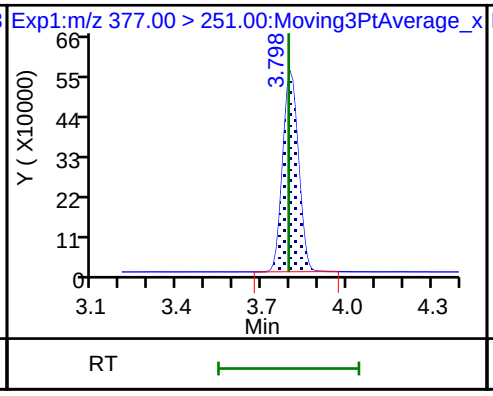
15 Perfluorohexanesulfonic acid



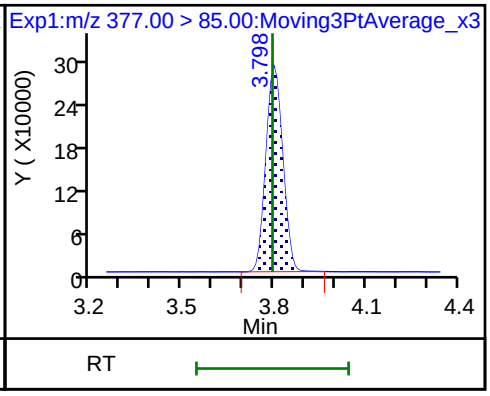
D 17 18O2 PFHxS



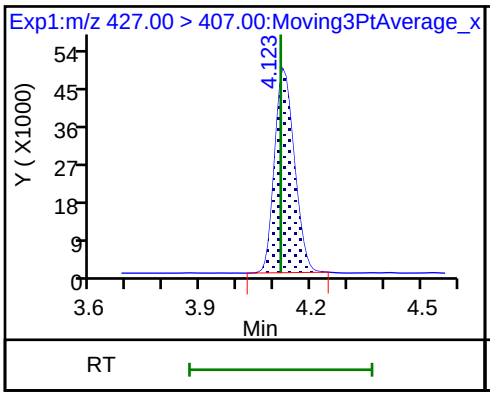
19 DONA



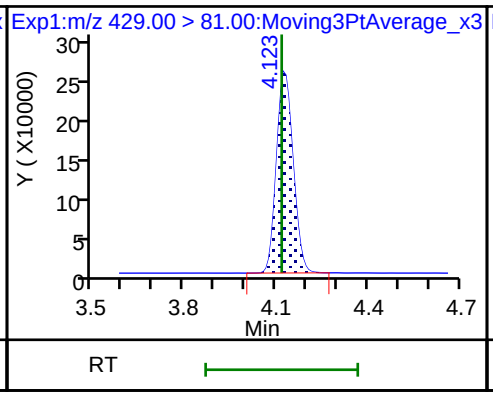
19 DONA



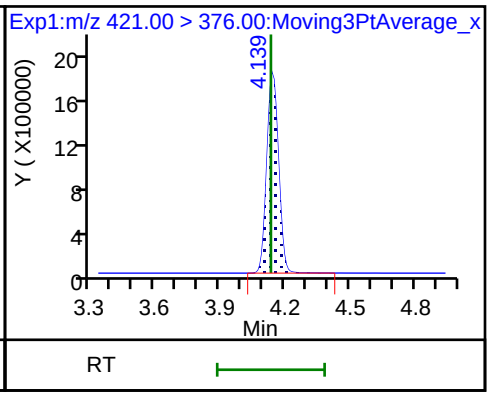
21 6:2 FTS



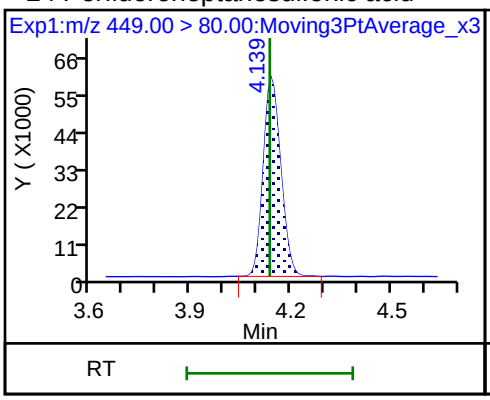
D 20 M2-6:2 FTS



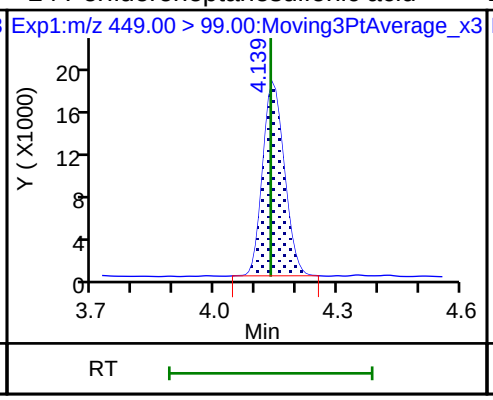
$ 26 13C8 PFOA



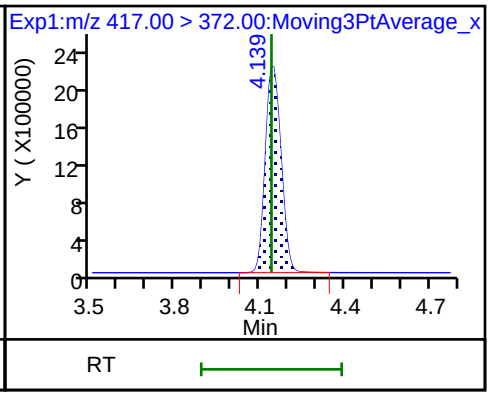
24 Perfluoroheptanesulfonic acid



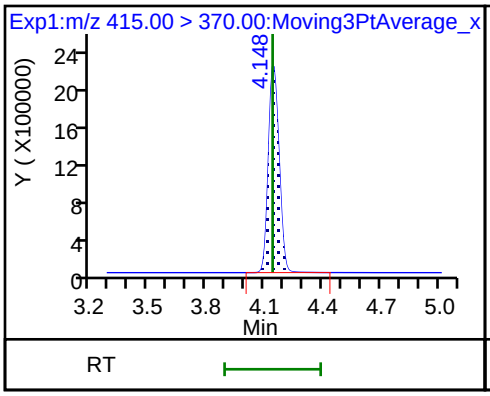
24 Perfluoroheptanesulfonic acid



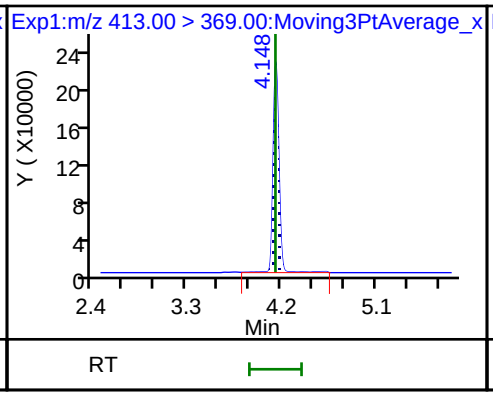
D 25 13C4 PFOA



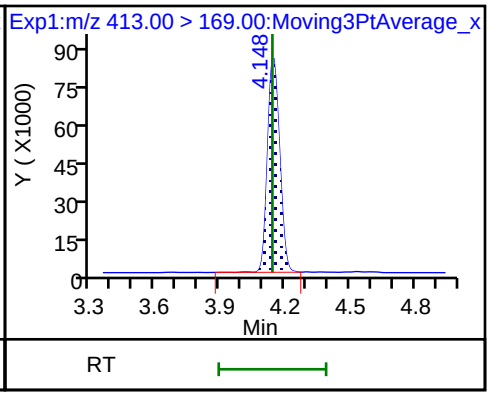
* 23 13C2 PFOA



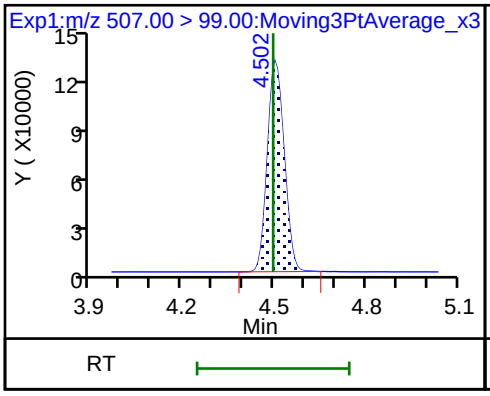
22 Perfluorooctanoic acid



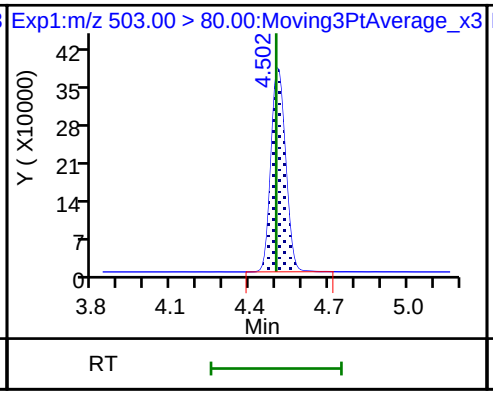
22 Perfluorooctanoic acid



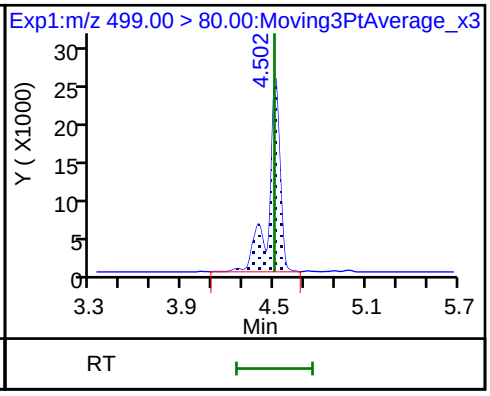
$ 28 13C8 PFOS



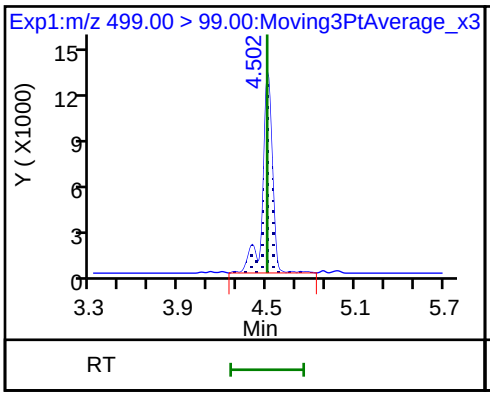
D 27 13C4 PFOS



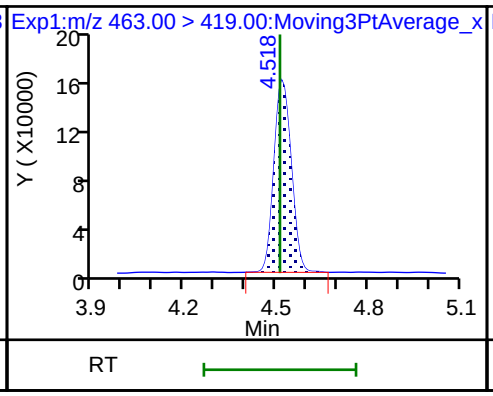
29 Perfluorooctanesulfonic acid



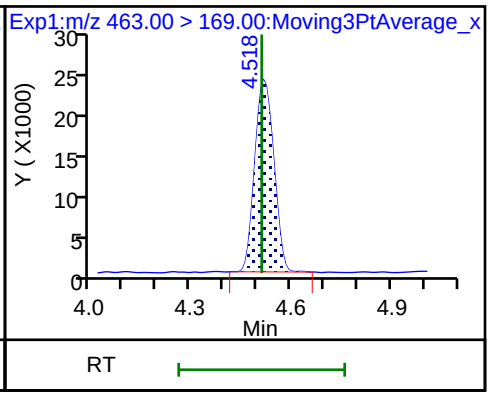
29 Perfluorooctanesulfonic acid



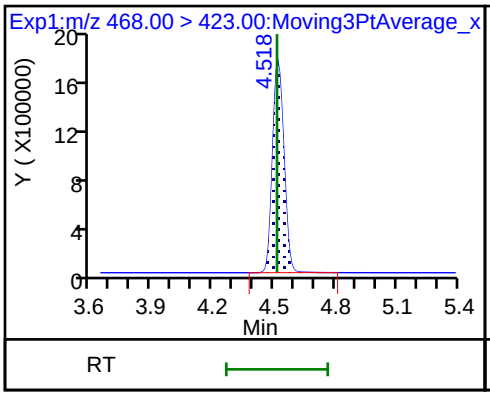
31 Perfluorononanoic acid



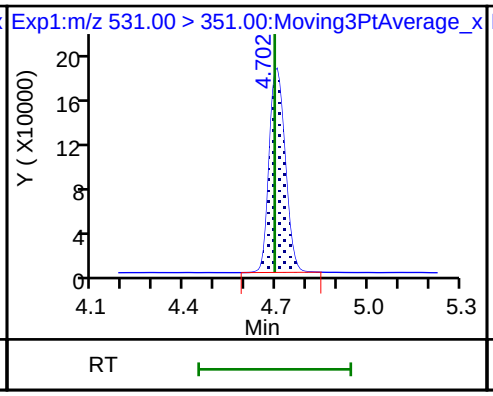
31 Perfluorononanoic acid



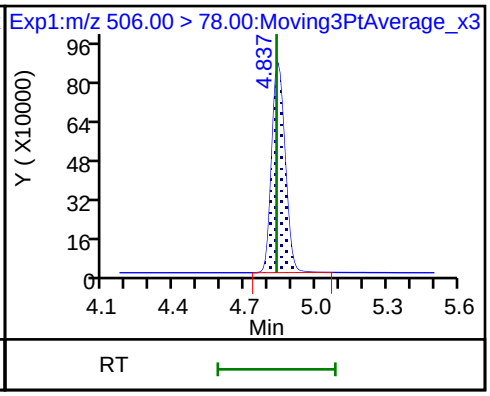
D 30 13C5 PFNA



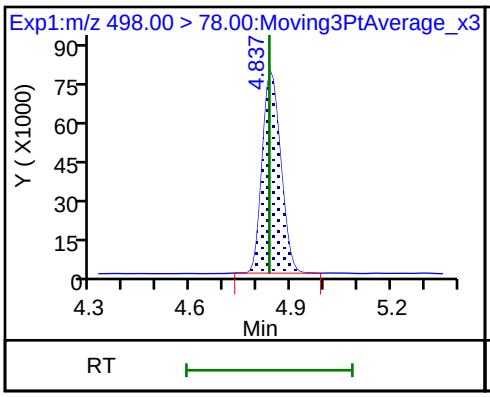
32 9ClFOS



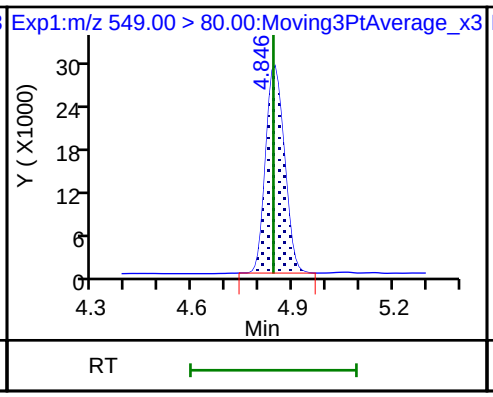
D 33 13C8 FOSA



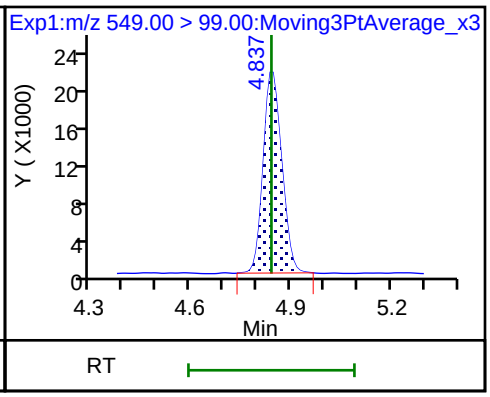
34 Perfluorooctanesulfonamide



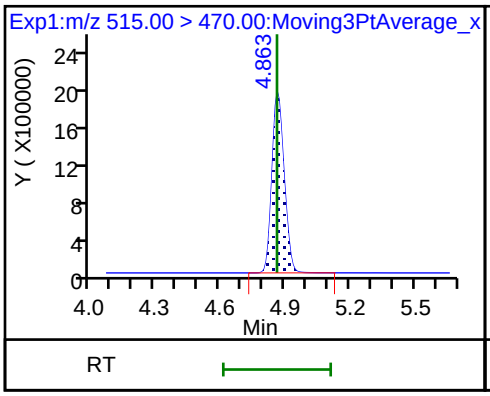
35 Perfluorononanesulfonic acid



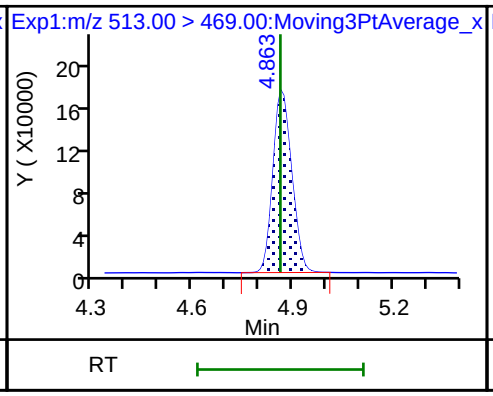
35 Perfluorononanesulfonic acid



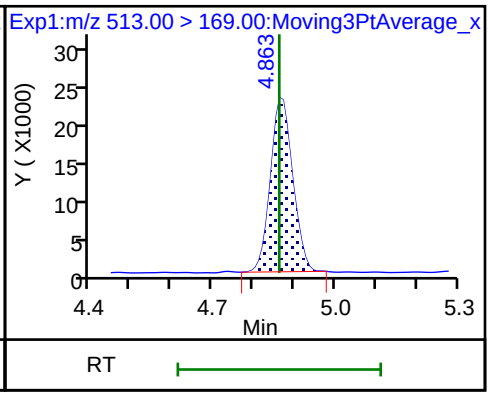
D 39 13C2 PFDA



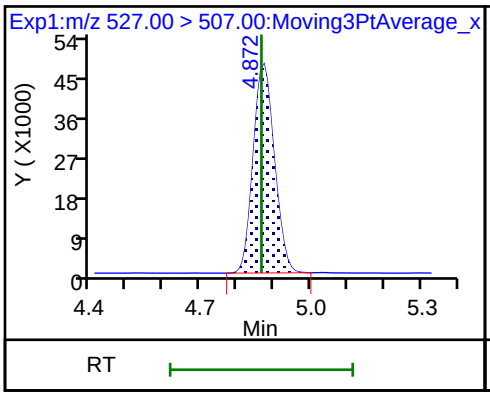
37 Perfluorodecanoic acid



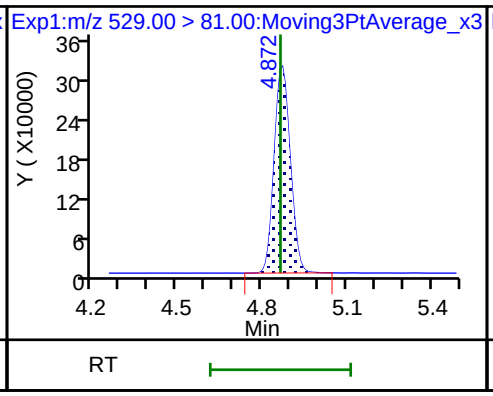
37 Perfluorodecanoic acid



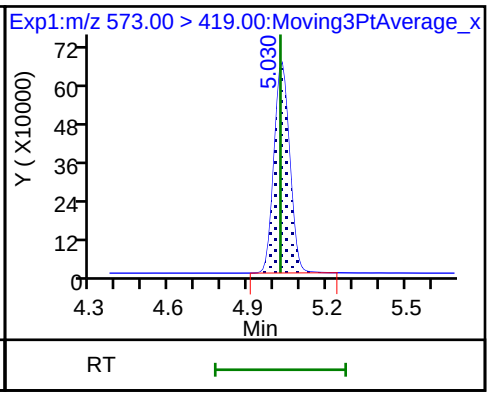
36 8:2 FTS



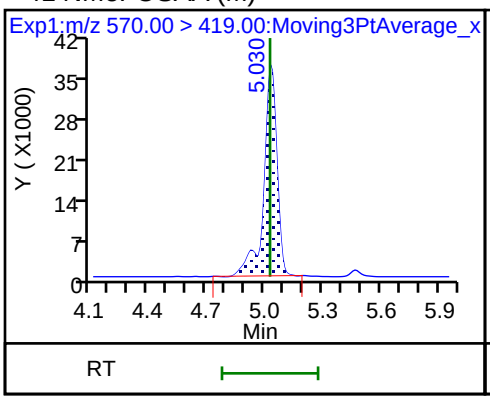
D 38 M2-8:2 FTS



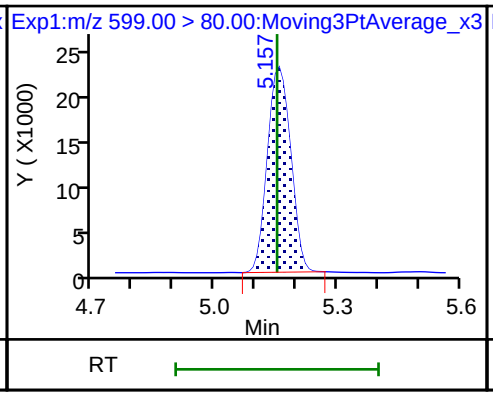
D 40 d3-NMeFOSAA



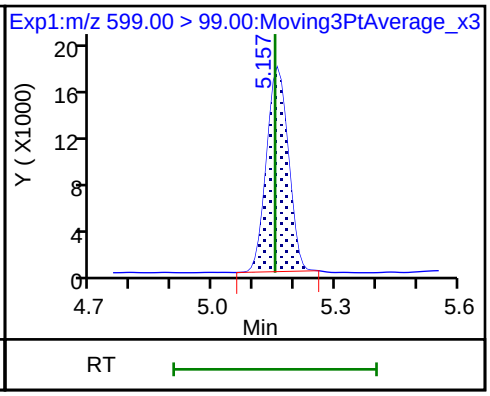
41 NMeFOSAA (M)



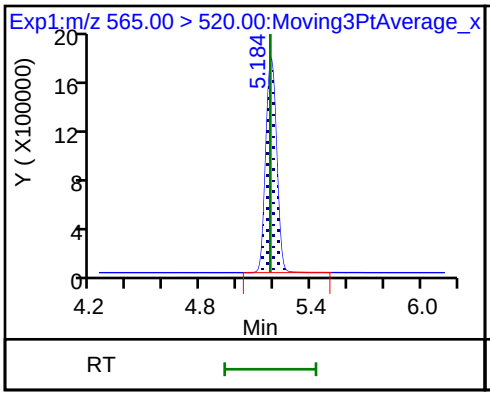
42 Perfluorodecanesulfonic acid



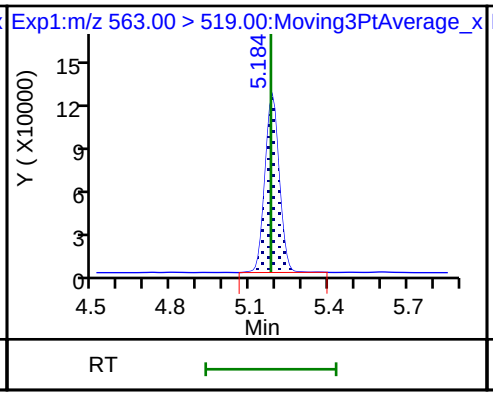
42 Perfluorodecanesulfonic acid



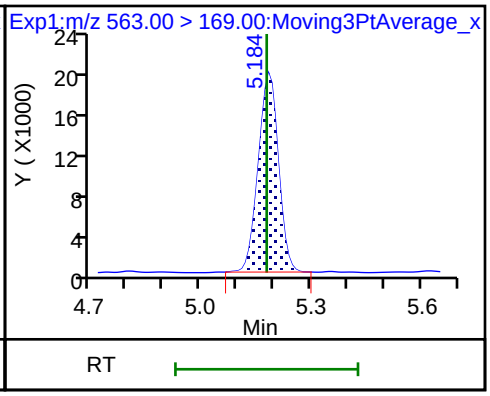
D 43 13C2 PFUnA



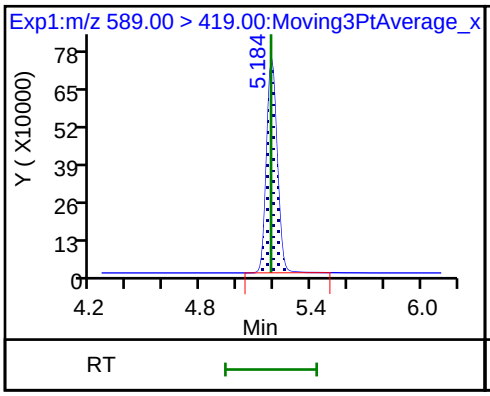
45 Perfluoroundecanoic acid



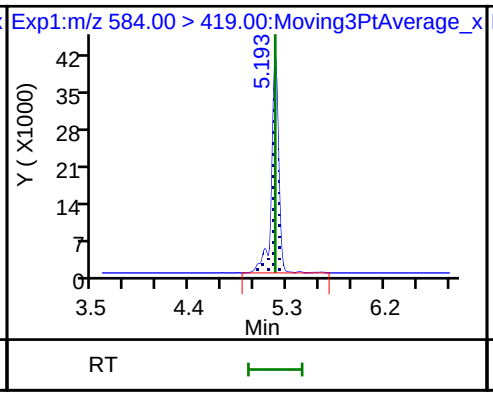
45 Perfluoroundecanoic acid



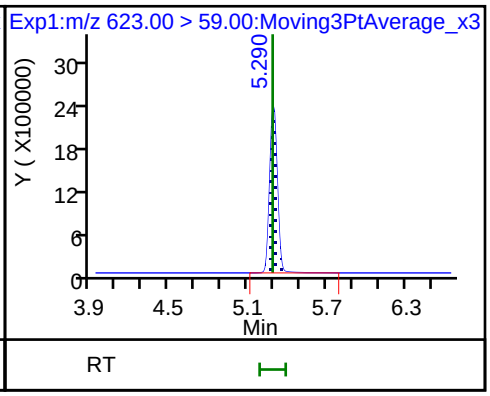
D 44 d5-NEtFOSAA



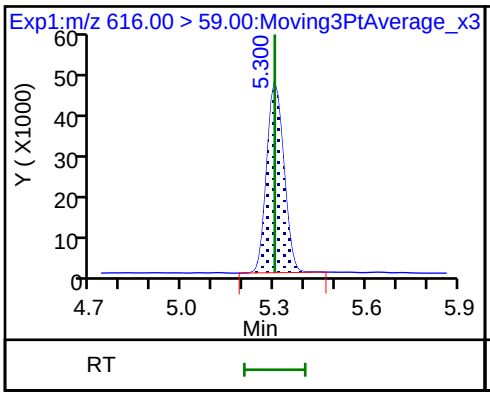
46 NEtFOSA



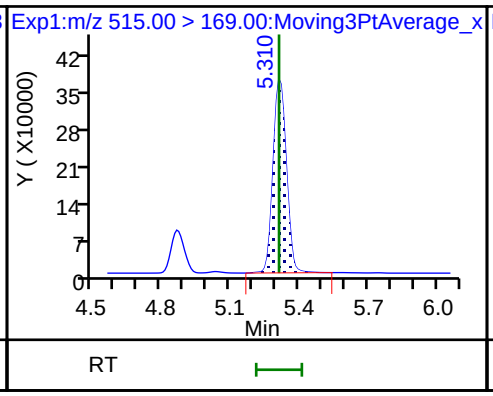
D 47 d7-N-MeFOSE-M



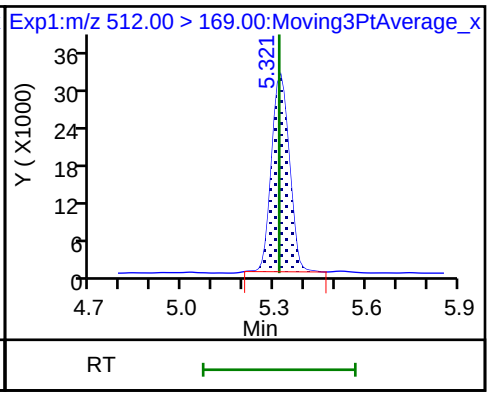
48 N-MeFOSE-M



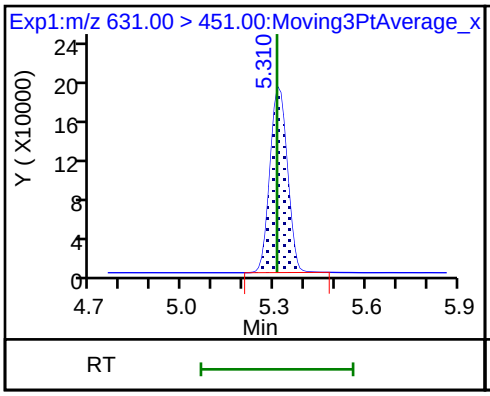
D 49 d-N-MeFOSA-M



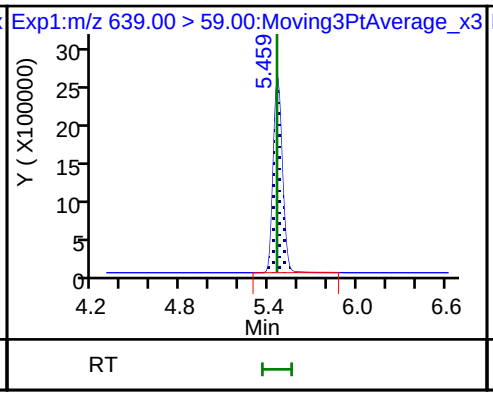
50 NMeFOSA



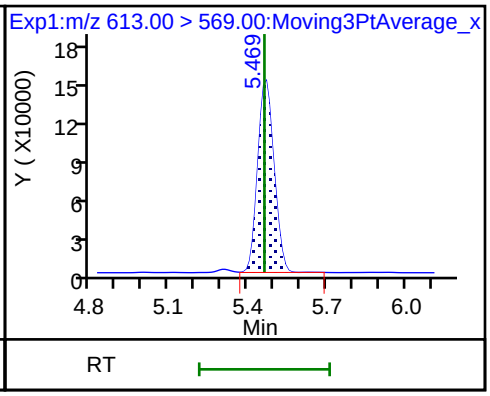
51 11ClFOS



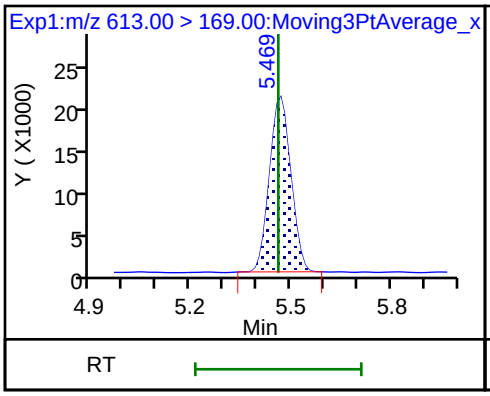
D 52 d9-N-EtFOSE-M



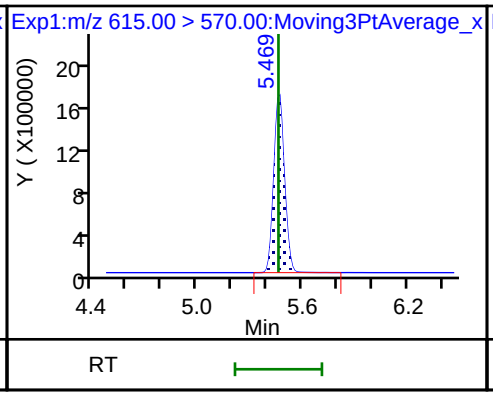
57 Perfluorododecanoic acid



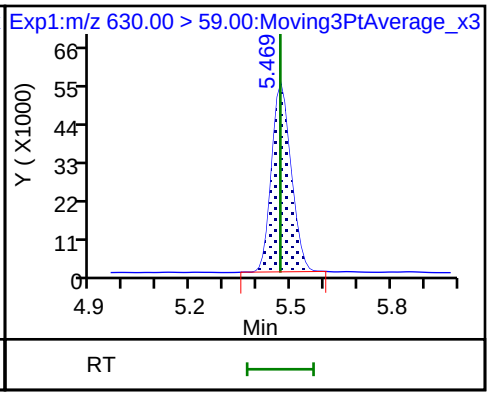
57 Perfluorododecanoic acid



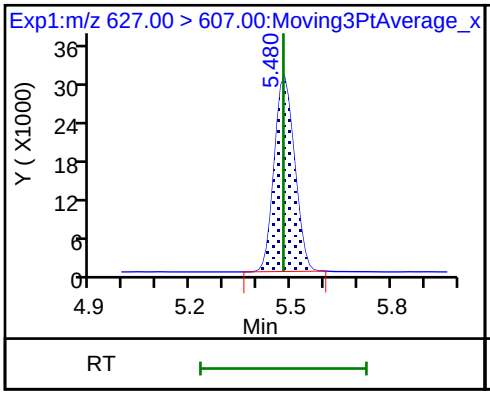
D 56 13C2 PFDoA



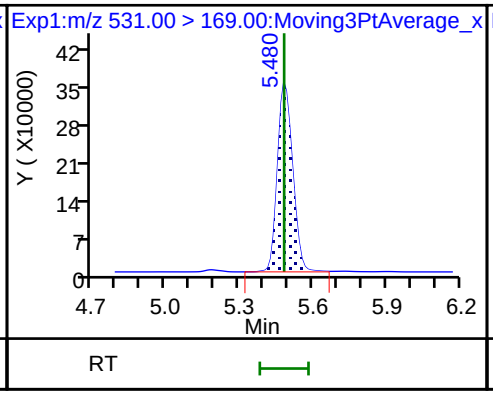
53 N-EtFOSE-M



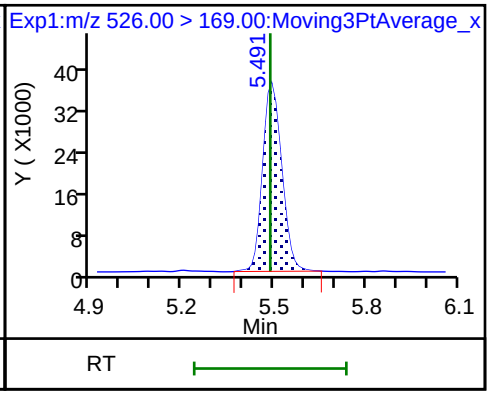
58 10:2 FTS



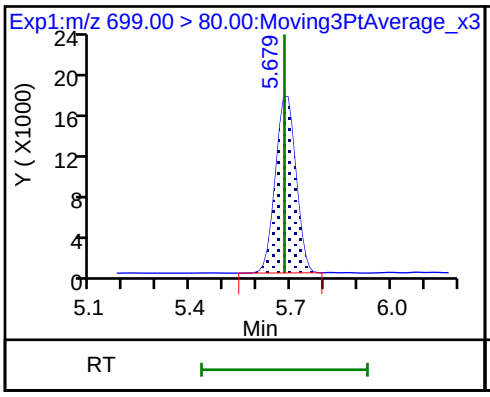
D 54 d-N-EtFOSA-M



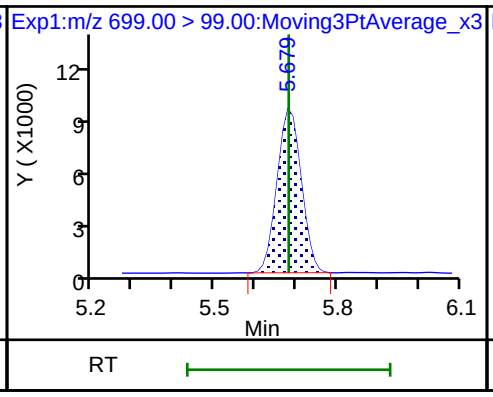
55 N-EtFOSA-M



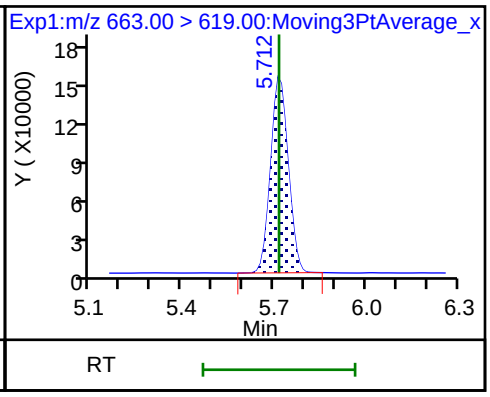
59 PFDoS



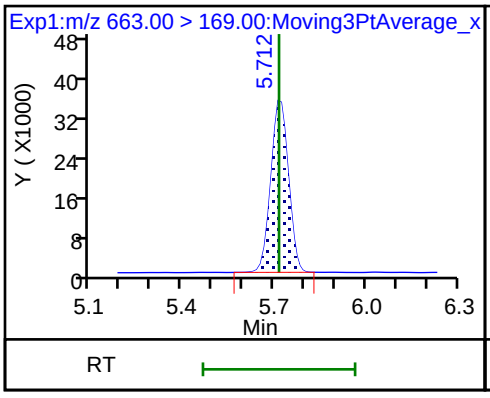
59 PFDoS



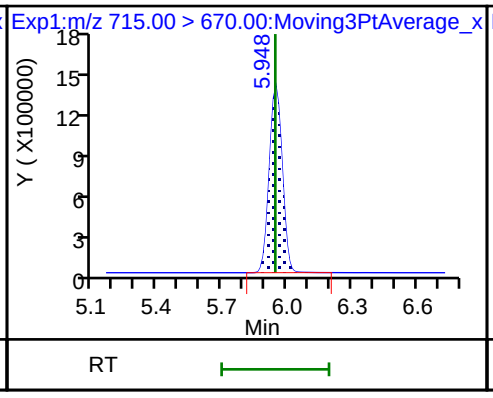
60 Perfluorotridecanoic acid



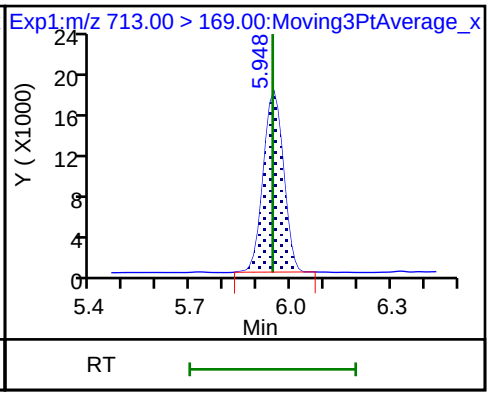
60 Perfluorotridecanoic acid



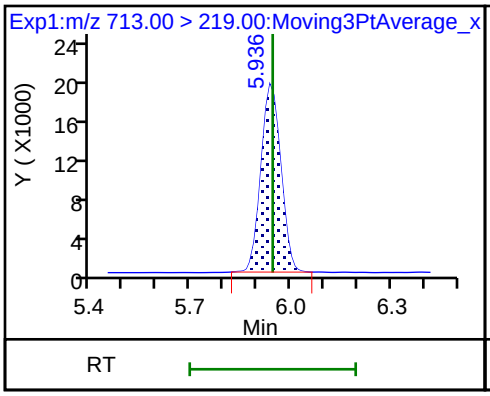
D 61 13C2 PFTeDA



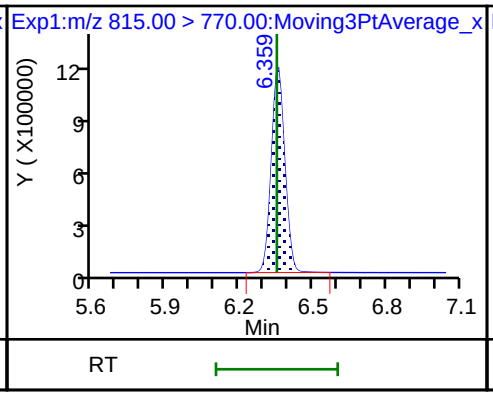
62 Perfluorotetradecanoic acid



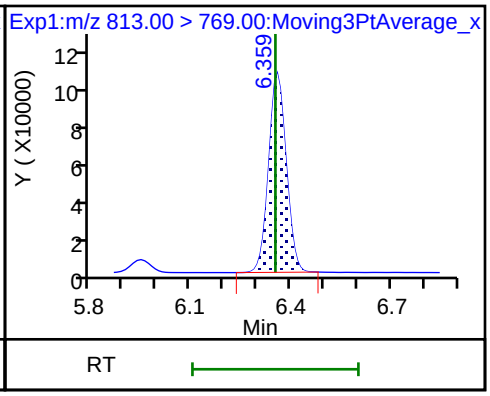
62 Perfluorotetradecanoic acid



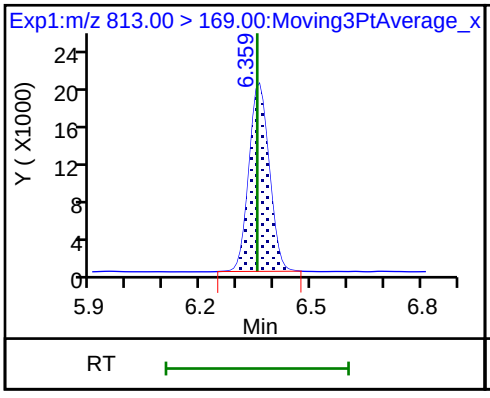
D 64 13C2 PFHxDA



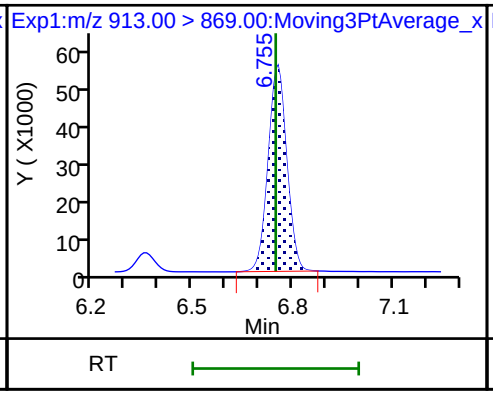
63 Perfluorohexadecanoic acid



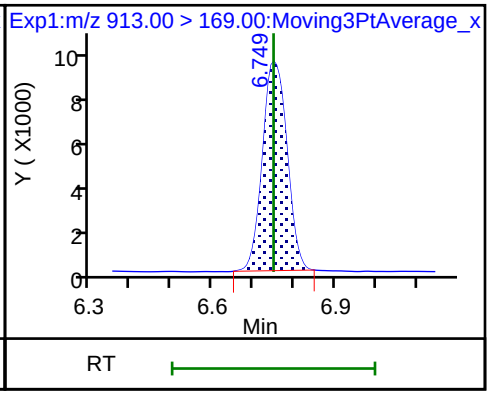
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

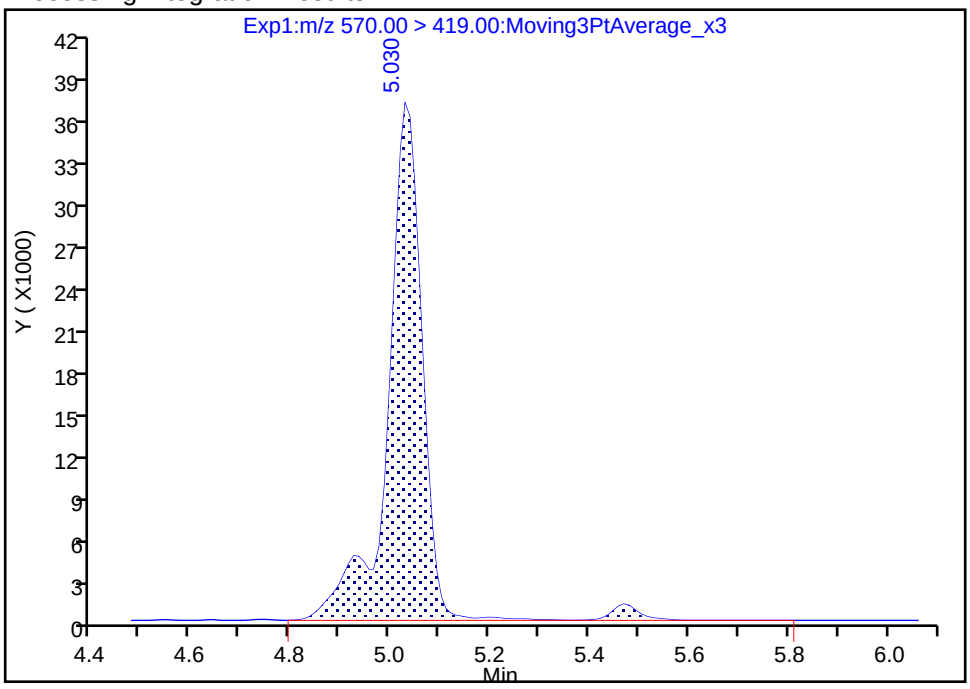
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0010.d				
Injection Date:	03-Jun-2020 21:07:18	Instrument ID:	A18		
Lims ID:	IC STD 3				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	3	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 NMeFOSAA, CAS: 2355-31-9

Signal: 1

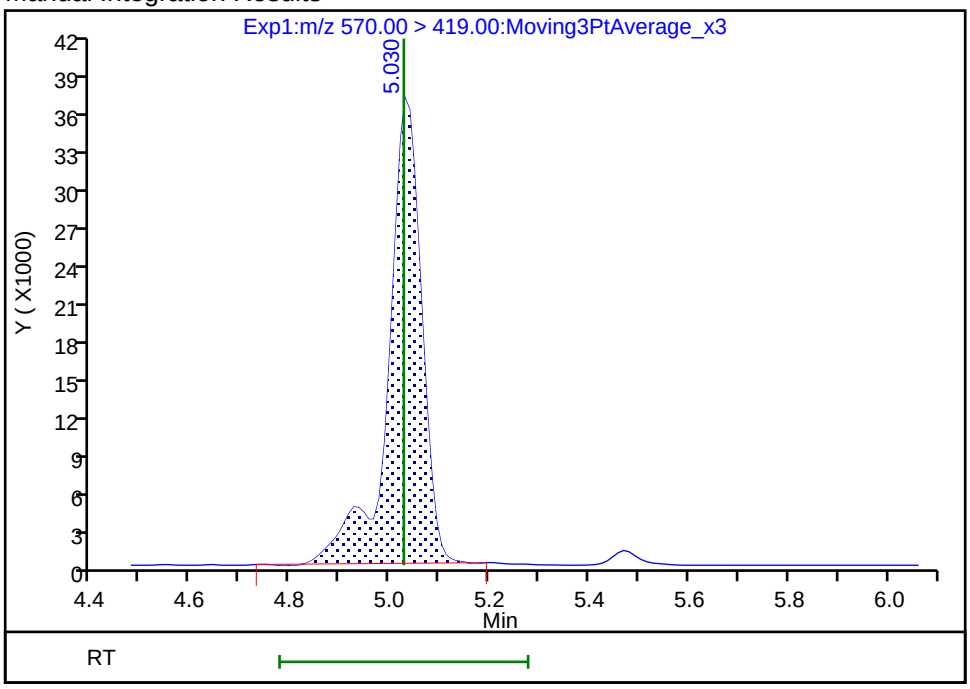
Processing Integration Results

RT: 5.03
Area: 177981
Amount: 0.228565
Amount Units: ng/ml



Manual Integration Results

RT: 5.03
Area: 169306
Amount: 0.219628
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 06:00:21

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0011.d
Lims ID: IC STD 4
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 03-Jun-2020 21:16:23 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: IC STD 4 (026)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 04-Jun-2020 10:32:38 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1046

First Level Reviewer: duranl Date: 04-Jun-2020 05:53:27
Ratio Calibration: Average of Initial Calibration

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	2.557	2.579	-0.022	0.619	10244180	2.48		99.3	4389	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.557	2.581	-0.024	1.000	3512944	1.01		101	864	
D 4 13C5 PFPeA										
267.90 > 223.00	2.950	2.957	-0.007	0.714	8921828	2.41		96.4	4636	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.950	2.959	-0.009	1.000	3490065	1.02		102	796	
D 9 13C3 PFBS										
301.90 > 80.00	2.985	2.998	-0.013	0.723	6643096	2.29		98.7	6294	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.997	3.003	-0.006	1.004	2526357	0.9068	Target=2.25	103	2538	
298.90 > 99.00	2.997	3.003	-0.006	1.004	1110622		2.27(1.13-3.38)	103	939	
8 4:2 FTS										
327.00 > 307.00	3.288	3.297	-0.009	1.000	955350	0.9701		104	3430	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.288	3.297	-0.009	0.796	1096916	2.33		99.8	1501	
D 11 13C2 PFHxA										
315.00 > 270.00	3.330	3.339	-0.009	0.806	9283930	2.52		101	4966	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.330	3.339	-0.009	1.000	3345961	0.9688	Target=11.49	96.9	1134	
313.00 > 119.00	3.330	3.339	-0.009	1.000	296736		11.28(5.74-17.23)	96.9	349	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.352	3.359	-0.007	1.123	1978433	0.9660	Target=2.74	103	1941	
349.00 > 99.00	3.352	3.359	-0.007	1.123	739516		2.68(1.37-4.12)	103	1820	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.447	3.459	-0.012	0.834	1771761	2.46		98.4	2342	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.447	3.459	-0.012	1.000	665757	0.99		99.3	1819	
D 18 13C4 PFHpA										
367.00 > 322.00	3.740	3.743	-0.002	0.905	8160086	2.49		99.7	7750	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.740	3.743	-0.002	1.000	3224792	1.00	Target=3.25	100	1047	
363.00 > 169.00	3.740	3.743	-0.002	1.000	1005269		3.21(1.62-4.87)	100	1460	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.750	3.752	-0.002	1.000	1422679	0.8847	Target=2.90	97.2	5449	
399.00 > 99.00	3.750	3.752	-0.002	1.000	491462		2.89(1.45-4.35)	97.2	1662	
D 17 18O2 PFHxS										
403.00 > 84.00	3.750	3.752	-0.002	0.908	3303564	2.39		101	5182	
19 DONA										
377.00 > 251.00	3.790	3.794	-0.004	0.843	8989122	0.9483	Target=2.01	101	8492	
377.00 > 85.00	3.790	3.794	-0.004	0.843	4433452		2.03(1.00-3.01)	101	4739	
21 6:2 FTS										
427.00 > 407.00	4.115	4.117	-0.002	1.000	745322	0.9829		104	2117	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.115	4.117	-0.002	0.996	899267	2.37		99.8	2471	
$ 26 13C8 PFOA										
421.00 > 376.00	4.131	4.134	-0.003	1.000	6562263	2.43		99.1	6390	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.131	4.136	-0.005	0.919	853750	0.9463	Target=3.25	99.4	2066	
449.00 > 99.00	4.131	4.136	-0.005	0.919	272282		3.14(1.63-4.88)	99.4	1010	
D 25 13C4 PFOA										
417.00 > 372.00	4.131	4.139	-0.008	1.000	8286205	2.53		101	7710	
* 23 13C2 PFOA										
415.00 > 370.00	4.131	4.141	-0.010		8276555	2.50			7836	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.140	4.141	-0.001	1.002	3150668	0.9388	Target=2.35	93.9	1315	
413.00 > 169.00	4.131	4.141	-0.010	1.000	1376909		2.29(1.18-3.53)	93.9	4226	
$ 28 13C8 PFOS										
507.00 > 99.00	4.494	4.496	-0.002	1.088	474148	2.34		97.9	1548	
D 27 13C4 PFOS										
503.00 > 80.00	4.494	4.499	-0.005	1.088	1424253	2.43		102	3409	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.494	4.500	-0.006	1.000	565411	0.9407	Target=2.41	101	1020	M
499.00 > 99.00	4.494	4.500	-0.006	1.000	226293		2.50(1.21-3.62)	101	724	
31 Perfluorononanoic acid										
463.00 > 419.00	4.510	4.512	-0.002	1.000	2610945	1.00	Target=6.74	100	945	
463.00 > 169.00	4.510	4.512	-0.002	1.000	396348		6.59(3.37-10.11)	100	814	
D 30 13C5 PFNA										
468.00 > 423.00	4.510	4.513	-0.003	1.092	6790000	2.54		102	6976	
32 9ClFOS										
531.00 > 351.00	4.688	4.694	-0.006	1.043	2725619	0.9243		99.2	4343	
D 33 13C8 FOSA										
506.00 > 78.00	4.829	4.832	-0.003	1.169	3240917	2.49		99.7	4738	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.829	4.835	-0.006	1.000	1191472	1.00		100	2915	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.837	4.841	-0.004	1.076	458680	0.9850	Target=1.37	103	1508	
549.00 > 99.00	4.837	4.841	-0.004	1.076	325403		1.41(0.69-2.06)	103	1224	
D 39 13C2 PFDA										
515.00 > 470.00	4.854	4.862	-0.008	1.175	7397770	2.56		103	6697	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.854	4.862	-0.008	1.000	2667118	1.01	Target=8.07	101	2473	
513.00 > 169.00	4.854	4.862	-0.008	1.000	325946		8.18(4.04-12.11)	101	310	
36 8:2 FTS										
527.00 > 507.00	4.863	4.864	-0.001	1.000	718249	0.9516		99.3	3091	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.863	4.864	-0.001	1.177	1177027	2.46		103	2468	
D 40 d3-NMeFOSAA										
573.00 > 419.00	5.021	5.023	-0.002	1.215	2519170	2.35		94.0	2582	
41 NMeFOSAA										M
570.00 > 419.00	5.021	5.027	-0.006	1.000	725376	1.02		102	642	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.148	5.152	-0.004	1.145	336549	0.9770	Target=1.31	101	1816	
599.00 > 99.00	5.148	5.152	-0.004	1.145	254013		1.32(0.65-1.96)	101	1395	
D 43 13C2 PFUnA										
565.00 > 520.00	5.175	5.178	-0.003	1.253	6781343	2.51		100	11440	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.175	5.179	-0.004	1.000	2000568	1.00	Target=6.70	99.6	3170	
563.00 > 169.00	5.175	5.179	-0.004	1.000	282663		7.08(3.35-10.05)	99.6	1158	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.175	5.181	-0.006	1.253	2776260	2.54		102	4331	
46 NEtFOSA										
584.00 > 419.00	5.184	5.189	-0.005	1.002	740862	0.9501		95.0	1888	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.279	5.287	-0.008	1.278	9872296	12.8		102	6723	
48 N-MeFOSE-M										
616.00 > 59.00	5.299	5.301	-0.002	1.004	801389	1.03		103	1345	
51 11ClFOS										
631.00 > 451.00	5.310	5.309	0.001	1.181	3044892	0.9416		100.0	12216	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.310	5.311	-0.001	1.285	1484616	2.43		97.2	33.7	
50 NMeFOSA										
512.00 > 169.00	5.310	5.316	-0.006	1.000	620301	1.13		113	627	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.448	5.454	-0.006	1.319	10629618	12.1		96.8	4154	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.459	5.462	-0.003	1.000	2735335	0.9546	Target=6.20	95.5	1566	
613.00 > 169.00	5.459	5.462	-0.003	1.000	441885		6.19(3.10-9.30)	95.5	1897	
D 56 13C2 PFDoA										
615.00 > 570.00	5.459	5.462	-0.003	1.321	7691922	2.70		108	6693	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
53 N-EtFOSE-M										
630.00 > 59.00	5.470	5.468	0.002	1.004	940920	1.10		110	1804	
58 10:2 FTS										
627.00 > 607.00	5.470	5.477	-0.007	1.125	573834	0.9614		99.7	2057	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.480	5.482	-0.002	1.327	1524156	2.43		97.1	384	
55 N-EtFOSA-M										
526.00 > 169.00	5.480	5.486	-0.006	1.000	679547	1.07		107	414	
59 PFDoS										
699.00 > 80.00	5.679	5.680	-0.001	1.264	302931	0.9499	Target=2.11	98.1	1658	
699.00 > 99.00	5.679	5.680	-0.001	1.264	150904		2.01(1.06-3.17)	98.1	1066	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.712	5.715	-0.003	1.046	2740766	1.02	Target=4.98	102	3401	
663.00 > 169.00	5.712	5.715	-0.003	1.046	456695		6.00(2.49-7.47)	102	1413	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.937	5.945	-0.008	1.437	6045514	2.53		101	7030	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.937	5.945	-0.008	1.000	328471	1.02	Target=0.96	102	1383	
713.00 > 219.00	5.937	5.945	-0.008	1.000	340226		0.97(0.48-1.43)	102	2430	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.342	6.352	-0.010	1.535	3929844	2.33		93.0	5492	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.351	6.353	-0.002	1.001	1501905	1.08	Target=5.10	108	1308	
813.00 > 169.00	6.351	6.353	-0.002	1.001	300434		5.00(2.55-7.64)	108	2353	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.742	6.748	-0.006	1.063	905281	1.07	Target=5.50	107	755	
913.00 > 169.00	6.742	6.748	-0.006	1.063	159611		5.67(2.75-8.25)	107	1432	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 04-Jun-2020 10:32:39 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0011.d

Injection Date: 03-Jun-2020 21:16:23 Instrument ID: A18

Lims ID: IC STD 4

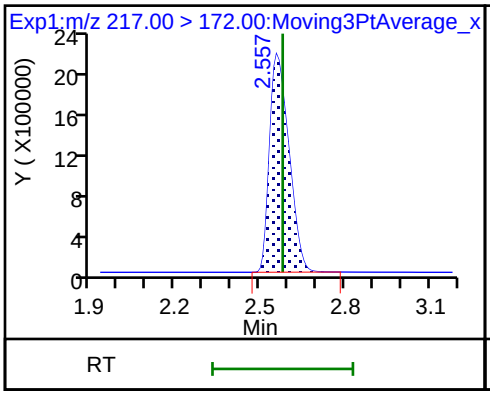
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 4 Worklist Smp#: 5

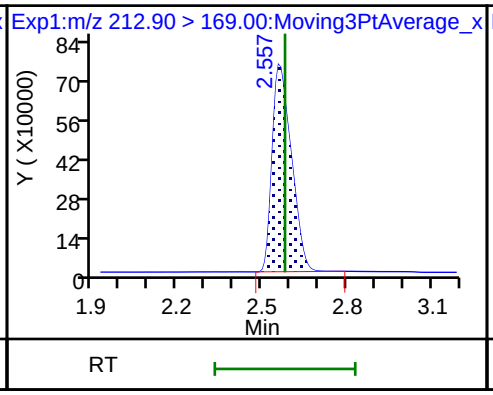
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

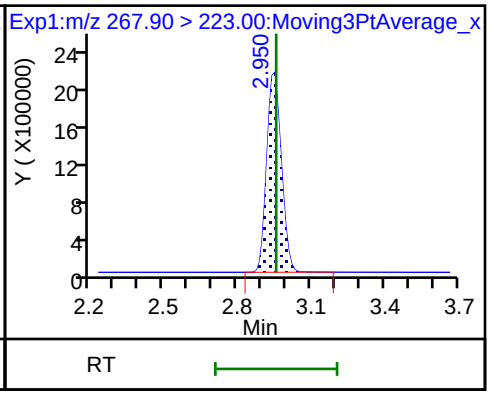
D 1 13C4 PFBA



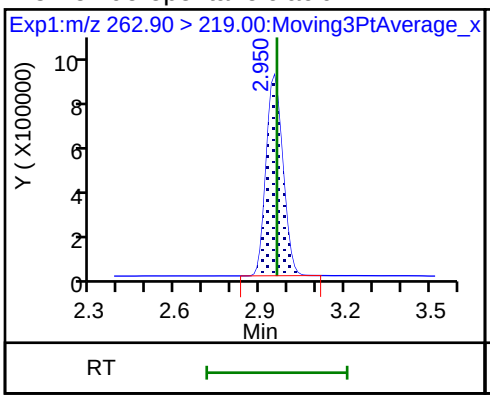
2 Perfluorobutanoic acid



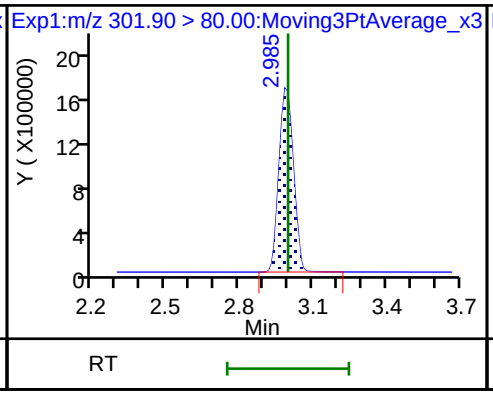
D 4 13C5 PFPeA



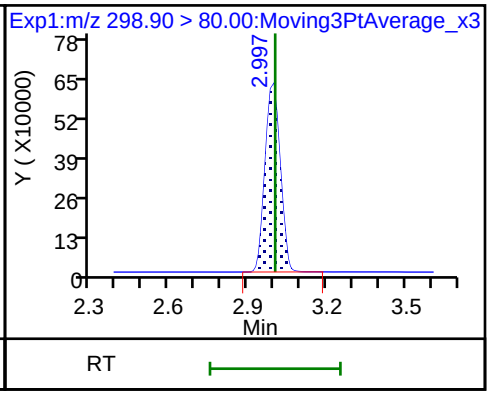
5 Perfluoropentanoic acid



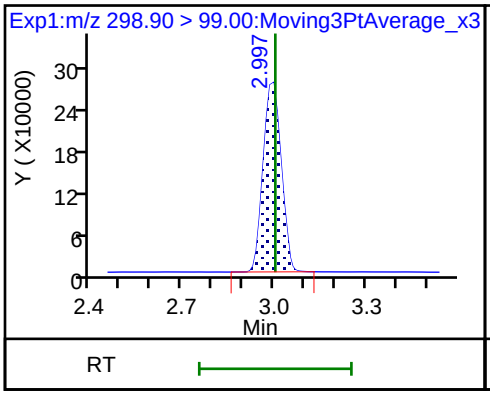
D 9 13C3 PFBS



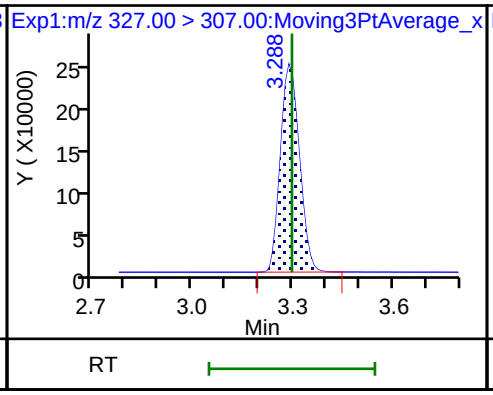
6 Perfluorobutanesulfonic acid



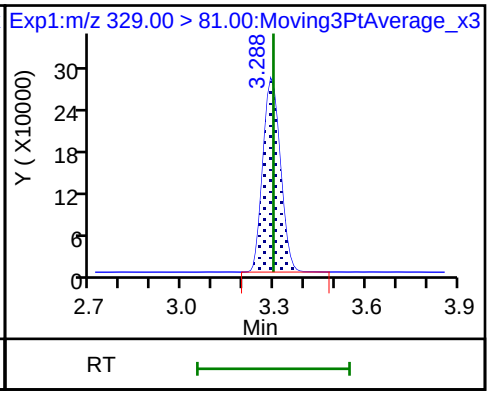
6 Perfluorobutanesulfonic acid



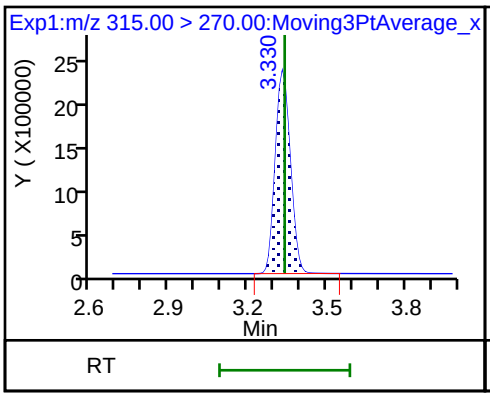
8 4:2 FTS



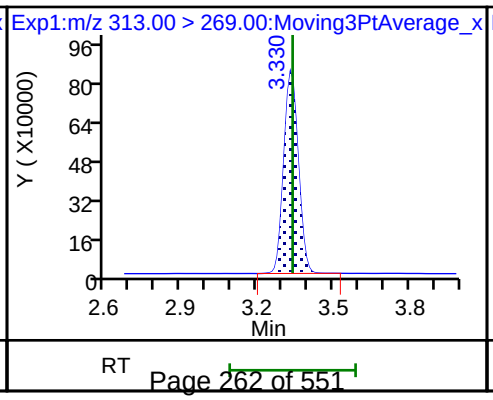
D 7 M2-4:2 FTS



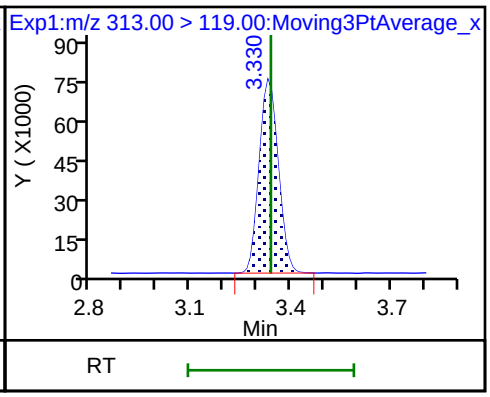
D 11 13C2 PFHxA



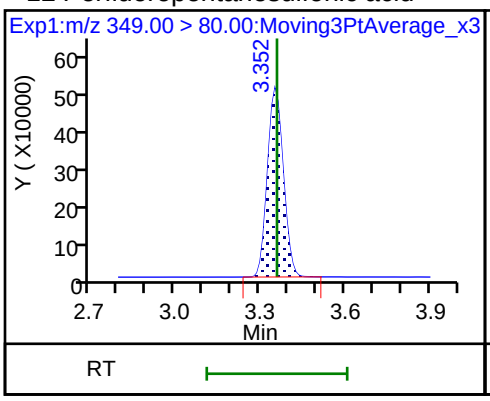
10 Perfluorohexanoic acid



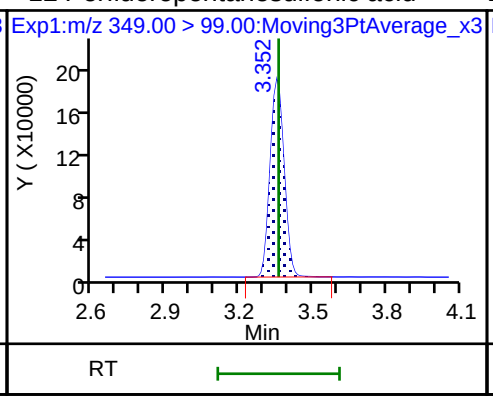
10 Perfluorohexanoic acid



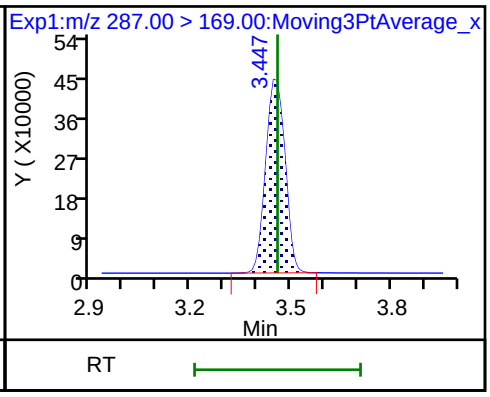
12 Perfluoropentanesulfonic acid



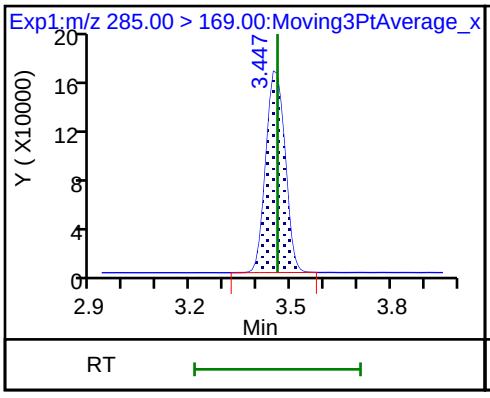
12 Perfluoropentanesulfonic acid



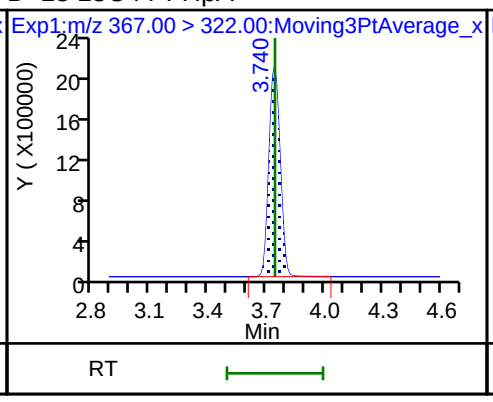
D 14 13C3 HFPO-DA



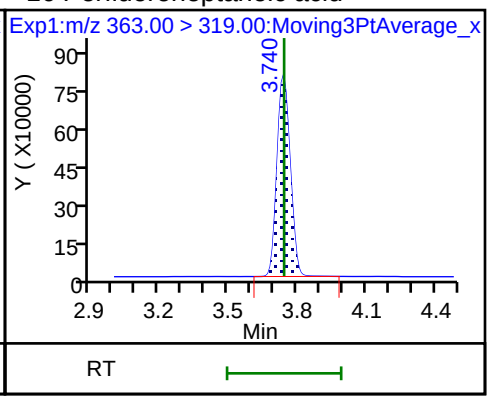
13 HPFO-DA



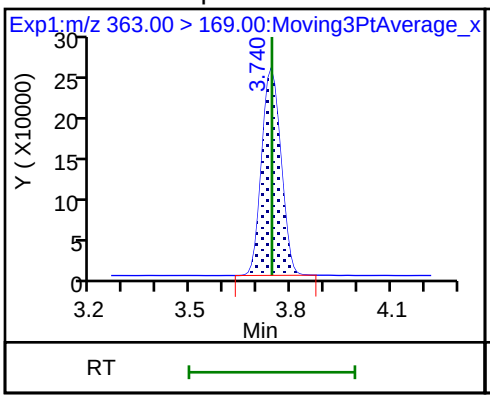
D 18 13C4 PFHpA



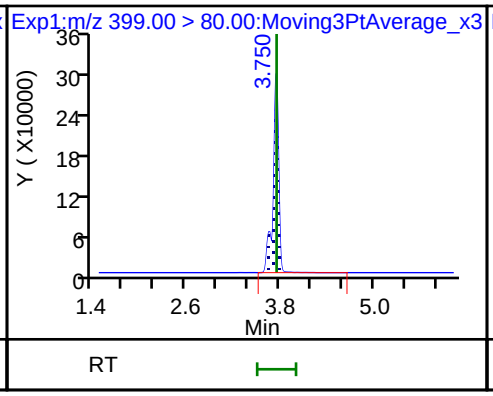
16 Perfluoroheptanoic acid



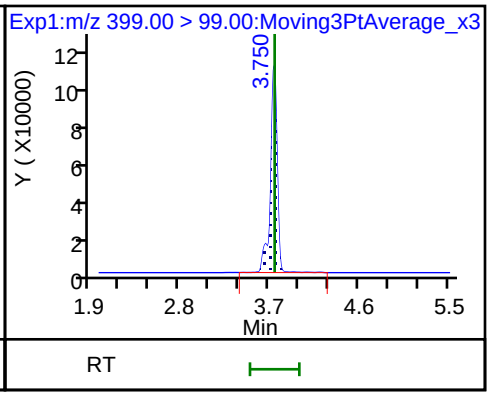
16 Perfluoroheptanoic acid



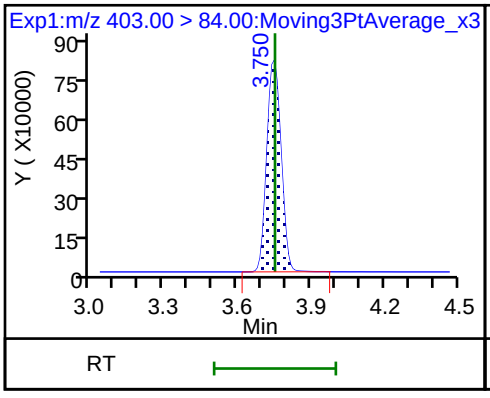
15 Perfluorohexanesulfonic acid



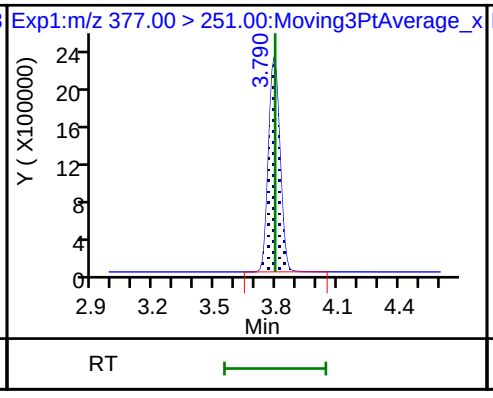
15 Perfluorohexanesulfonic acid



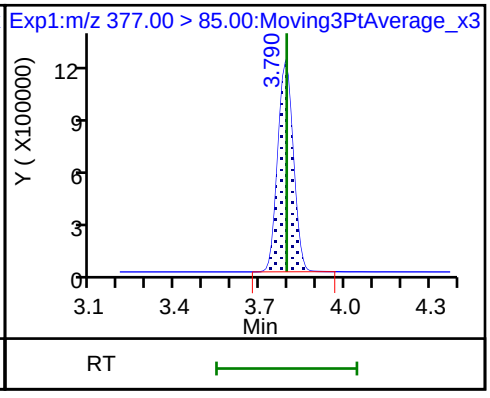
D 17 18O2 PFHxS



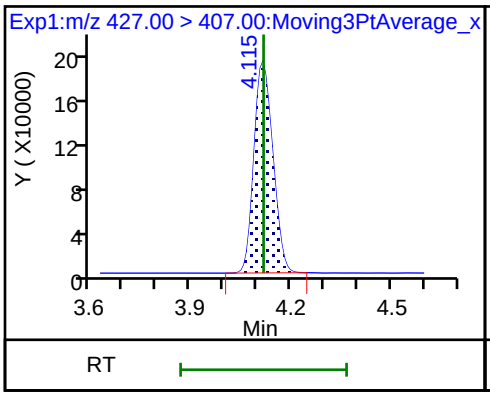
19 DONA



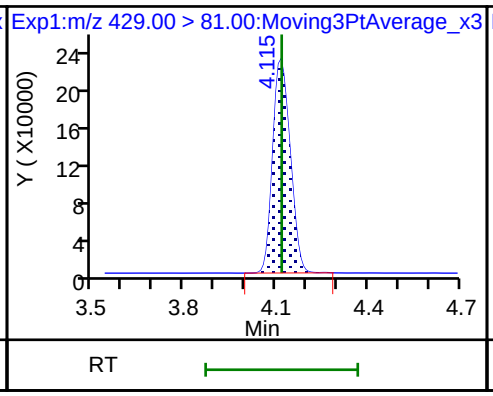
19 DONA



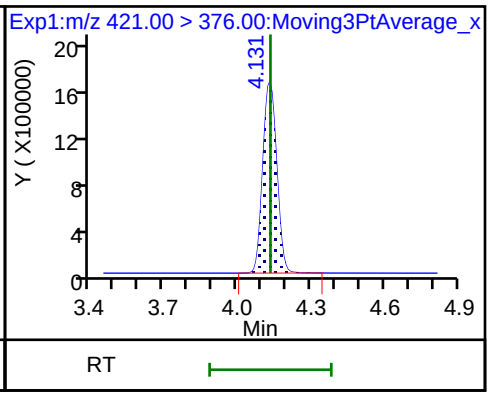
21 6:2 FTS



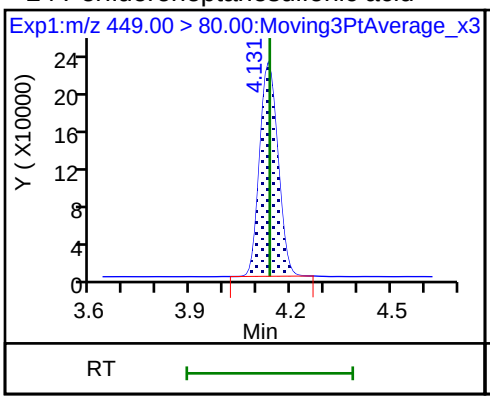
D 20 M2-6:2 FTS



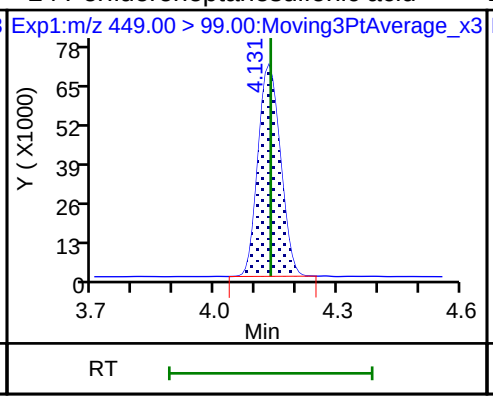
$ 26 13C8 PFOA



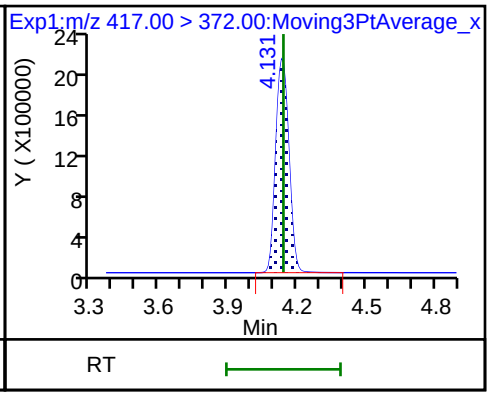
24 Perfluoroheptanesulfonic acid



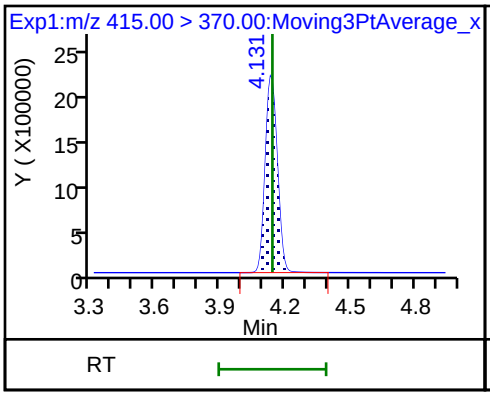
24 Perfluoroheptanesulfonic acid



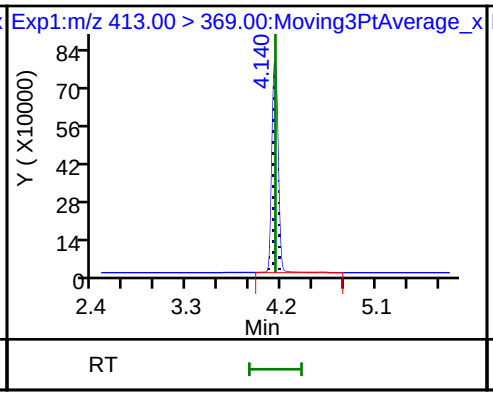
D 25 13C4 PFOA



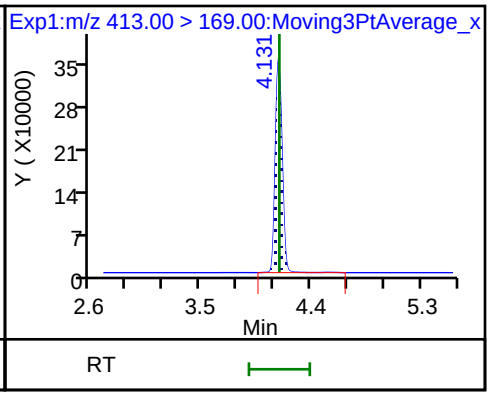
* 23 13C2 PFOA



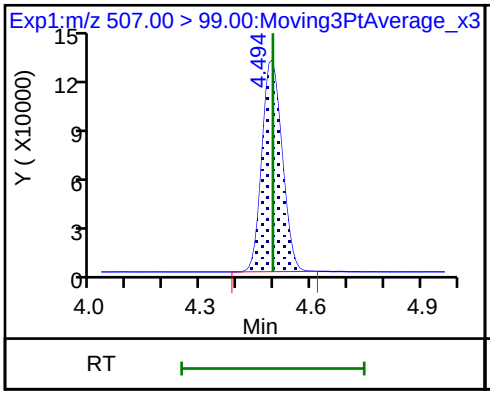
22 Perfluorooctanoic acid



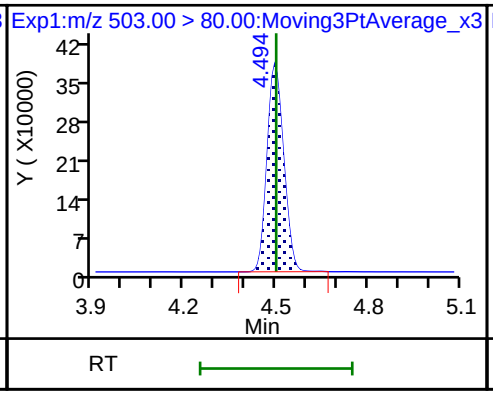
22 Perfluorooctanoic acid



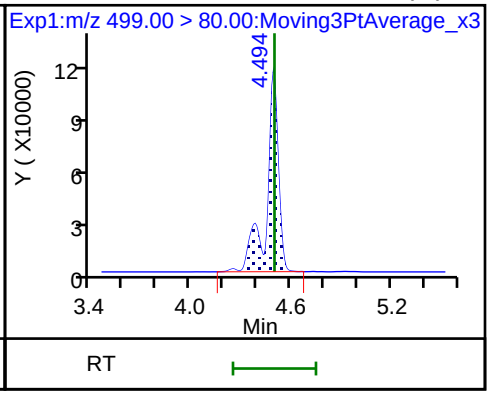
$ 28 13C8 PFOS



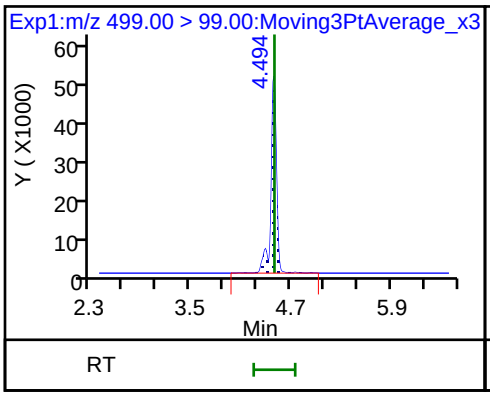
D 27 13C4 PFOS



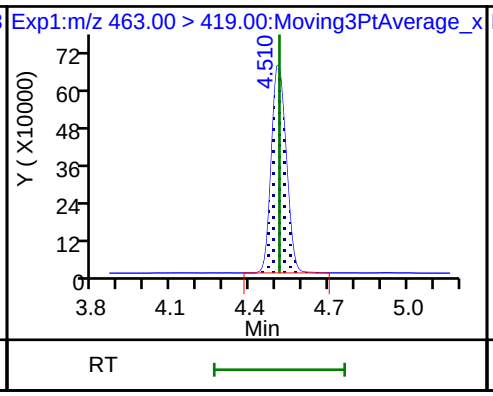
29 Perfluorooctanesulfonic acid (M)



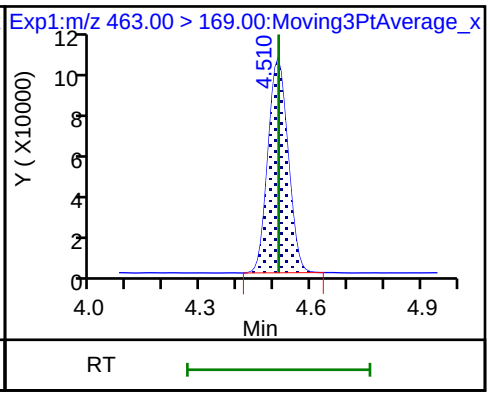
29 Perfluorooctanesulfonic acid



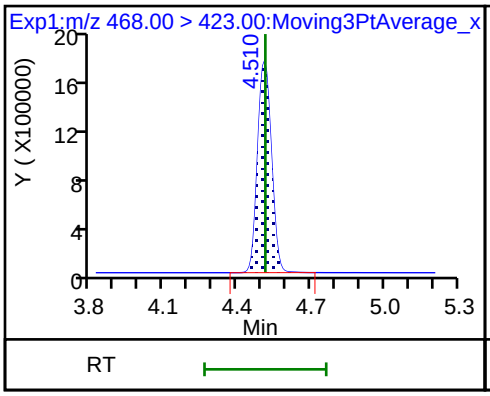
31 Perfluorononanoic acid



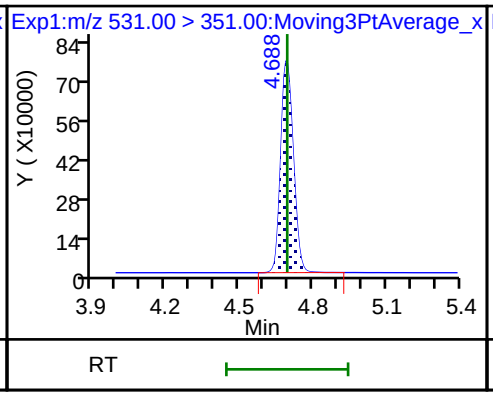
31 Perfluorononanoic acid



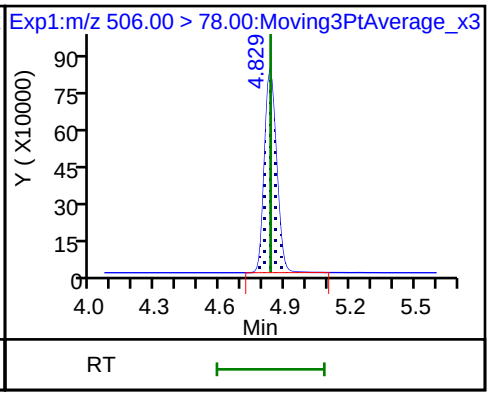
D 30 13C5 PFNA



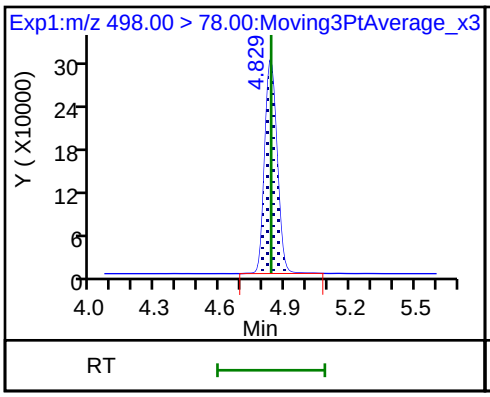
32 9ClFOS



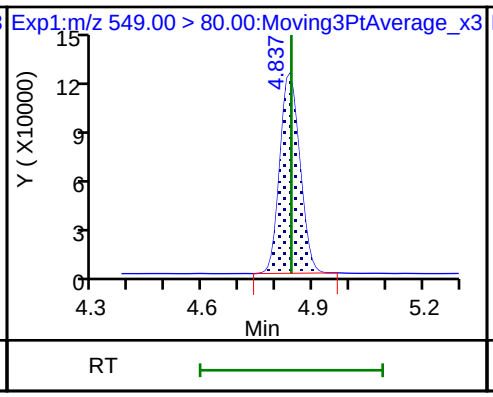
D 33 13C8 FOSA



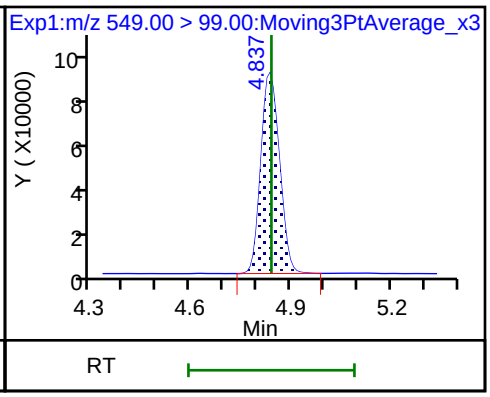
34 Perfluorooctanesulfonamide



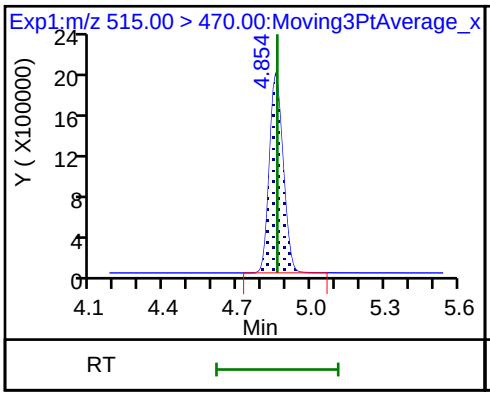
35 Perfluorononanesulfonic acid



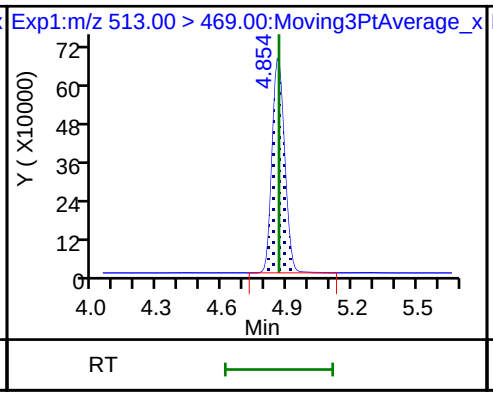
35 Perfluorononanesulfonic acid



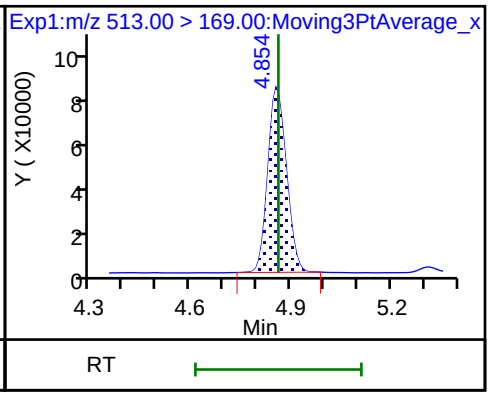
D 39 13C2 PFDA



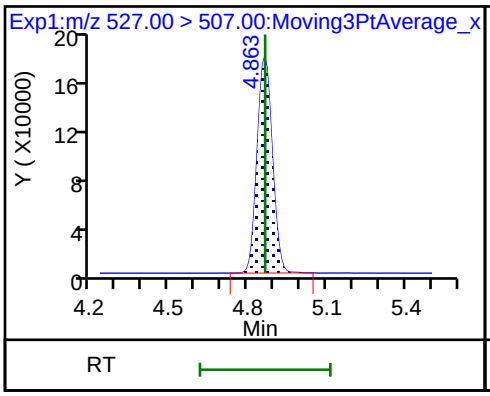
37 Perfluorodecanoic acid



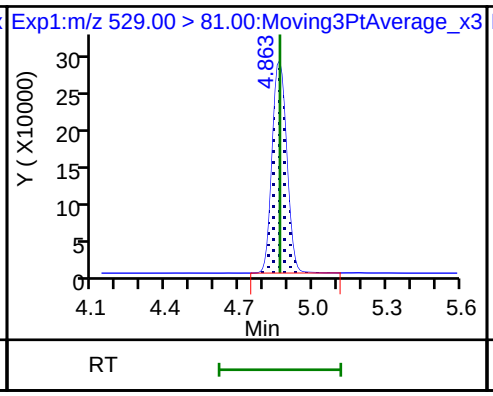
37 Perfluorodecanoic acid



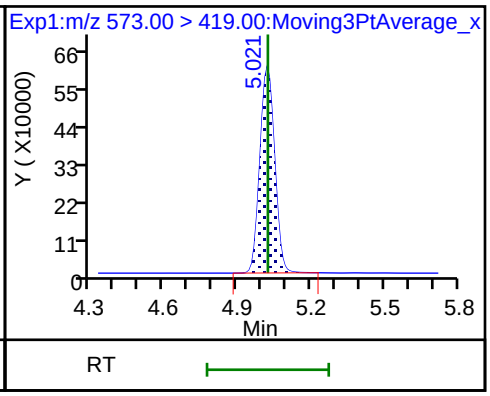
36 8:2 FTS



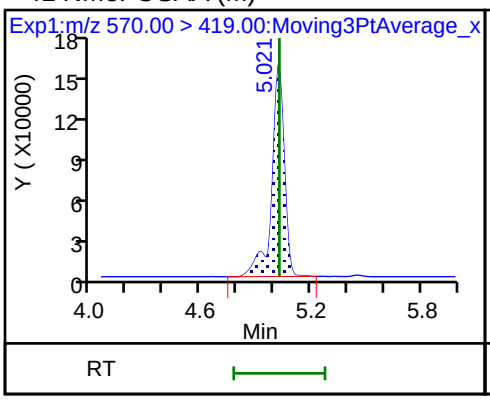
D 38 M2-8:2 FTS



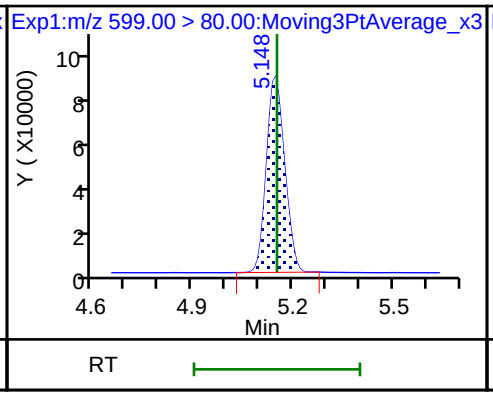
D 40 d3-NMeFOSAA



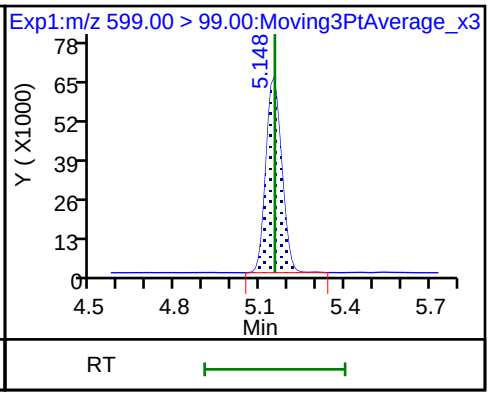
41 NMeFOSAA (M)



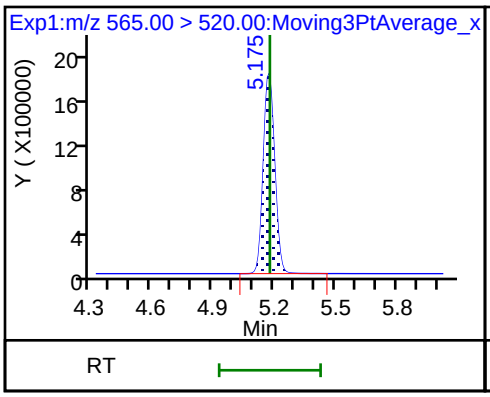
42 Perfluorodecanesulfonic acid



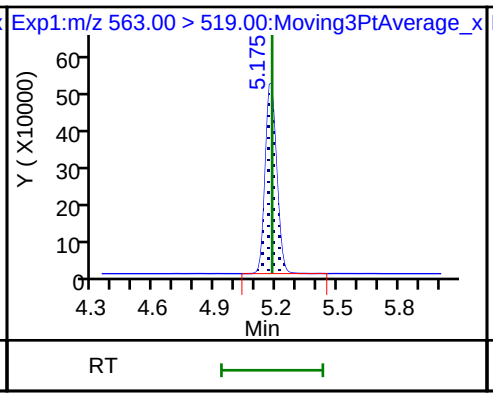
42 Perfluorodecanesulfonic acid



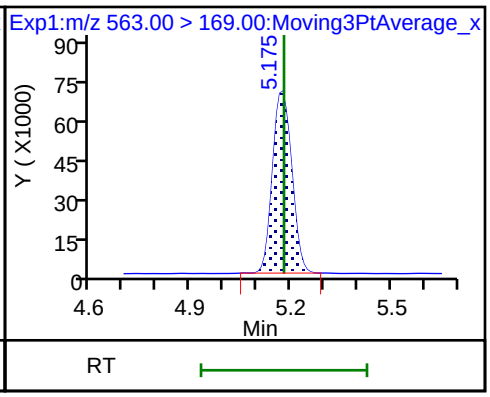
D 43 13C2 PFUnA



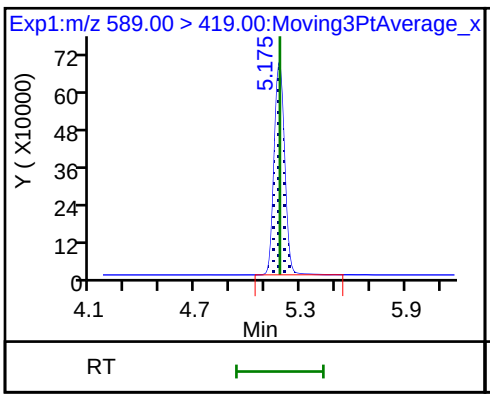
45 Perfluoroundecanoic acid



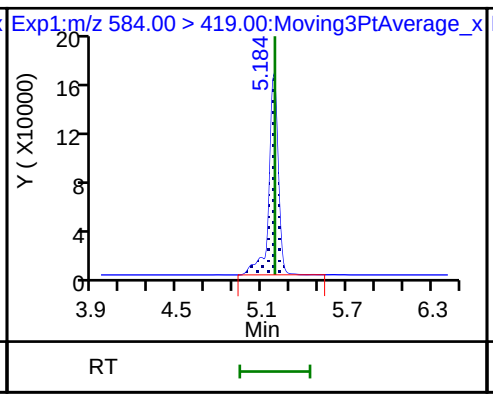
45 Perfluoroundecanoic acid



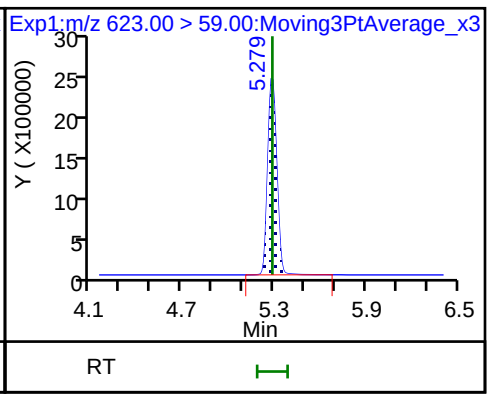
D 44 d5-NEtFOSAA



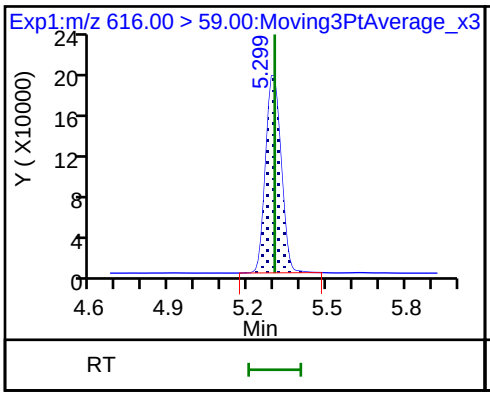
46 NEtFOSA



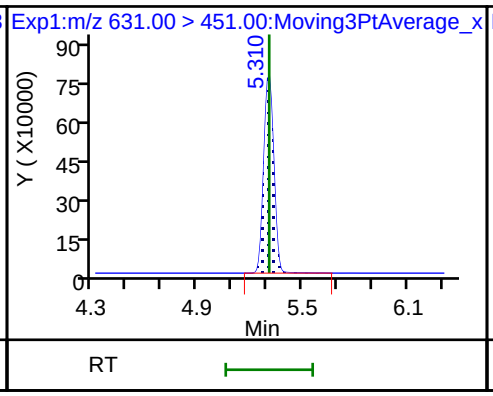
D 47 d7-N-MeFOSE-M



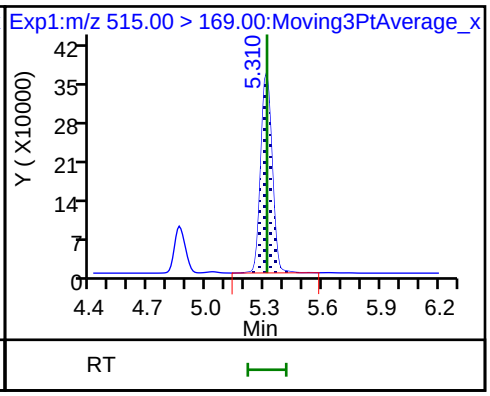
48 N-MeFOSE-M



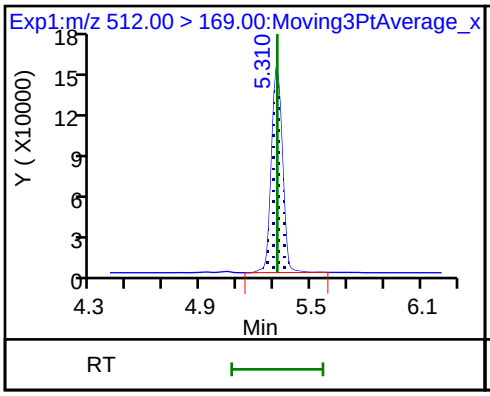
51 11ClFOS



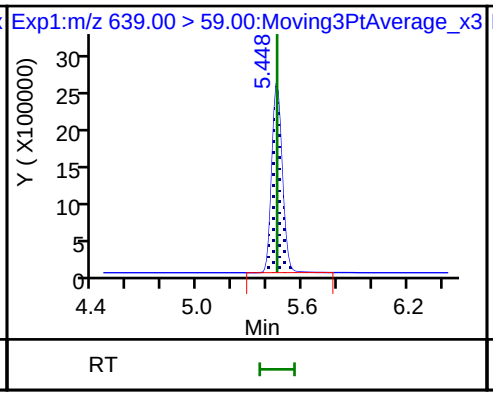
D 49 d-N-MeFOSA-M



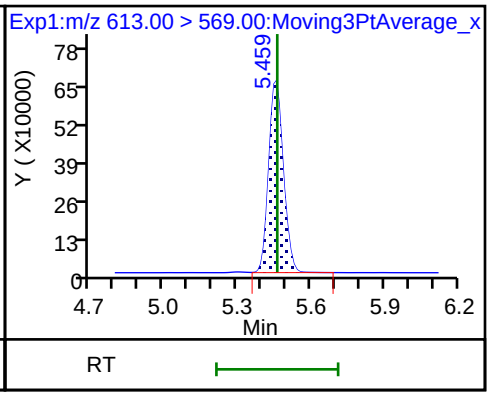
50 NMeFOSA



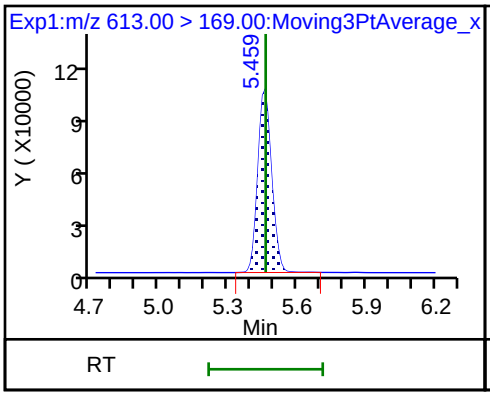
D 52 d9-N-EtFOSE-M



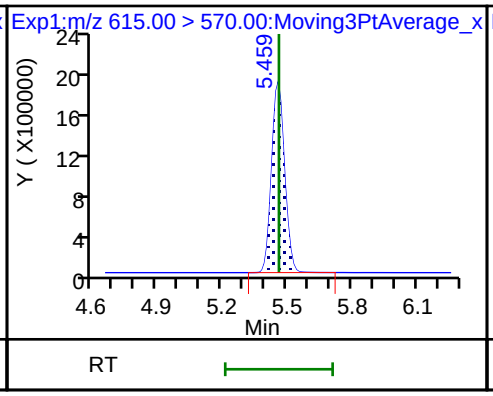
57 Perfluorododecanoic acid



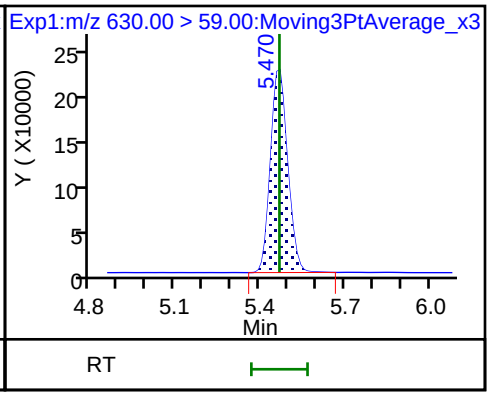
57 Perfluorododecanoic acid



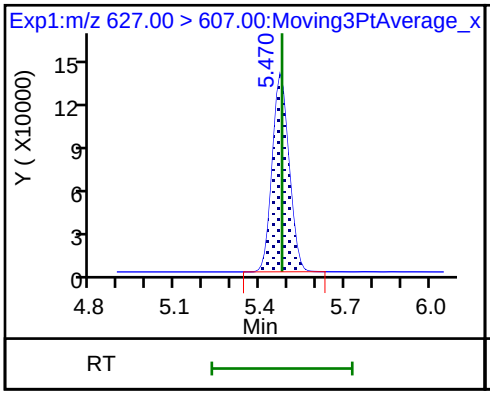
D 56 13C2 PFDoA



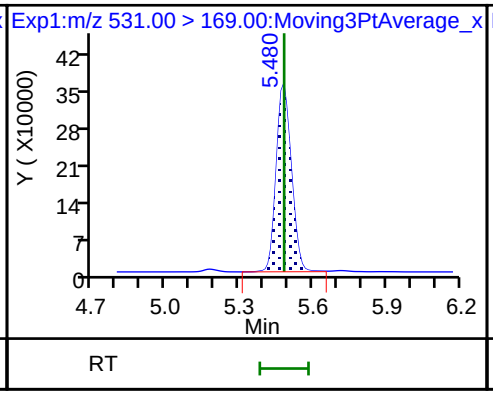
53 N-EtFOSE-M



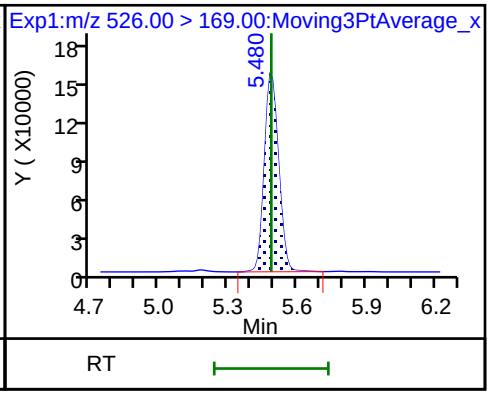
58 10:2 FTS



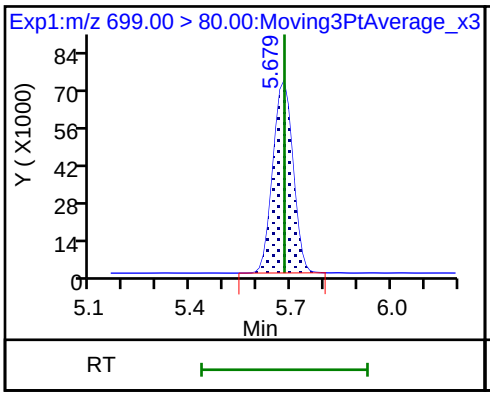
D 54 d-N-EtFOSA-M



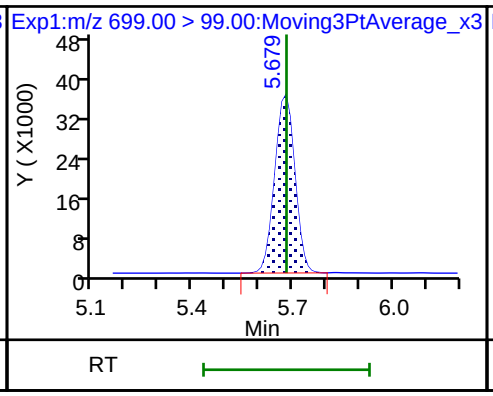
55 N-EtFOSA-M



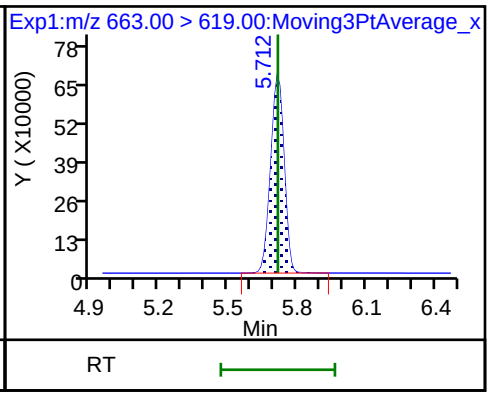
59 PFDoS



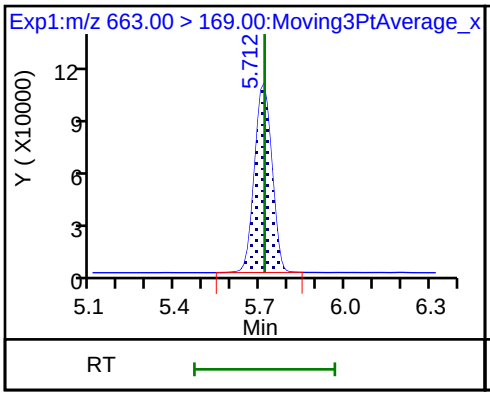
59 PFDoS



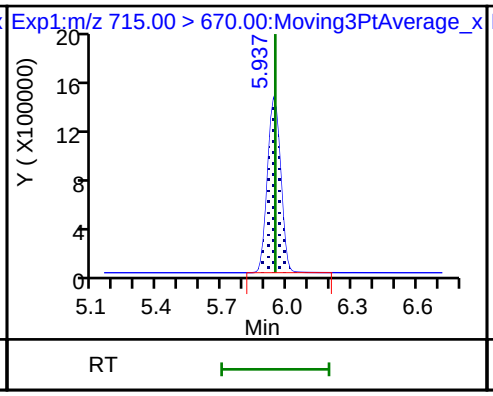
60 Perfluorotridecanoic acid



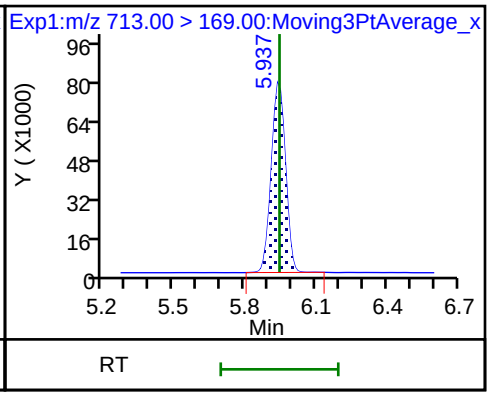
60 Perfluorotridecanoic acid



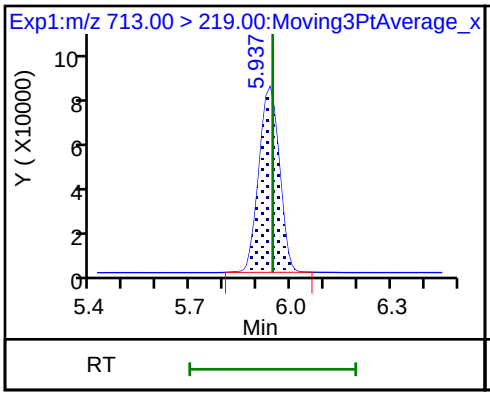
D 61 13C2 PFTeDA



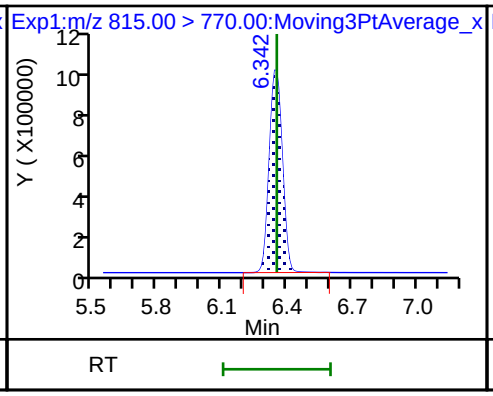
62 Perfluorotetradecanoic acid



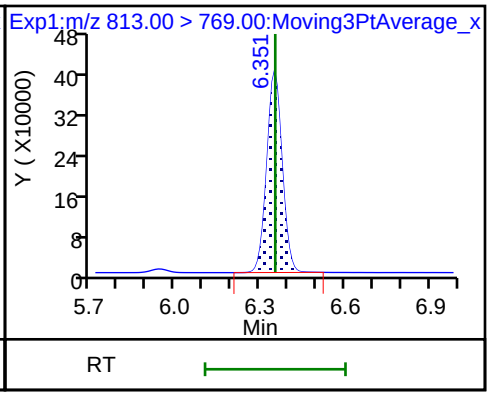
62 Perfluorotetradecanoic acid



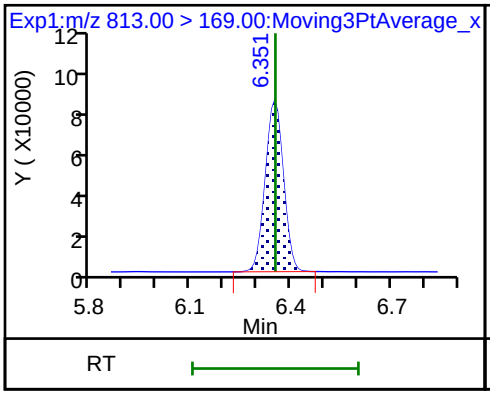
D 64 13C2 PFHxDA



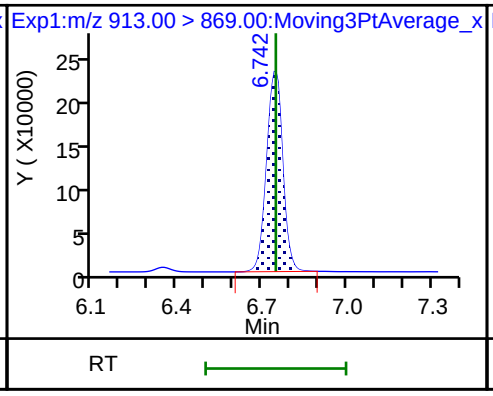
63 Perfluorohexadecanoic acid



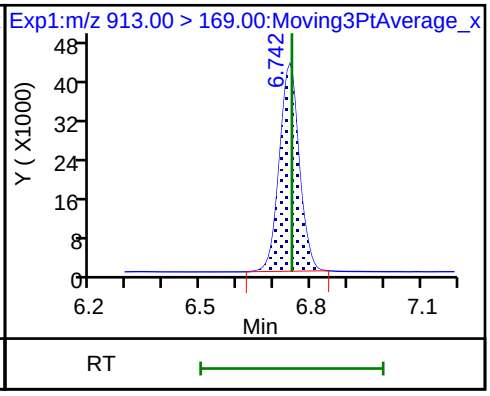
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

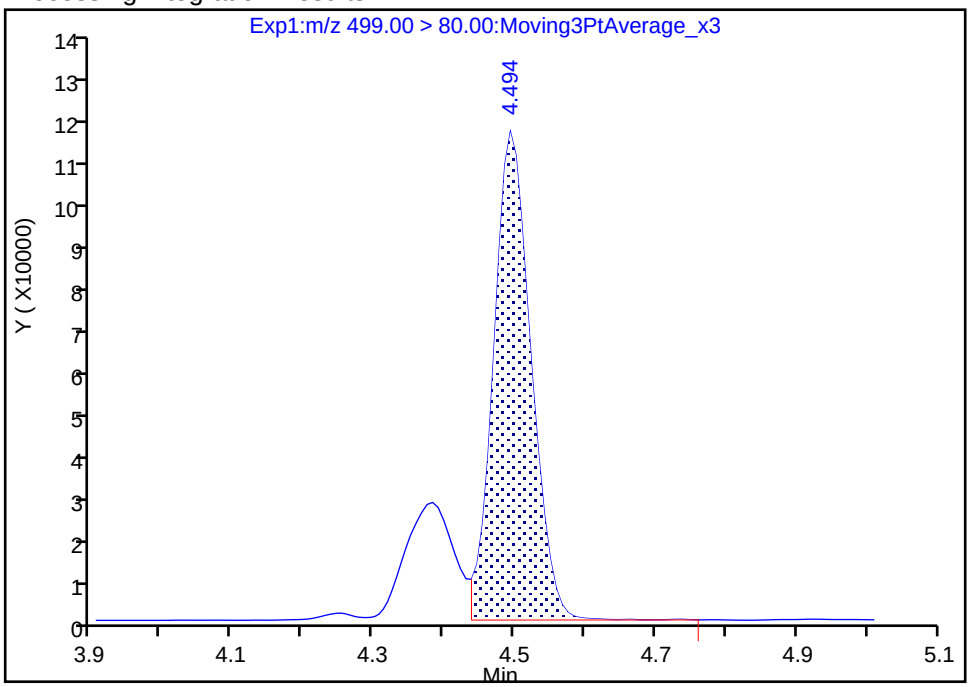
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0011.d
Injection Date: 03-Jun-2020 21:16:23 Instrument ID: A18
Lims ID: IC STD 4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 4 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

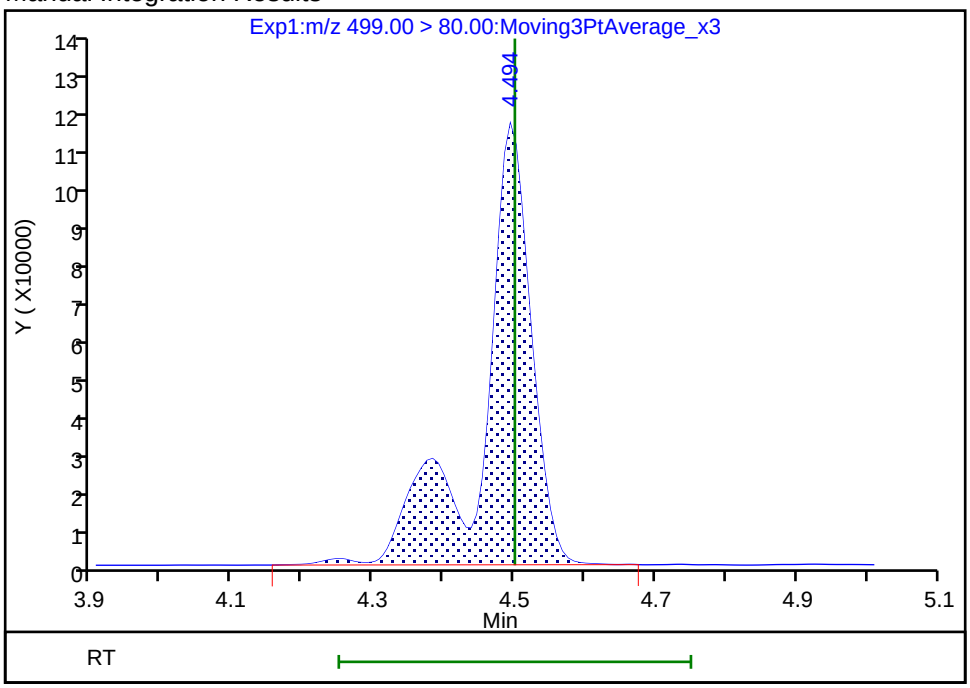
Processing Integration Results

RT: 4.49
Area: 427085
Amount: 0.928000
Amount Units: ng/ml



Manual Integration Results

RT: 4.49
Area: 565411
Amount: 0.940714
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:46:32
Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

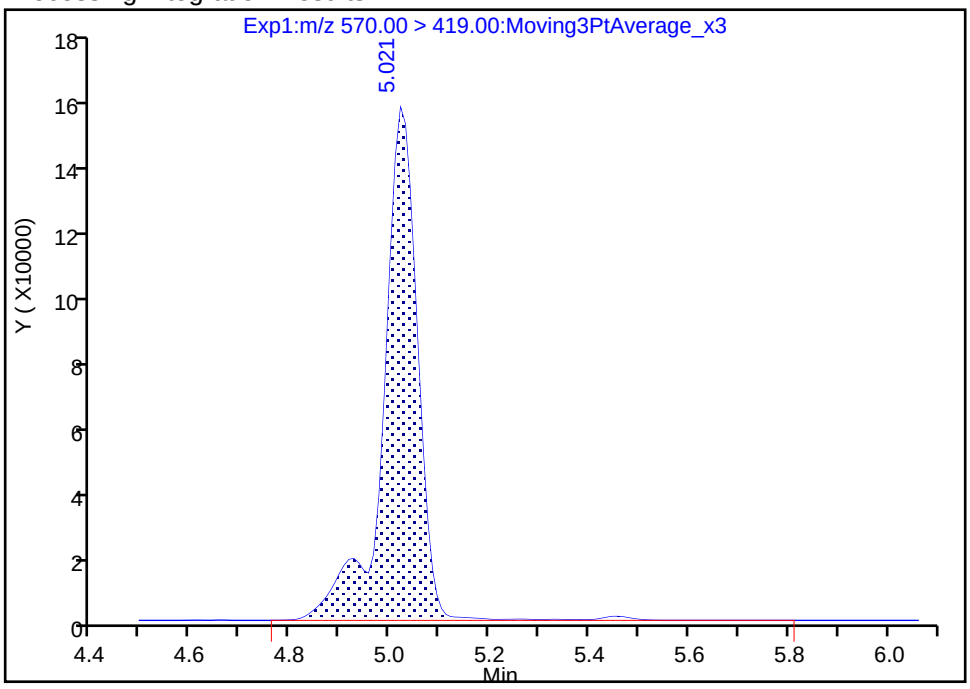
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0011.d				
Injection Date:	03-Jun-2020 21:16:23	Instrument ID:	A18		
Lims ID:	IC STD 4				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	4	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 NMeFOSAA, CAS: 2355-31-9

Signal: 1

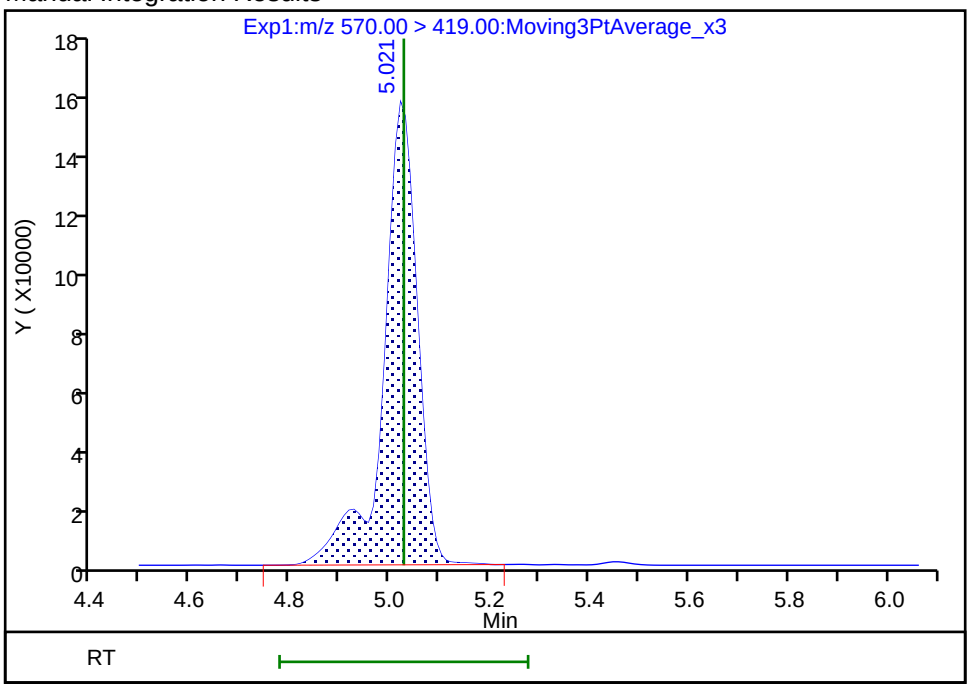
Processing Integration Results

RT: 5.02
Area: 735327
Amount: 1.000000
Amount Units: ng/ml



Manual Integration Results

RT: 5.02
Area: 725376
Amount: 1.016676
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 05:46:45
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0012.d
Lims ID: IC STD 5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 03-Jun-2020 21:25:28 ALS Bottle#: 5 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: IC STD 5 (027)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 04-Jun-2020 10:32:46 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1046

First Level Reviewer: duranl Date: 04-Jun-2020 06:01:37
Ratio Calibration: Average of Initial Calibration

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	2.581	2.579	0.002	0.622	10166917	2.48		99.3	8183	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.581	2.581	0.0	1.000	8832148	2.55		102	2211	
D 4 13C5 PFPeA										
267.90 > 223.00	2.961	2.957	0.004	0.714	9268985	2.52		101	7548	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.961	2.959	0.002	1.000	8757231	2.45		98.1	1880	
D 9 13C3 PFBS										
301.90 > 80.00	3.009	2.998	0.011	0.725	6525531	2.27		97.7	6019	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.009	3.003	0.006	1.000	6242728	2.28	Target=2.25	103	3892	
298.90 > 99.00	3.009	3.003	0.006	1.000	2805890		2.22(1.13-3.38)	103	1964	
8 4:2 FTS										
327.00 > 307.00	3.309	3.297	0.012	1.000	2299508	2.43		104	6281	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.309	3.297	0.012	0.798	1053408	2.26		96.6	1658	
D 11 13C2 PFHxA										
315.00 > 270.00	3.352	3.339	0.013	0.808	9089479	2.48		99.4	7003	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.352	3.339	0.013	1.000	8394935	2.48	Target=11.49	99.3	2187	
313.00 > 119.00	3.352	3.339	0.013	1.000	730700		11.49(5.74-17.23)	99.3	852	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.362	3.359	0.003	1.117	4742114	2.36	Target=2.74	101	3157	
349.00 > 99.00	3.362	3.359	0.003	1.117	1807235		2.62(1.37-4.12)	101	1965	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.469	3.459	0.010	0.836	1749993	2.45		97.9	3123	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.469	3.459	0.010	1.000	1722088	2.60		104	4202	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.750	3.743	0.008	1.000	8182409	2.60	Target=3.25	104	2380	
363.00 > 169.00	3.750	3.743	0.008	1.000	2479309		3.30(1.62-4.87)	104	2440	
D 18 13C4 PFHpA										
367.00 > 322.00	3.750	3.743	0.008	0.904	7996259	2.46		98.5	5821	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.760	3.752	0.008	1.000	3396127	2.19	Target=2.90	96.1	14561	
399.00 > 99.00	3.760	3.752	0.008	1.000	1152111		2.95(1.45-4.35)	96.1	3217	
D 17 18O2 PFHxS										
403.00 > 84.00	3.760	3.752	0.008	0.907	3190776	2.33		98.4	5054	
19 DONA										
377.00 > 251.00	3.798	3.794	0.004	0.842	22889387	2.57	Target=2.01	109	23618	
377.00 > 85.00	3.798	3.794	0.004	0.842	11413585		2.01(1.00-3.01)	109	6492	
21 6:2 FTS										
427.00 > 407.00	4.123	4.117	0.006	1.000	1737376	2.45		103	3426	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.123	4.117	0.006	0.994	840045	2.23		93.9	2563	
$ 26 13C8 PFOA										
421.00 > 376.00	4.140	4.134	0.006	0.998	6678798	2.49		102	7170	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.140	4.136	0.004	0.918	2125936	2.51	Target=3.25	106	3954	
449.00 > 99.00	4.140	4.136	0.004	0.918	646335		3.29(1.63-4.88)	106	1669	
D 25 13C4 PFOA										
417.00 > 372.00	4.148	4.139	0.009	1.000	7885674	2.42		97.0	8944	
* 23 13C2 PFOA										
415.00 > 370.00	4.148	4.141	0.007		8212686	2.50			7108	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.148	4.141	0.007	1.000	7798451	2.44	Target=2.35	97.7	3257	
413.00 > 169.00	4.148	4.141	0.007	1.000	3313755		2.35(1.18-3.53)	97.7	16546	
$ 28 13C8 PFOS										
507.00 > 99.00	4.502	4.496	0.006	1.085	475604	2.36		98.9	1447	
D 27 13C4 PFOS										
503.00 > 80.00	4.510	4.499	0.011	1.087	1336521	2.30		96.1	2089	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.510	4.500	0.010	1.000	1353615	2.40	Target=2.41	103	1099	
499.00 > 99.00	4.510	4.500	0.010	1.000	554101		2.44(1.21-3.62)	103	1184	
31 Perfluorononanoic acid										
463.00 > 419.00	4.518	4.512	0.006	1.000	6631589	2.58	Target=6.74	103	2033	
463.00 > 169.00	4.518	4.512	0.006	1.000	940718		7.05(3.37-10.11)	103	1635	
D 30 13C5 PFNA										
468.00 > 423.00	4.518	4.513	0.005	1.089	6687074	2.52		101	9339	
32 9ClFOS										
531.00 > 351.00	4.703	4.694	0.009	1.043	6927774	2.50		107	11142	
D 33 13C8 FOSA										
506.00 > 78.00	4.838	4.832	0.006	1.166	3128280	2.42		96.9	2726	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.838	4.835	0.003	1.000	2967886	2.58		103	3495	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.846	4.841	0.005	1.075	1116390	2.55	Target=1.37	106	3334	
549.00 > 99.00	4.846	4.841	0.005	1.075	820069		1.36(0.69-2.06)	106	2643	
D 39 13C2 PFDA										
515.00 > 470.00	4.872	4.862	0.010	1.175	7104635	2.48		99.2	7432	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.872	4.862	0.010	1.000	6416328	2.52	Target=8.07	101	4724	
513.00 > 169.00	4.863	4.862	0.001	0.998	826349		7.76(4.04-12.11)	101	376	
36 8:2 FTS										
527.00 > 507.00	4.872	4.864	0.008	1.000	1774010	2.50		104	3531	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.872	4.864	0.008	1.175	1107359	2.33		97.2	3550	
D 40 d3-NMeFOSAA										
573.00 > 419.00	5.030	5.023	0.007	1.213	2612262	2.46		98.2	2383	
41 NMeFOSAA										M
570.00 > 419.00	5.030	5.027	0.003	1.000	1899727	2.57		103	1353	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.157	5.152	0.005	1.144	865412	2.68	Target=1.31	111	3618	
599.00 > 99.00	5.157	5.152	0.005	1.144	625601		1.38(0.65-1.96)	111	2731	
D 43 13C2 PFUnA										
565.00 > 520.00	5.184	5.178	0.006	1.250	6455430	2.41		96.4	7281	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.184	5.179	0.005	1.000	5099088	2.67	Target=6.70	107	6493	
563.00 > 169.00	5.184	5.179	0.005	1.000	758072		6.73(3.35-10.05)	107	1674	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.184	5.181	0.003	1.250	2677034	2.47		98.7	2909	
46 NEtFOSA										M
584.00 > 419.00	5.194	5.189	0.005	1.002	1771375	2.36		94.2	1794	M
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.290	5.287	0.003	1.275	9211294	12.0		96.0	11364	
48 N-MeFOSE-M										
616.00 > 59.00	5.311	5.301	0.010	1.004	1879431	2.60		104	2977	
51 11ClFOS										
631.00 > 451.00	5.311	5.309	0.002	1.178	7552197	2.49		106	8747	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.321	5.311	0.010	1.283	1468361	2.42		96.8	38.1	
50 NMeFOSA										
512.00 > 169.00	5.321	5.316	0.005	1.000	1496026	2.76		110	704	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.459	5.454	0.005	1.316	10760547	12.3		98.8	6391	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.470	5.462	0.008	1.002	6649461	2.53	Target=6.20	101	3171	
613.00 > 169.00	5.470	5.462	0.008	1.002	1180321		5.63(3.10-9.30)	101	3179	
D 56 13C2 PFDoA										
615.00 > 570.00	5.459	5.462	-0.003	1.316	7054473	2.49		99.7	10830	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
53 N-EtFOSE-M										
630.00 > 59.00	5.470	5.468	0.002	1.002	2157255	2.50		99.9	2210	
58 10:2 FTS										
627.00 > 607.00	5.481	5.477	0.004	1.125	1373371	2.45		101	3136	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.491	5.482	0.009	1.324	1496678	2.40		96.1	349	
55 N-EtFOSA-M										
526.00 > 169.00	5.491	5.486	0.005	1.000	1715647	2.74		110	562	
59 PFDoS										
699.00 > 80.00	5.691	5.680	0.011	1.262	755307	2.52	Target=2.11	104	2653	
699.00 > 99.00	5.679	5.680	-0.001	1.259	363877		2.08(1.06-3.17)	104	1345	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.723	5.715	0.008	1.048	6049149	2.45	Target=4.98	98.1	5438	
663.00 > 169.00	5.723	5.715	0.008	1.048	1306566		4.63(2.49-7.47)	98.1	2311	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.949	5.945	0.004	1.434	5413550	2.29		91.5	7739	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.949	5.945	0.004	1.000	817070	2.83	Target=0.96	113	2274	
713.00 > 219.00	5.949	5.945	0.004	1.000	943727		0.87(0.48-1.43)	113	2966	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.360	6.352	0.008	1.533	4163643	2.48		99.3	5027	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.360	6.353	0.007	1.000	3526022	2.41	Target=5.10	96.3	2096	
813.00 > 169.00	6.360	6.353	0.007	1.000	734630		4.80(2.55-7.64)	96.3	2792	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.749	6.748	0.001	1.061	2254569	2.52	Target=5.50	101	1313	
913.00 > 169.00	6.749	6.748	0.001	1.061	429634		5.25(2.75-8.25)	101	1892	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL5_00027 Amount Added: 1.00 Units: mL

Report Date: 04-Jun-2020 10:32:48 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0012.d

Injection Date: 03-Jun-2020 21:25:28 Instrument ID: A18

Lims ID: IC STD 5

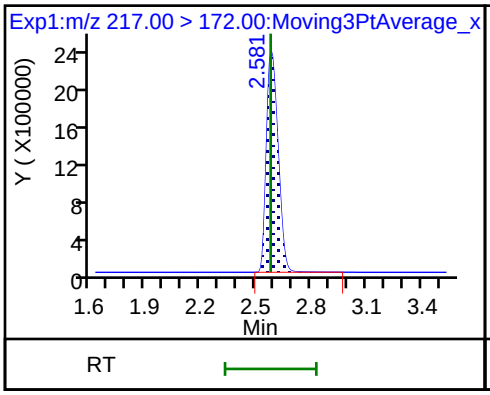
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 5 Worklist Smp#: 6

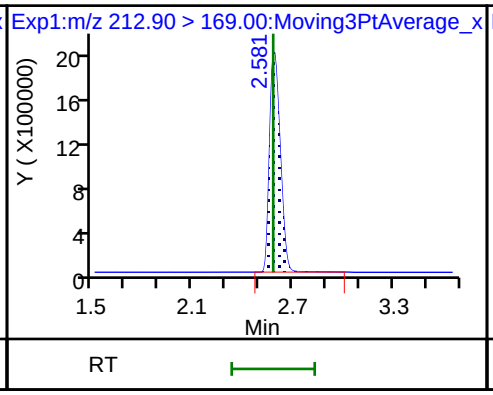
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

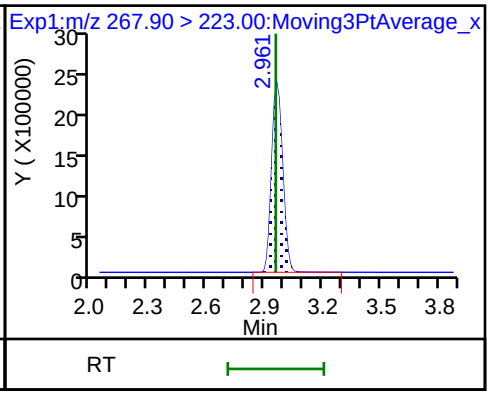
D 1 13C4 PFBA



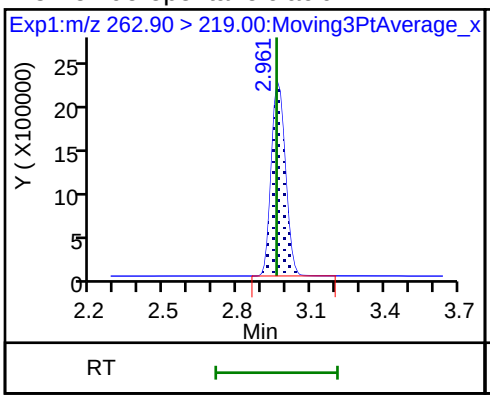
2 Perfluorobutanoic acid



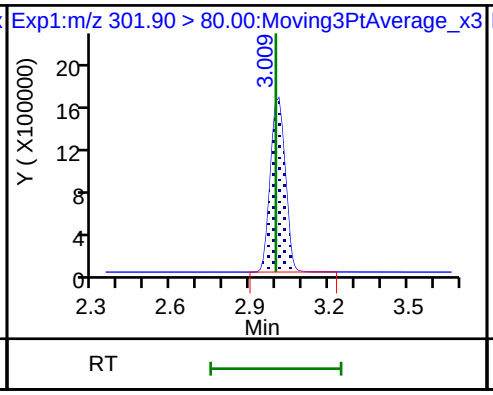
D 4 13C5 PFPeA



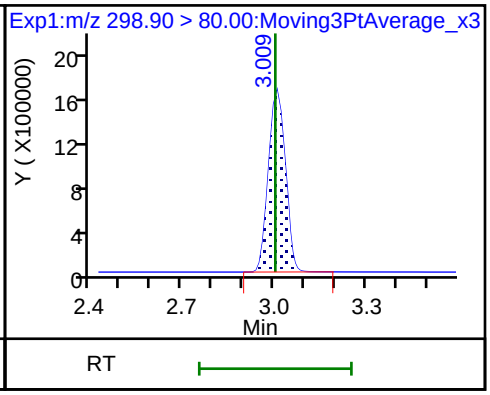
5 Perfluoropentanoic acid



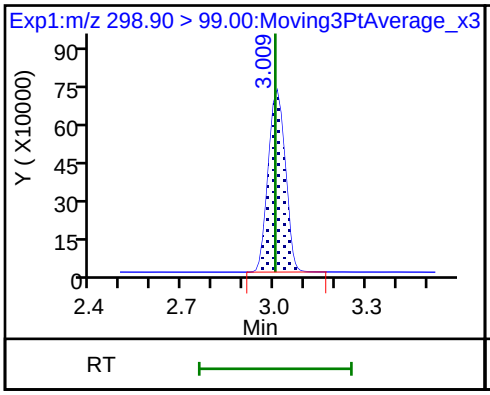
D 9 13C3 PFBS



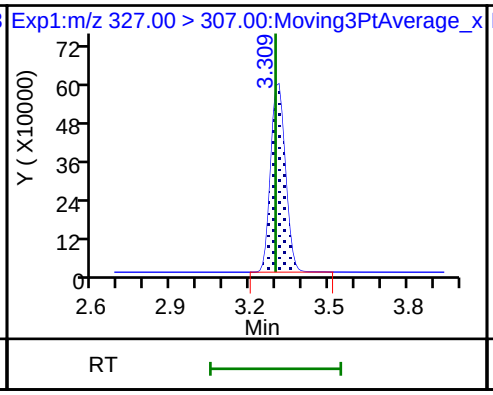
6 Perfluorobutanesulfonic acid



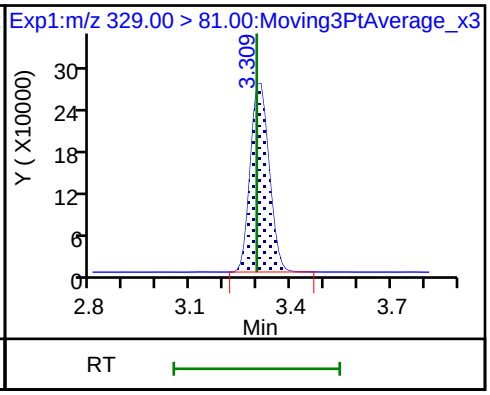
6 Perfluorobutanesulfonic acid



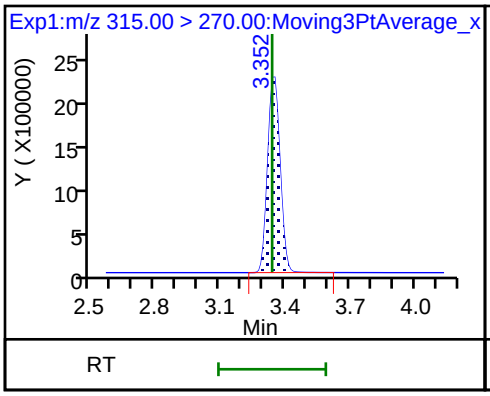
8 4:2 FTS



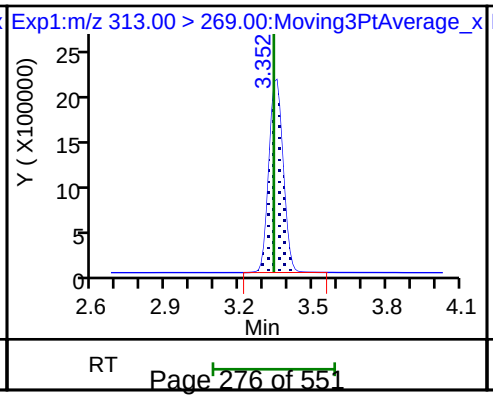
D 7 M2-4:2 FTS



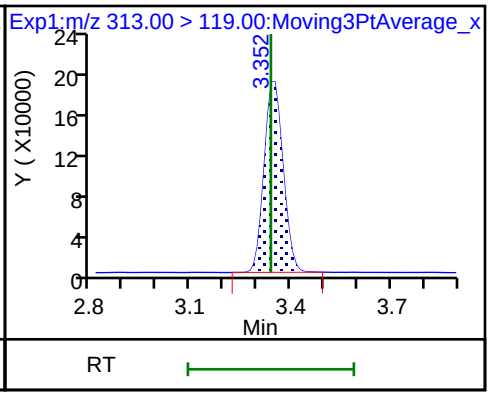
D 11 13C2 PFHxA



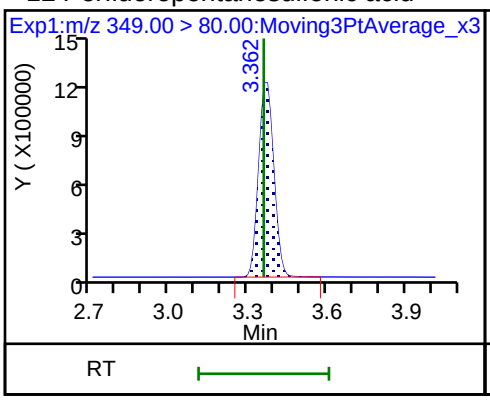
10 Perfluorohexanoic acid



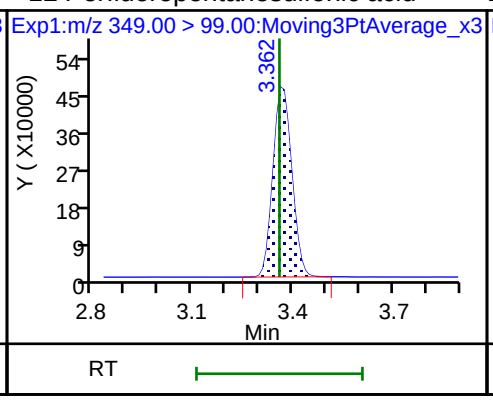
10 Perfluorohexanoic acid



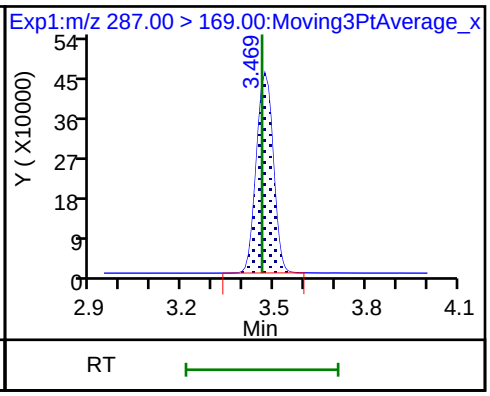
12 Perfluoropentanesulfonic acid



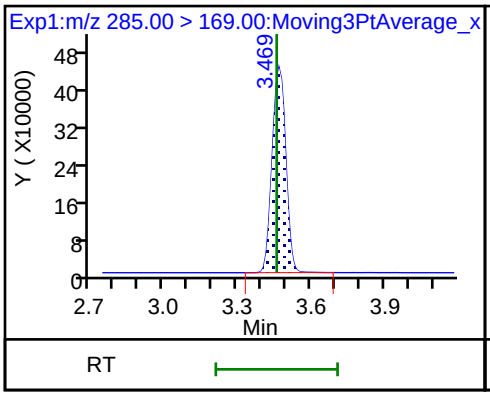
12 Perfluoropentanesulfonic acid



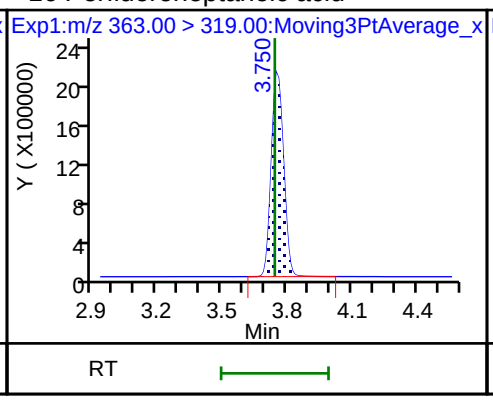
D 14 13C3 HFPO-DA



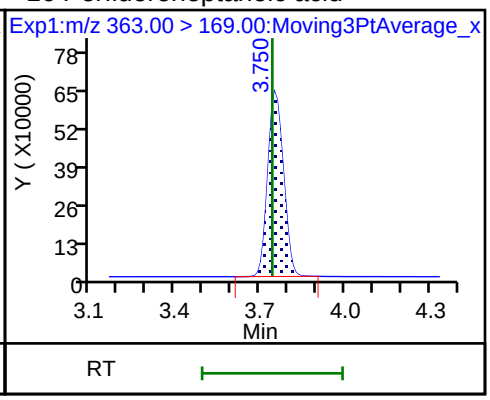
13 HPFO-DA



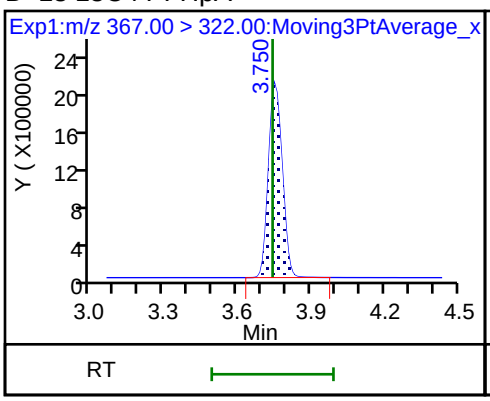
16 Perfluoroheptanoic acid



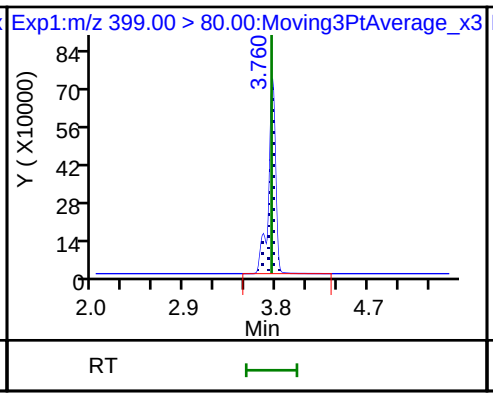
16 Perfluoroheptanoic acid



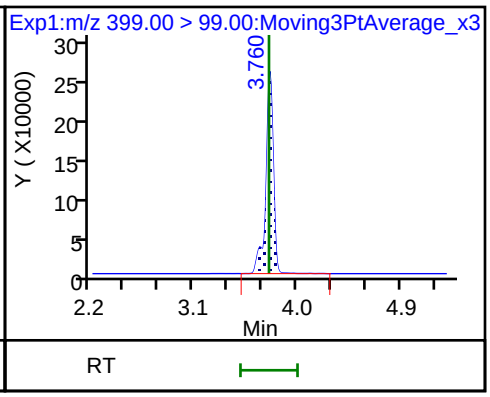
D 18 13C4 PFHpA



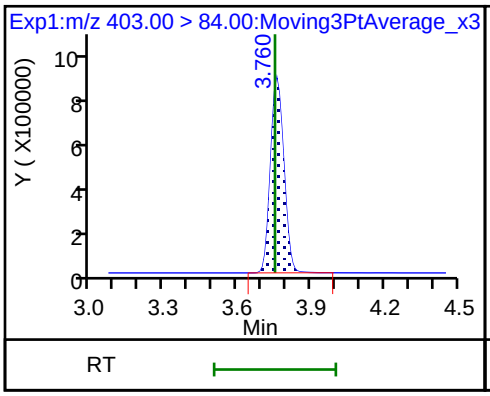
15 Perfluorohexanesulfonic acid



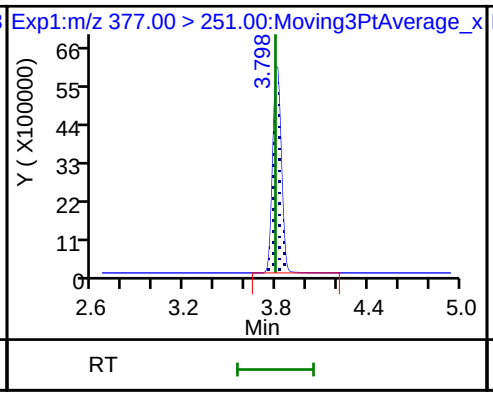
15 Perfluorohexanesulfonic acid



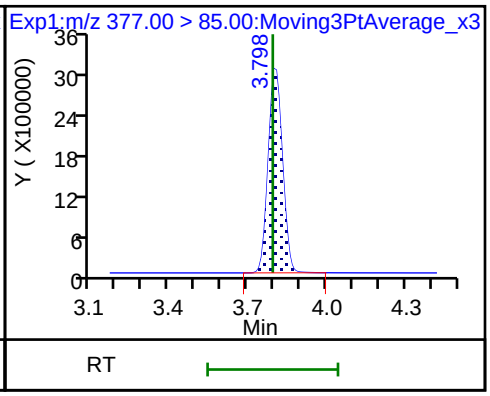
D 17 18O2 PFHxS



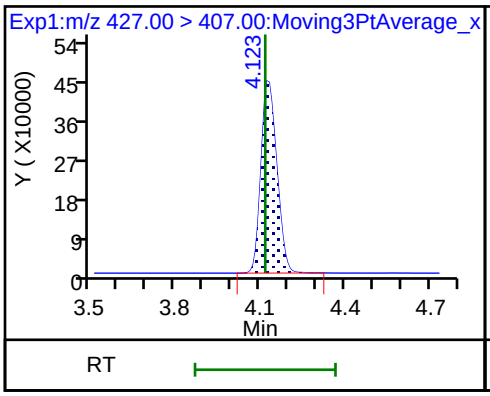
19 DONA



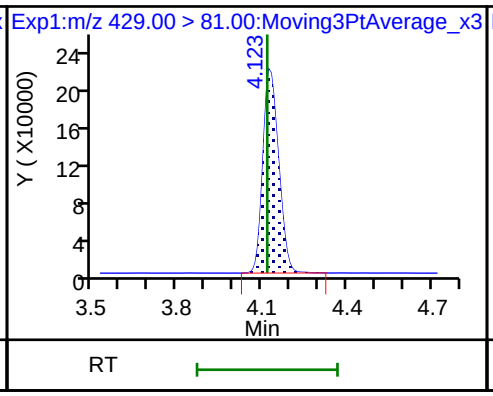
19 DONA



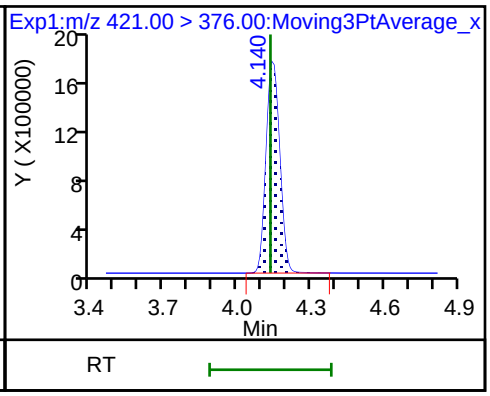
21 6:2 FTS



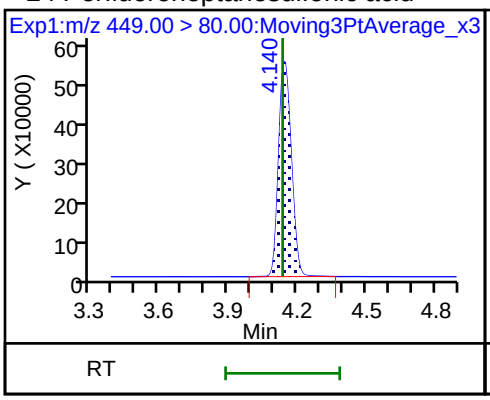
D 20 M2-6:2 FTS



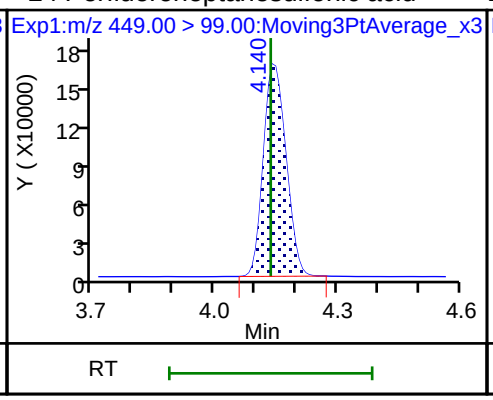
$ 26 13C8 PFOA



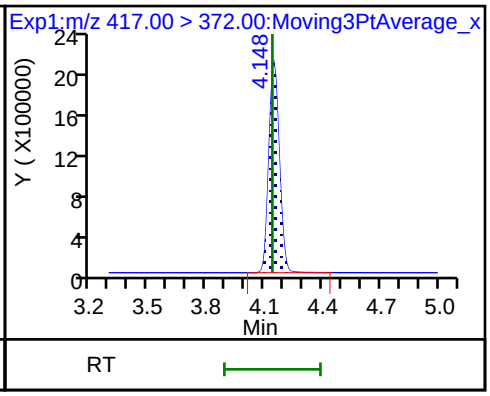
24 Perfluoroheptanesulfonic acid



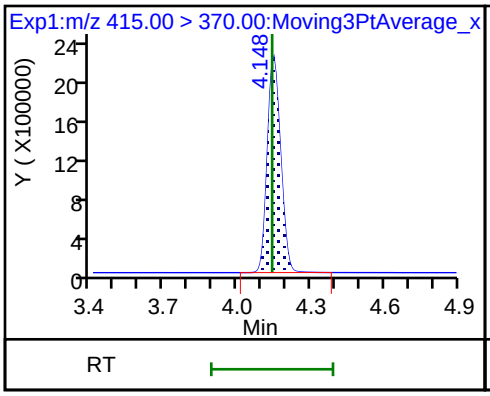
24 Perfluoroheptanesulfonic acid



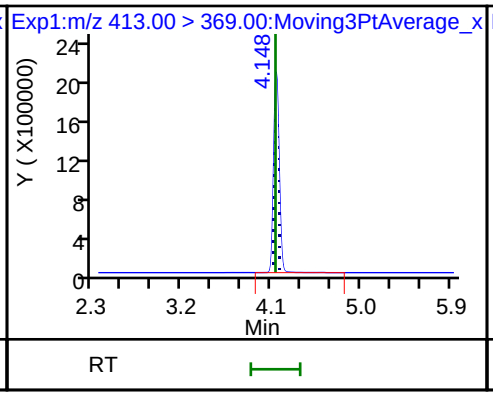
D 25 13C4 PFOA



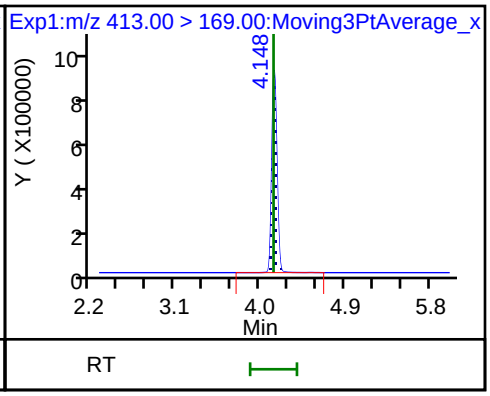
* 23 13C2 PFOA



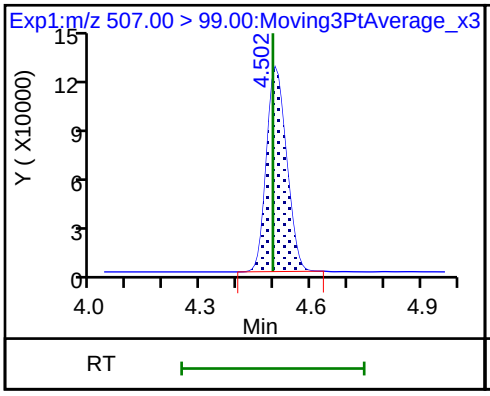
22 Perfluorooctanoic acid



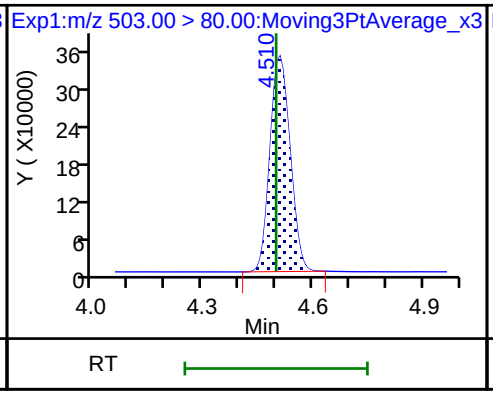
22 Perfluorooctanoic acid



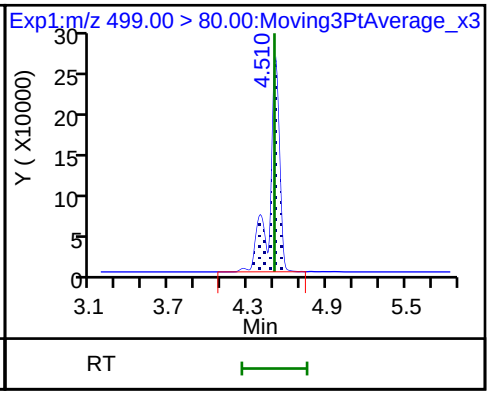
$ 28 13C8 PFOS



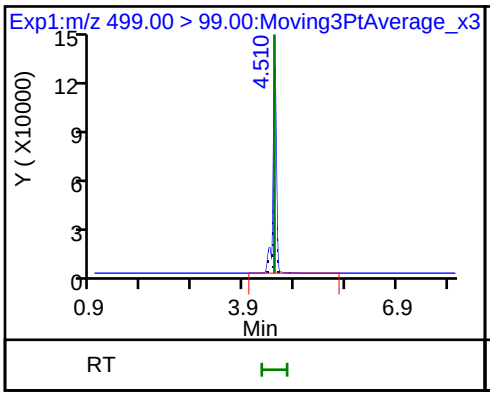
D 27 13C4 PFOS



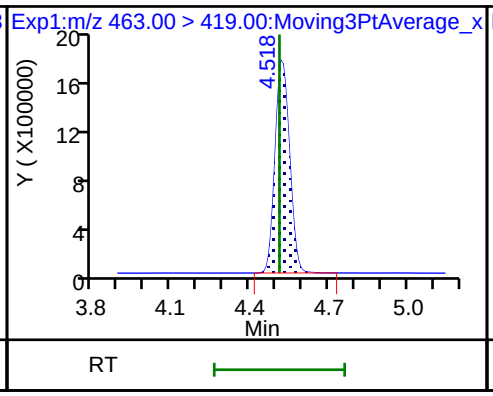
29 Perfluorooctanesulfonic acid



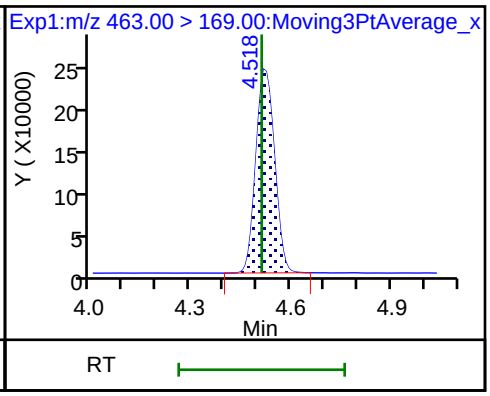
29 Perfluorooctanesulfonic acid



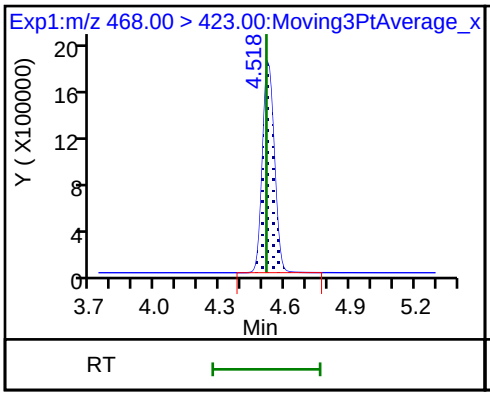
31 Perfluorononanoic acid



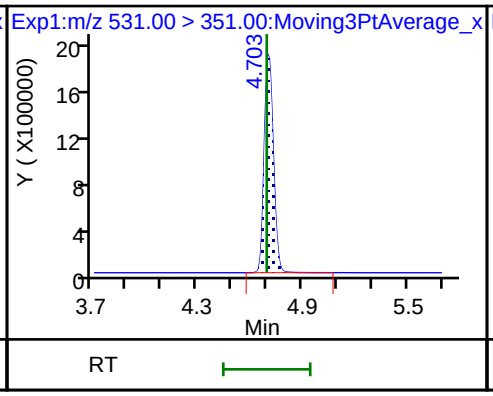
31 Perfluorononanoic acid



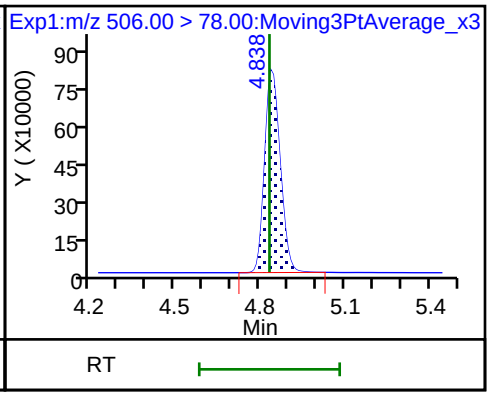
D 30 13C5 PFNA



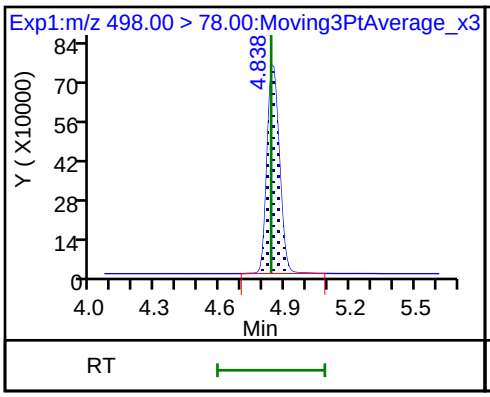
32 9ClFOS



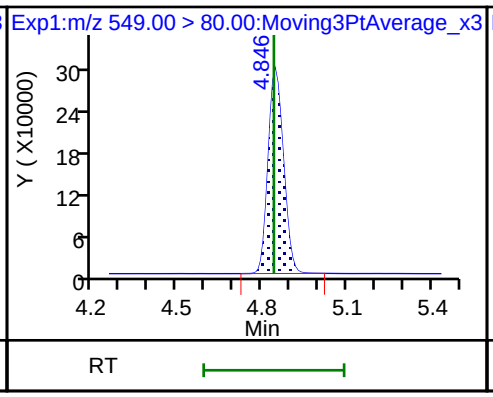
D 33 13C8 FOSA



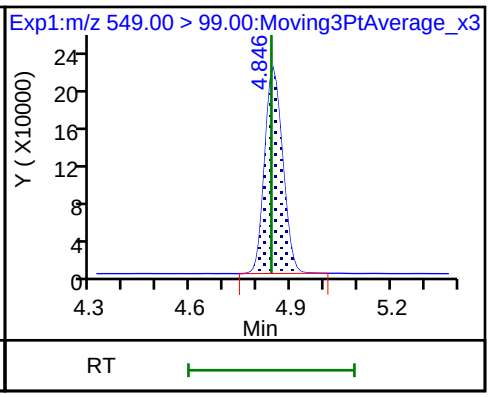
34 Perfluorooctanesulfonamide



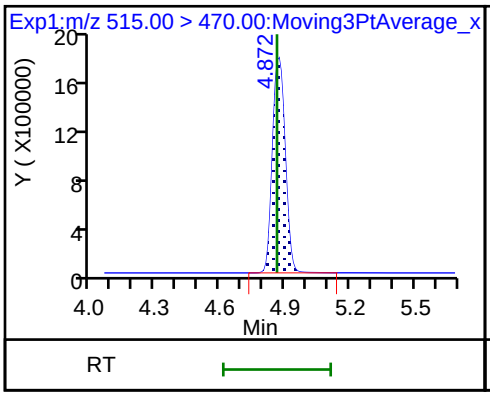
35 Perfluorononanesulfonic acid



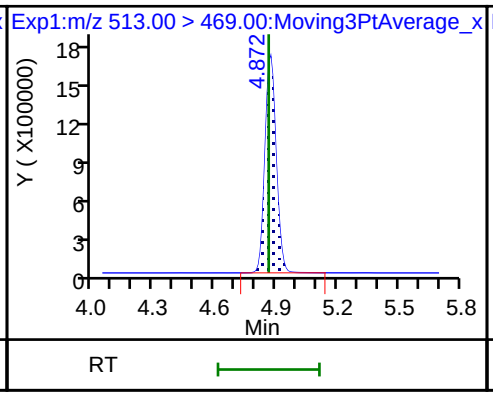
35 Perfluorononanesulfonic acid



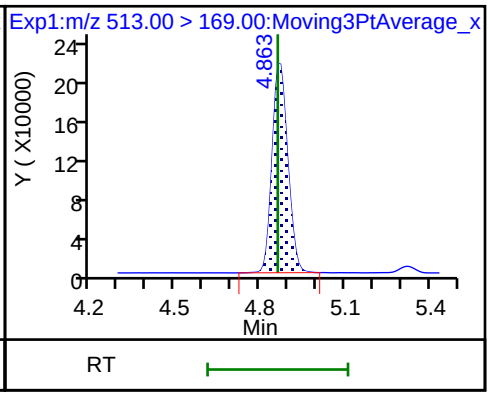
D 39 13C2 PFDA



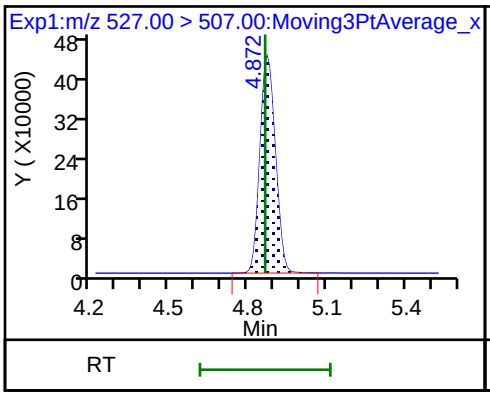
37 Perfluorodecanoic acid



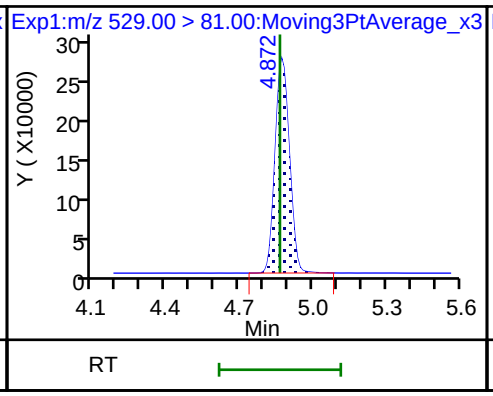
37 Perfluorodecanoic acid



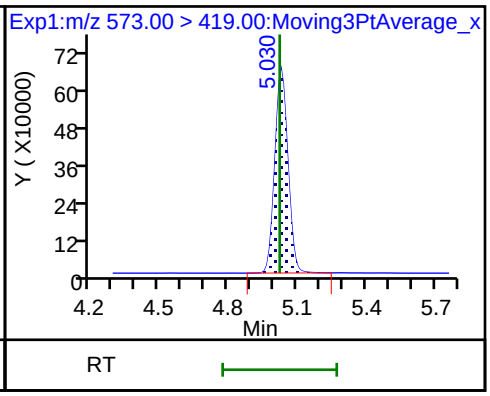
36 8:2 FTS



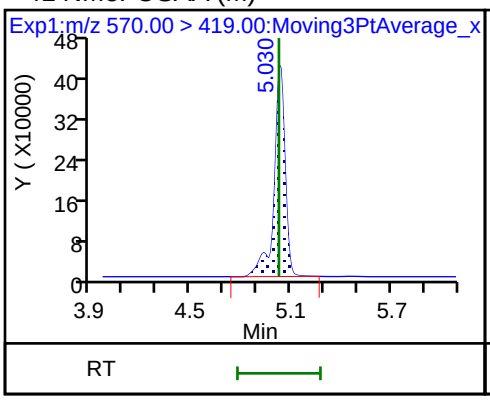
D 38 M2-8:2 FTS



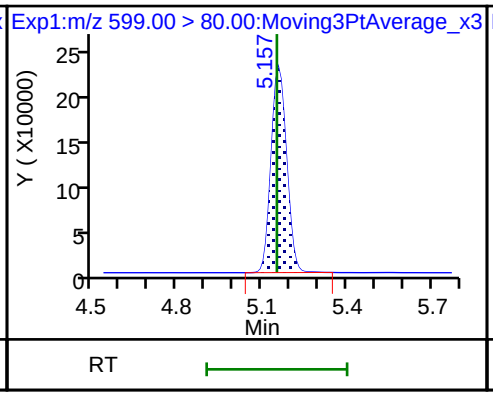
D 40 d3-NMeFOSAA



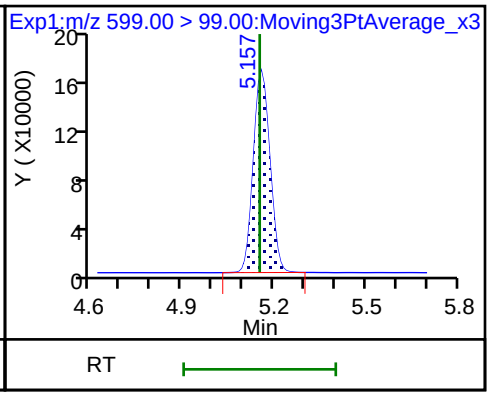
41 NMeFOSAA (M)



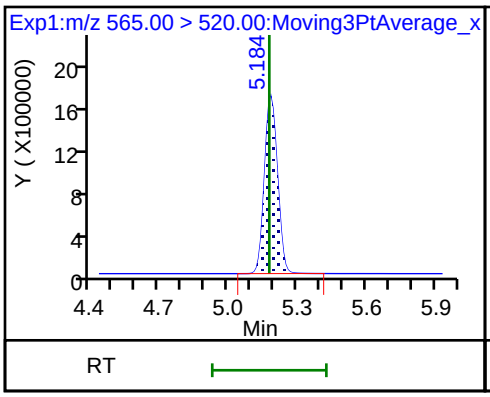
42 Perfluorodecanesulfonic acid



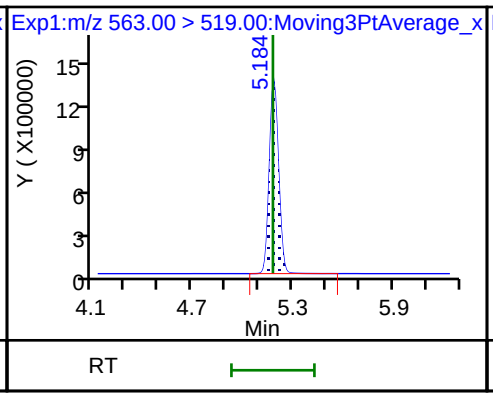
42 Perfluorodecanesulfonic acid



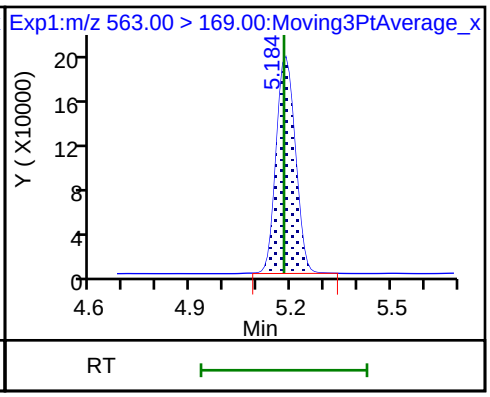
D 43 13C2 PFUnA



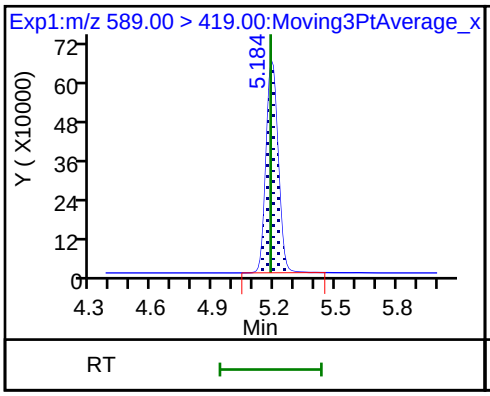
45 Perfluoroundecanoic acid



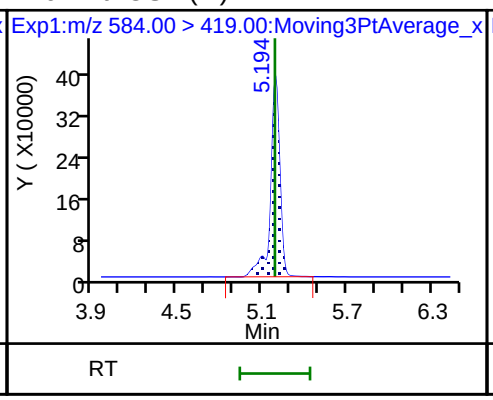
45 Perfluoroundecanoic acid



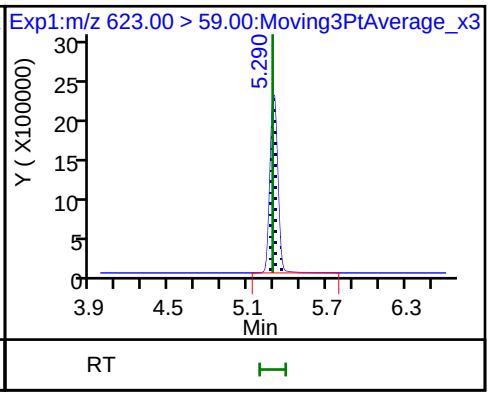
D 44 d5-NEtFOSAA



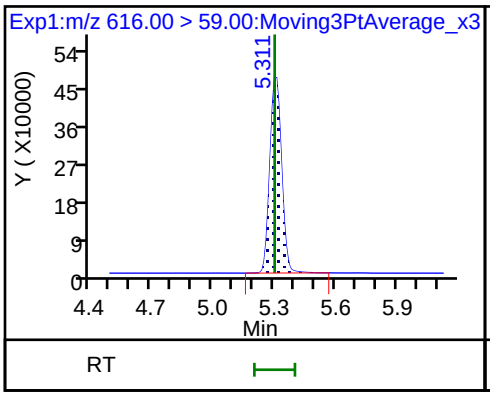
46 NEtFOSA (M)



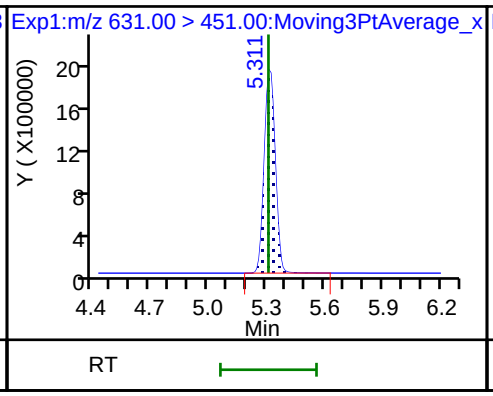
D 47 d7-N-MeFOSE-M



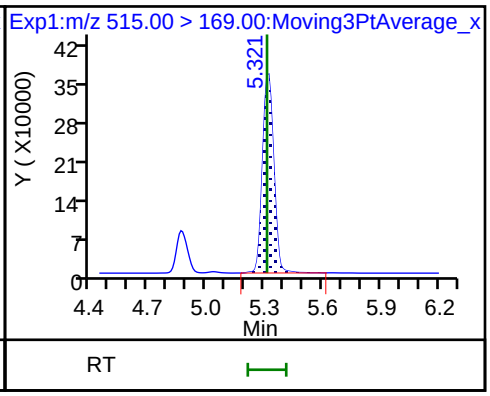
48 N-MeFOSE-M



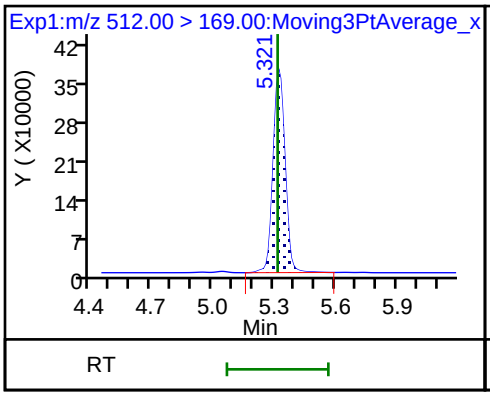
51 11ClFOS



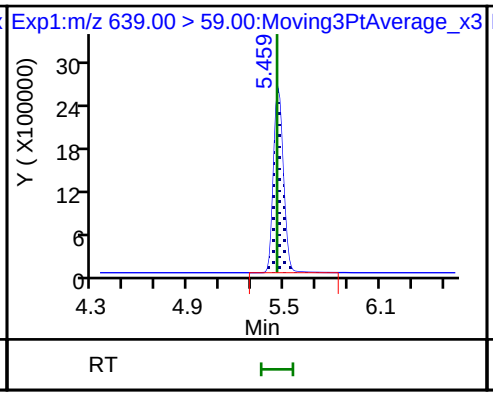
D 49 d-N-MeFOSA-M



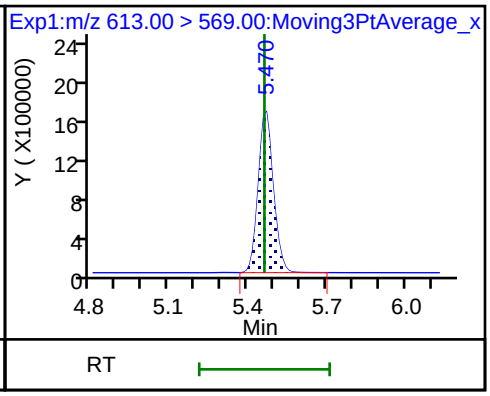
50 NMeFOSA



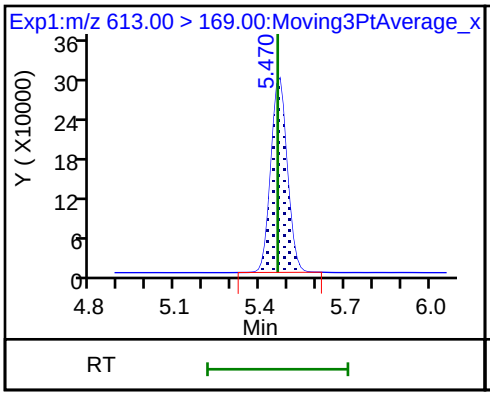
D 52 d9-N-EtFOSE-M



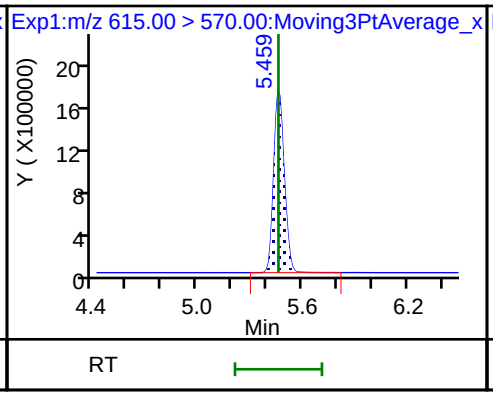
57 Perfluorododecanoic acid



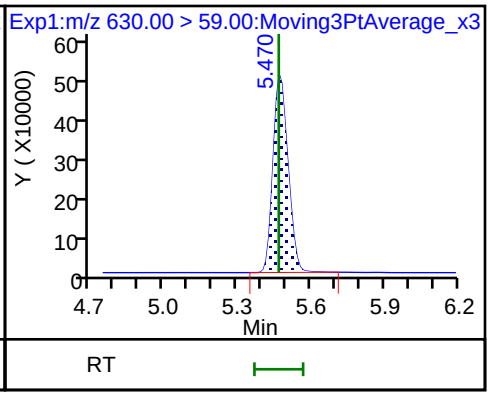
57 Perfluorododecanoic acid



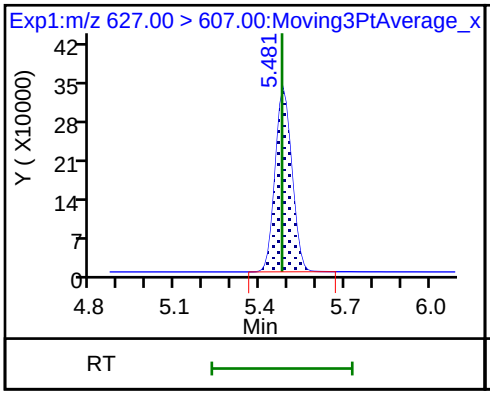
D 56 13C2 PFDoA



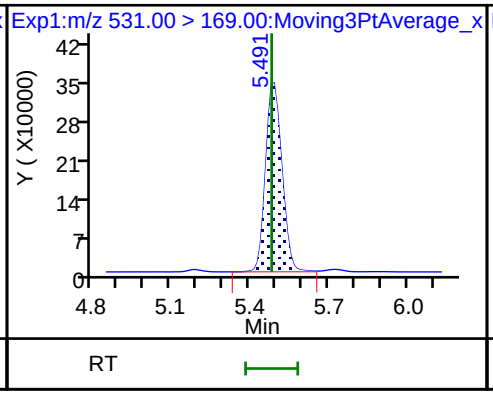
53 N-EtFOSE-M



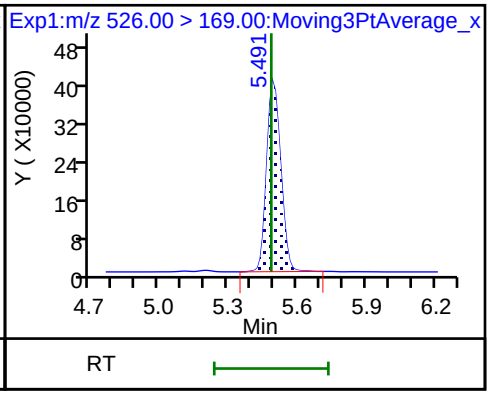
58 10:2 FTS



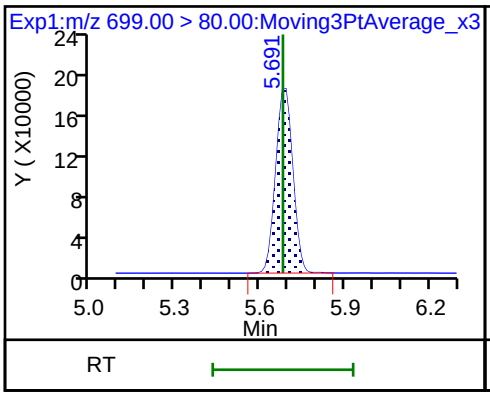
D 54 d-N-EtFOSA-M



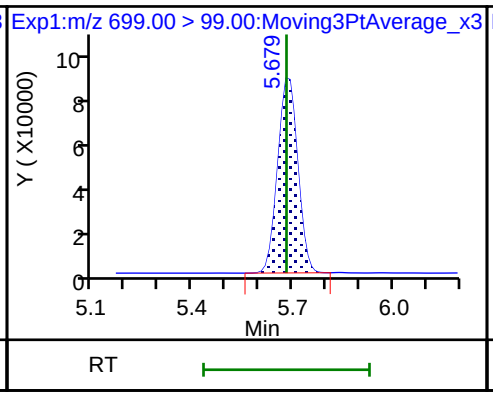
55 N-EtFOSA-M



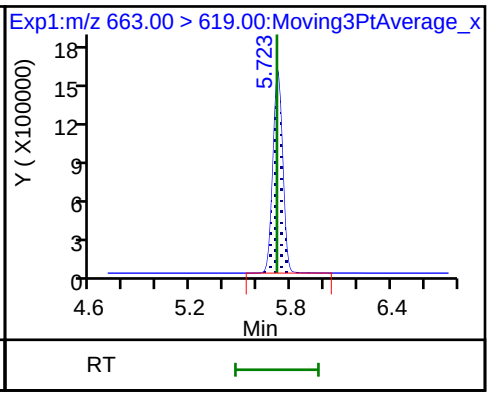
59 PFDoS



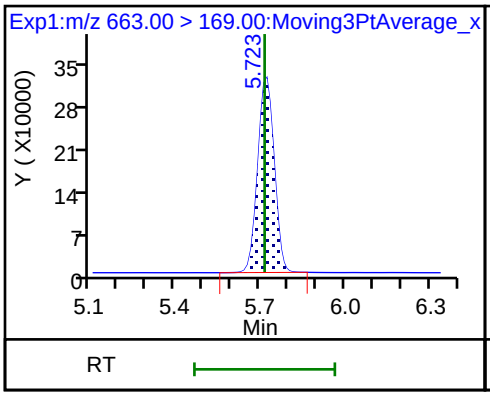
59 PFDoS



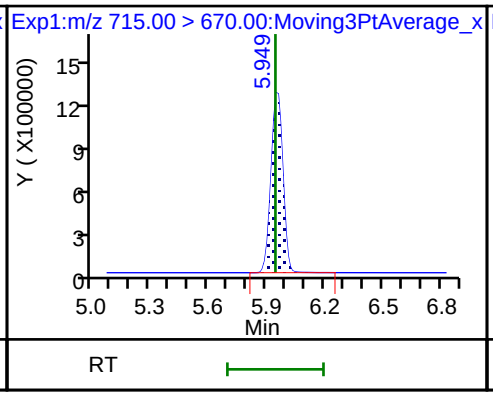
60 Perfluorotridecanoic acid



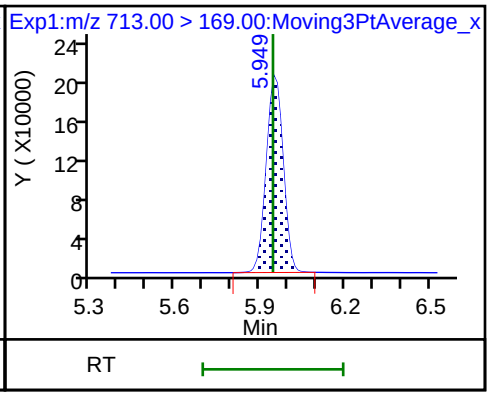
60 Perfluorotridecanoic acid



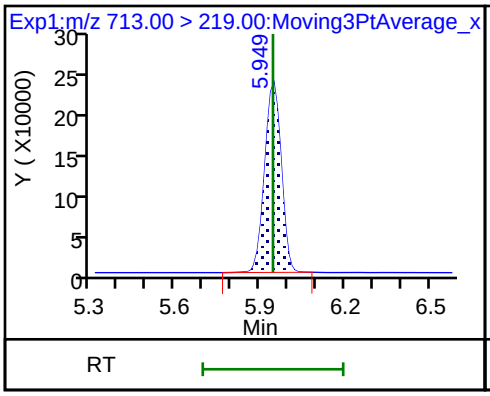
D 61 13C2 PFTeDA



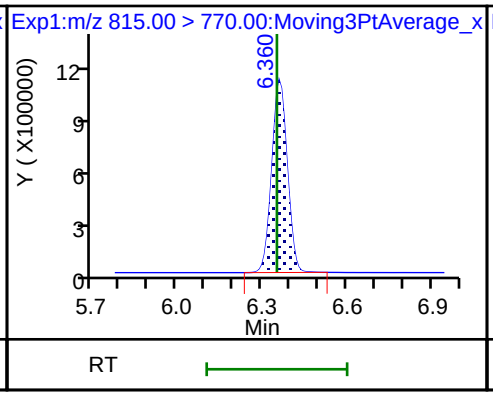
62 Perfluorotetradecanoic acid



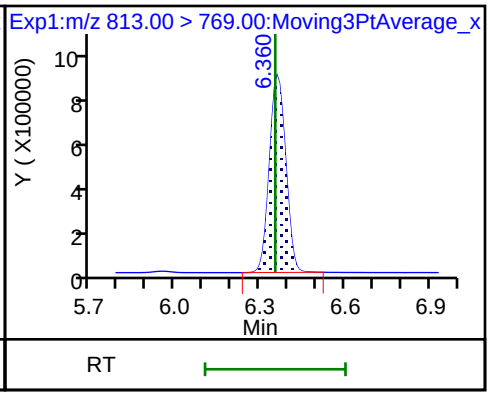
62 Perfluorotetradecanoic acid



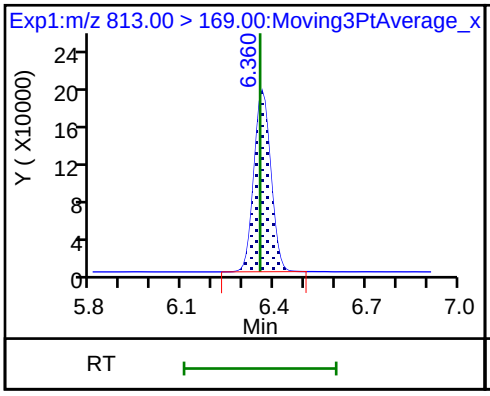
D 64 13C2 PFHxDA



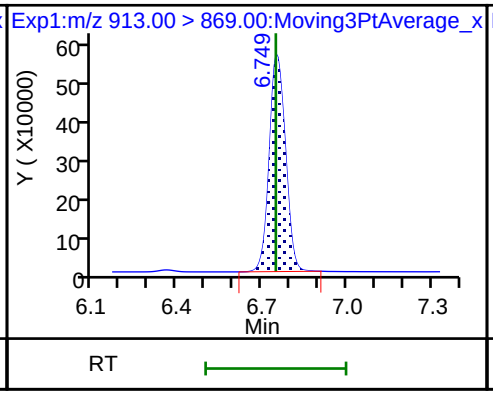
63 Perfluorohexadecanoic acid



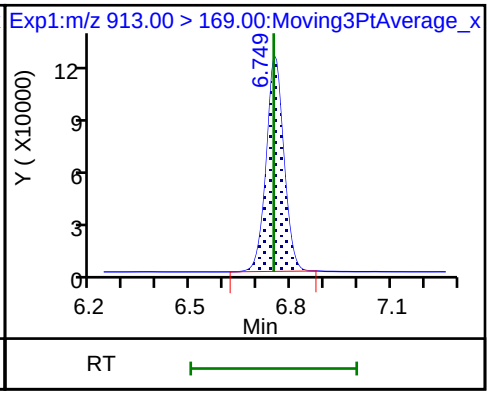
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

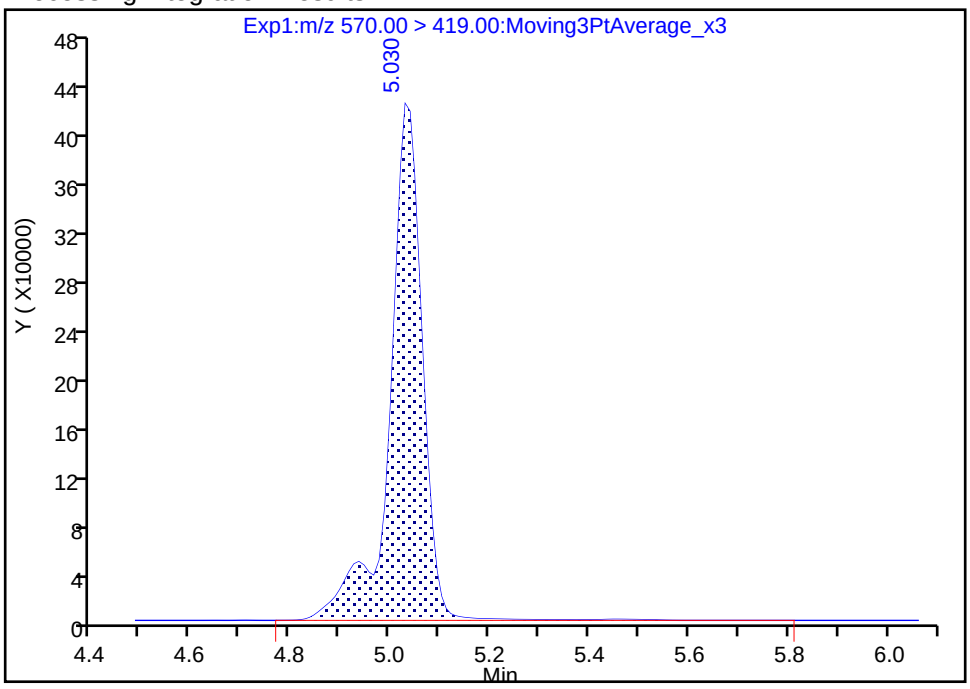
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0012.d				
Injection Date:	03-Jun-2020 21:25:28	Instrument ID:	A18		
Lims ID:	IC STD 5				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	5	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 NMeFOSAA, CAS: 2355-31-9

Signal: 1

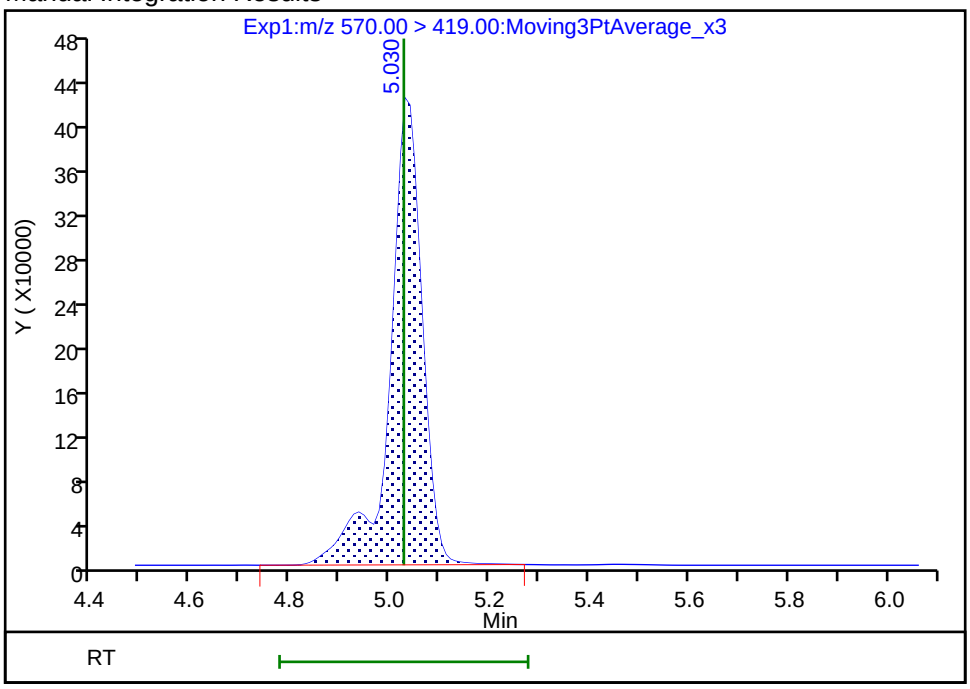
Processing Integration Results

RT: 5.03
Area: 1918821
Amount: 2.583982
Amount Units: ng/ml



Manual Integration Results

RT: 5.03
Area: 1899727
Amount: 2.567743
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 06:01:18

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

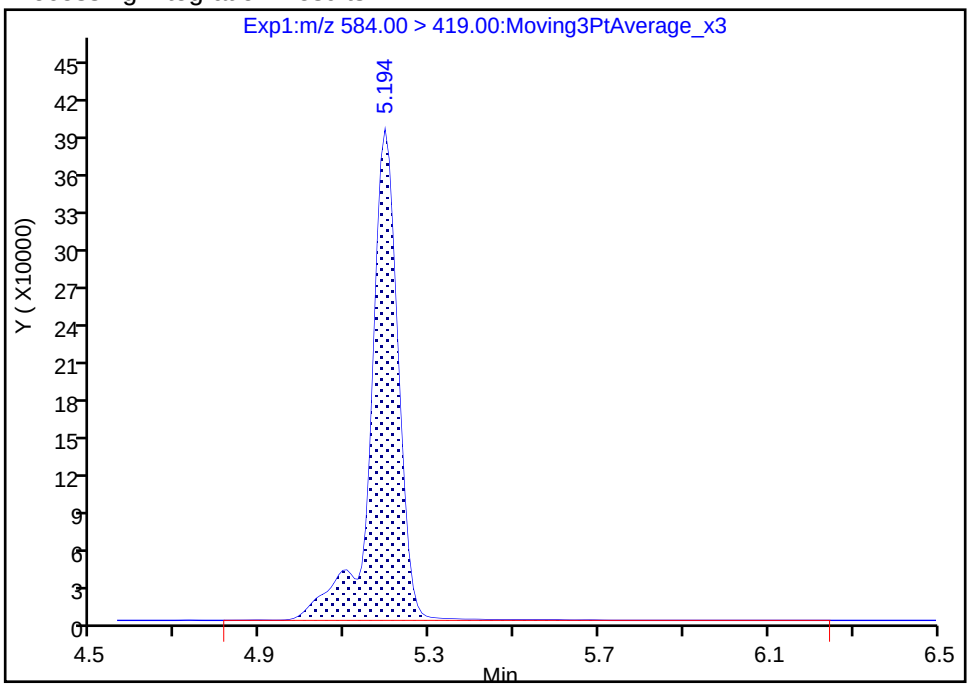
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0012.d				
Injection Date:	03-Jun-2020 21:25:28	Instrument ID:	A18		
Lims ID:	IC STD 5				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	5	Worklist Smp#:	6
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

46 NEtFOSA, CAS: 2991-50-6

Signal: 1

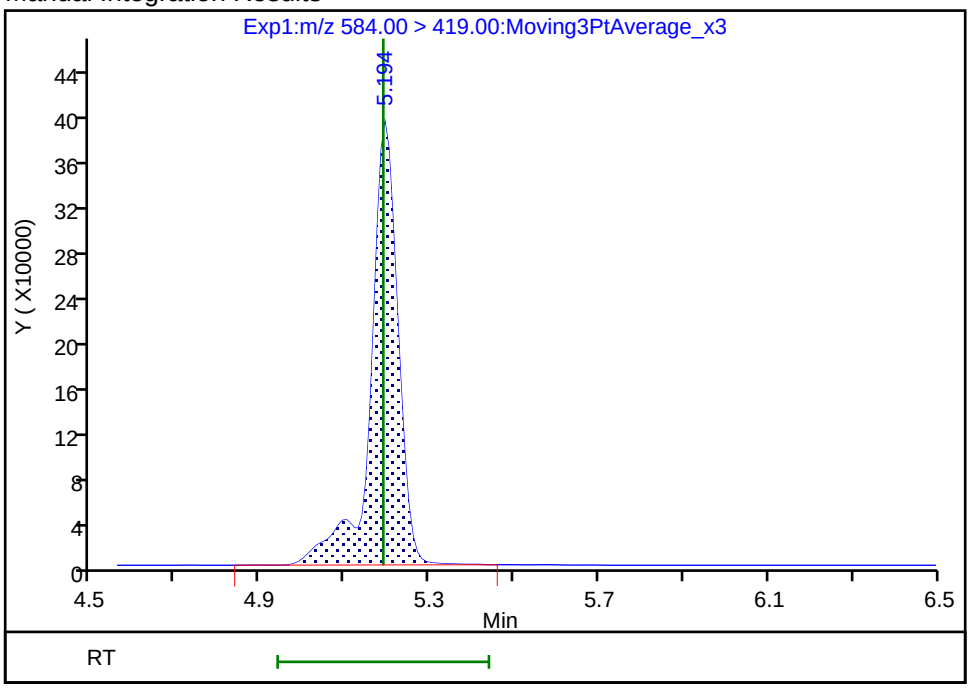
Processing Integration Results

RT: 5.19
Area: 1785475
Amount: 2.366070
Amount Units: ng/ml



Manual Integration Results

RT: 5.19
Area: 1771375
Amount: 2.355971
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 06:01:24
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0013.d
Lims ID: IC STD 6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 03-Jun-2020 21:34:33 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: IC STD 6 (025)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 04-Jun-2020 10:32:54 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1046

First Level Reviewer: duranl Date: 04-Jun-2020 06:02:48
Ratio Calibration: Average of Initial Calibration

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	2.582	2.579	0.003	0.623	10376444	2.57		103	7528	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.582	2.581	0.001	1.000	18727176	5.30		106	4693	
D 4 13C5 PFPeA										
267.90 > 223.00	2.962	2.957	0.005	0.715	9194627	2.54		102	5699	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.962	2.959	0.003	1.000	17463850	4.93		98.6	4418	
D 9 13C3 PFBS										
301.90 > 80.00	2.998	2.998	0.0	0.724	6554112	2.31		99.5	5915	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	3.009	3.003	0.006	1.004	12518442	4.55	Target=2.25	103	7200	
298.90 > 99.00	3.009	3.003	0.006	1.004	5532209		2.26(1.13-3.38)	103	2584	
8 4:2 FTS										
327.00 > 307.00	3.301	3.297	0.004	1.000	4772855	5.22		112	6719	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.301	3.297	0.004	0.797	1019153	2.21		94.8	1278	
D 11 13C2 PFHxA										
315.00 > 270.00	3.343	3.339	0.004	0.807	8936428	2.48		99.1	4370	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.343	3.339	0.004	1.000	16894492	5.08	Target=11.49	102	3834	
313.00 > 119.00	3.343	3.339	0.004	1.000	1456982		11.60(5.74-17.23)	102	1489	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.365	3.359	0.006	1.123	9894310	4.90	Target=2.74	104	4883	
349.00 > 99.00	3.365	3.359	0.006	1.123	3655058		2.71(1.37-4.12)	104	2661	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.460	3.459	0.001	0.836	1887673	2.68		107	5181	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.460	3.459	0.001	1.000	3590021	5.03		101	4229	
D 18 13C4 PFHpA										
367.00 > 322.00	3.742	3.743	0.0	0.904	7803830	2.44		97.5	6606	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.742	3.743	0.0	1.000	15591324	5.07	Target=3.25	101	4102	
363.00 > 169.00	3.751	3.743	0.009	1.003	4870227		3.20(1.62-4.87)	101	3456	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.751	3.752	-0.001	1.000	6594631	4.34	Target=2.90	95.5	3490	M
399.00 > 99.00	3.751	3.752	-0.001	1.000	2225888		2.96(1.45-4.35)	95.5	1971	M
D 17 18O2 PFHxS										
403.00 > 84.00	3.751	3.752	-0.001	0.906	3118573	2.31		97.6	3464	
19 DONA										
377.00 > 251.00	3.799	3.794	0.005	0.844	45673831	5.17	Target=2.01	110	27414	
377.00 > 85.00	3.799	3.794	0.005	0.844	22789801		2.00(1.00-3.01)	110	13042	
21 6:2 FTS										
427.00 > 407.00	4.117	4.117	0.0	1.000	3339948	4.87		103	4200	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.117	4.117	0.0	0.994	813584	2.19		92.3	2272	
$ 26 13C8 PFOA										
421.00 > 376.00	4.133	4.134	-0.001	0.998	6306791	2.38		97.4	5887	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.141	4.136	0.005	0.920	4217515	5.01	Target=3.25	105	3520	
449.00 > 99.00	4.141	4.136	0.005	0.920	1274740		3.31(1.63-4.88)	105	2300	
D 25 13C4 PFOA										
417.00 > 372.00	4.141	4.139	0.002	1.000	8016467	2.50		100.0	5140	
* 23 13C2 PFOA										
415.00 > 370.00	4.141	4.141	0.0		8096044	2.50			5448	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.141	4.141	0.0	1.000	15053618	4.64	Target=2.35	92.7	3188	M
413.00 > 169.00	4.141	4.141	0.0	1.000	6362896		2.37(1.18-3.53)	92.7	16006	
$ 28 13C8 PFOS										
507.00 > 99.00	4.494	4.496	-0.002	1.085	445285	2.25		94.0	2862	
D 27 13C4 PFOS										
503.00 > 80.00	4.502	4.499	0.003	1.087	1328196	2.32		96.9	2293	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.502	4.500	0.002	1.000	2715602	4.84	Target=2.41	104	1649	M
499.00 > 99.00	4.502	4.500	0.002	1.000	1105455		2.46(1.21-3.62)	104	20395	
31 Perfluorononanoic acid										
463.00 > 419.00	4.510	4.512	-0.002	0.998	13145750	5.17	Target=6.74	103	3344	
463.00 > 169.00	4.517	4.512	0.005	1.000	1936568		6.79(3.37-10.11)	103	3226	
D 30 13C5 PFNA										
468.00 > 423.00	4.517	4.513	0.004	1.091	6606585	2.53		101	7737	
32 9ClFOS										
531.00 > 351.00	4.695	4.694	0.001	1.043	13734790	4.99		107	14452	
D 33 13C8 FOSA										
506.00 > 78.00	4.837	4.832	0.005	1.168	3145739	2.47		98.9	4840	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.837	4.835	0.002	1.000	5942477	5.14		103	6317	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.837	4.841	-0.004	1.075	2121542	4.89	Target=1.37	102	3005	
549.00 > 99.00	4.837	4.841	-0.004	1.075	1571160		1.35(0.69-2.06)	102	3100	
D 39 13C2 PFDA										
515.00 > 470.00	4.863	4.862	0.001	1.174	6807338	2.41		96.5	9569	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.863	4.862	0.001	1.000	12599664	5.17	Target=8.07	103	5696	
513.00 > 169.00	4.863	4.862	0.001	1.000	1603223		7.86(4.04-12.11)	103	286	
36 8:2 FTS										
527.00 > 507.00	4.863	4.864	-0.001	1.000	3351779	5.02		105	7487	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.863	4.864	-0.001	1.174	1040437	2.22		92.6	1946	
D 40 d3-NMeFOSAA										
573.00 > 419.00	5.021	5.023	-0.002	1.212	2639648	2.52		101	2724	
41 NMeFOSAA										M
570.00 > 419.00	5.030	5.027	0.003	1.002	4171737	5.58		112	3295	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.148	5.152	-0.004	1.144	1574232	4.90	Target=1.31	102	3113	
599.00 > 99.00	5.148	5.152	-0.004	1.144	1219732		1.29(0.65-1.96)	102	3877	
D 43 13C2 PFUnA										
565.00 > 520.00	5.175	5.178	-0.003	1.250	6528918	2.47		98.9	6834	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.184	5.179	0.005	1.002	10049138	5.20	Target=6.70	104	6420	
563.00 > 169.00	5.184	5.179	0.005	1.002	1545972		6.50(3.35-10.05)	104	3721	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.184	5.181	0.003	1.252	2515024	2.35		94.0	2555	
46 NEtFOSA										M
584.00 > 419.00	5.193	5.189	0.004	1.002	3954042	5.60		112	2839	M
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.290	5.287	0.003	1.277	9838570	13.0		104	5156	
48 N-MeFOSE-M										
616.00 > 59.00	5.300	5.301	-0.001	1.002	3823966	4.95		98.9	5107	
51 11ClFOS										M
631.00 > 451.00	5.310	5.309	0.001	1.180	15694929	5.20		110	6037	M
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.310	5.311	-0.001	1.282	1601871	2.68		107	39.0	
50 NMeFOSA										
512.00 > 169.00	5.321	5.316	0.005	1.002	3005640	5.08		102	690	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.458	5.454	0.004	1.318	11428157	13.3		106	6134	
D 56 13C2 PFDoA										
615.00 > 570.00	5.458	5.462	-0.004	1.318	7286258	2.61		104	6678	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.458	5.462	-0.004	1.000	12763197	4.70	Target=6.20	94.0	5079	
613.00 > 169.00	5.458	5.462	-0.004	1.000	1988362		6.42(3.10-9.30)	94.0	3827	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
53 N-EtFOSE-M										
630.00 > 59.00	5.469	5.468	0.001	1.002	4594733	5.01		100	4489	
58 10:2 FTS										
627.00 > 607.00	5.480	5.477	0.003	1.127	2739844	5.19		108	3693	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.480	5.482	-0.002	1.323	1657176	2.70		108	296	
55 N-EtFOSA-M										
526.00 > 169.00	5.491	5.486	0.005	1.002	3328513	4.80		96.1	658	
59 PFDoS										
699.00 > 80.00	5.678	5.680	-0.002	1.261	1465609	4.93	Target=2.11	102	3116	
699.00 > 99.00	5.678	5.680	-0.002	1.261	759721		1.93(1.06-3.17)	102	5778	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.712	5.715	-0.003	1.046	12628497	4.96	Target=4.98	99.1	5456	
663.00 > 169.00	5.712	5.715	-0.003	1.046	2486687		5.08(2.49-7.47)	99.1	3131	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.948	5.945	0.003	1.436	5867063	2.51		101	5190	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.948	5.945	0.003	1.000	1476395	4.73	Target=0.96	94.5	2759	
713.00 > 219.00	5.936	5.945	-0.009	0.998	1621216		0.91(0.48-1.43)	94.5	3536	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.350	6.352	-0.002	1.533	4203701	2.54		102	6519	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.350	6.353	-0.003	1.000	7415459	5.03	Target=5.10	101	3310	
813.00 > 169.00	6.350	6.353	-0.003	1.000	1454641		5.10(2.55-7.64)	101	4212	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.749	6.748	0.001	1.063	4733778	5.25	Target=5.50	105	1932	
913.00 > 169.00	6.749	6.748	0.001	1.063	910572		5.20(2.75-8.25)	105	2604	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL6_00025 Amount Added: 1.00 Units: mL

Report Date: 04-Jun-2020 10:32:55 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0013.d

Injection Date: 03-Jun-2020 21:34:33 Instrument ID: A18

Lims ID: IC STD 6

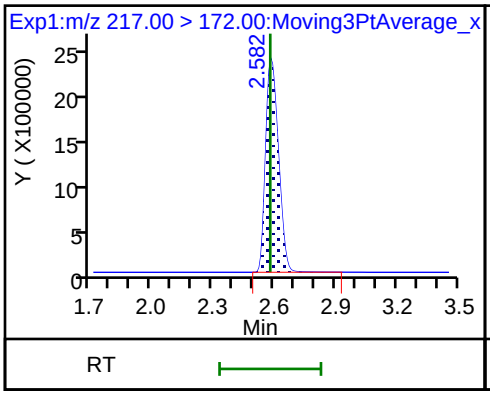
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 6 Worklist Smp#: 7

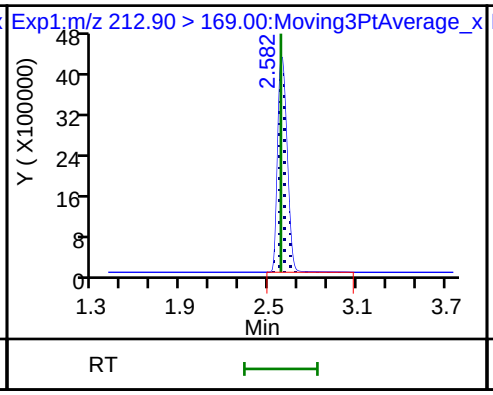
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

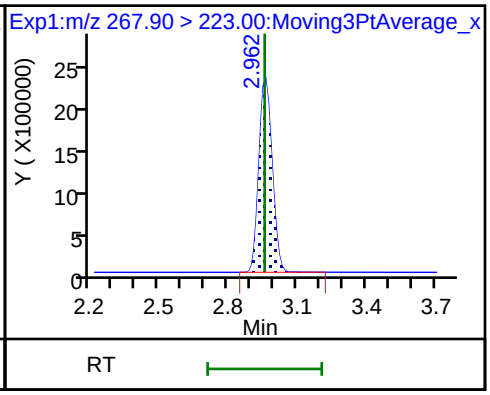
D 1 13C4 PFBA



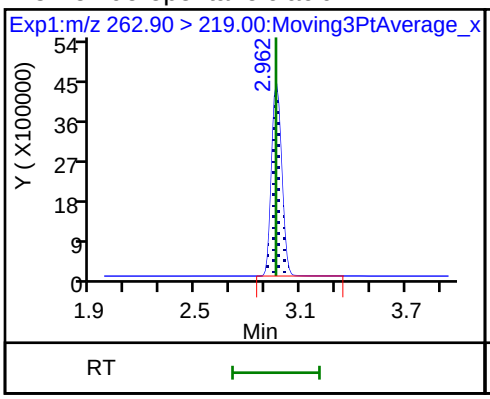
2 Perfluorobutanoic acid



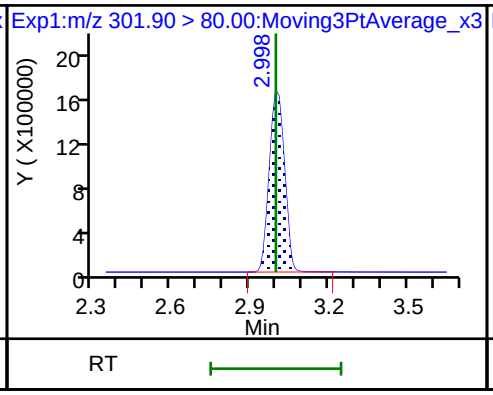
D 4 13C5 PFPeA



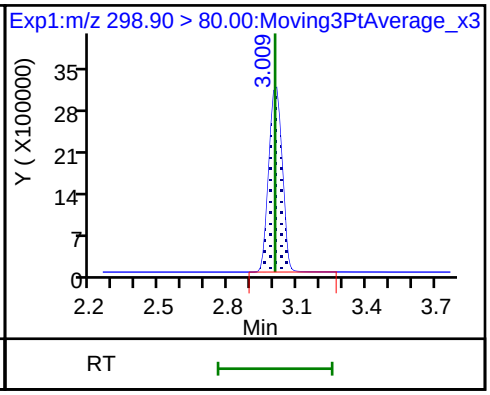
5 Perfluoropentanoic acid



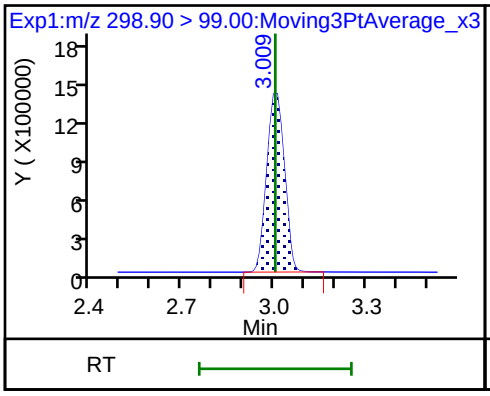
D 9 13C3 PFBS



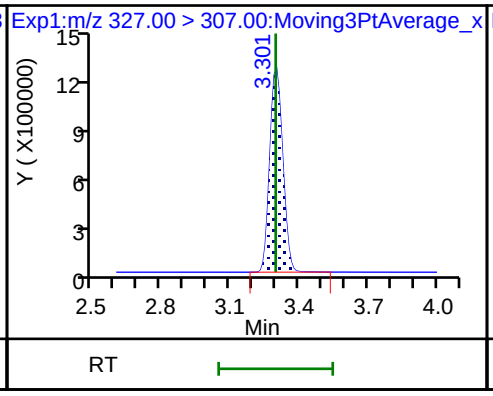
6 Perfluorobutanesulfonic acid



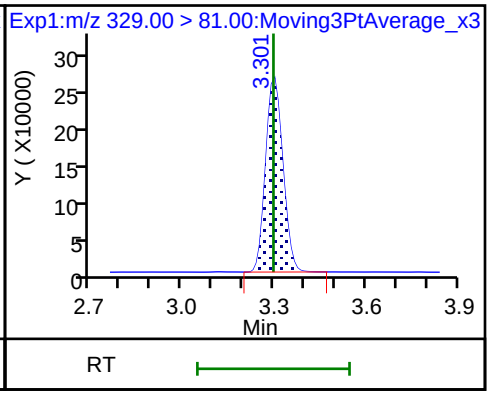
6 Perfluorobutanesulfonic acid



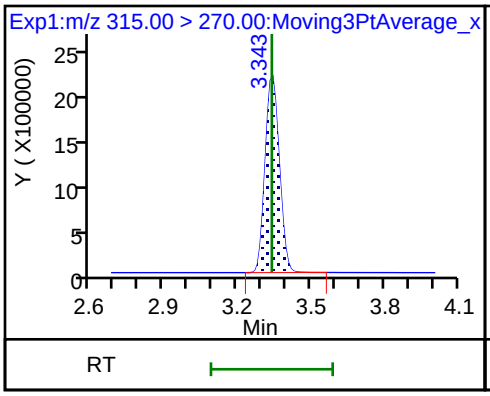
8 4:2 FTS



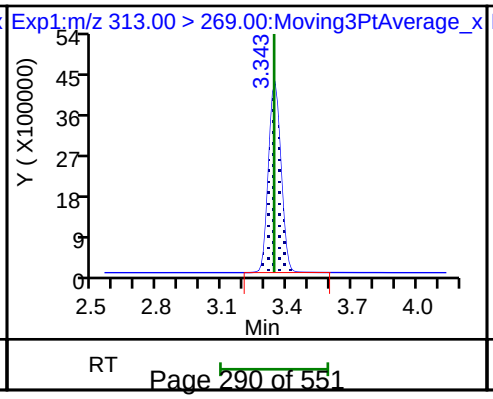
D 7 M2-4:2 FTS



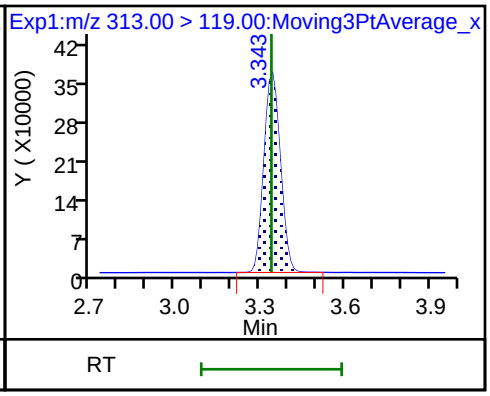
D 11 13C2 PFHxA



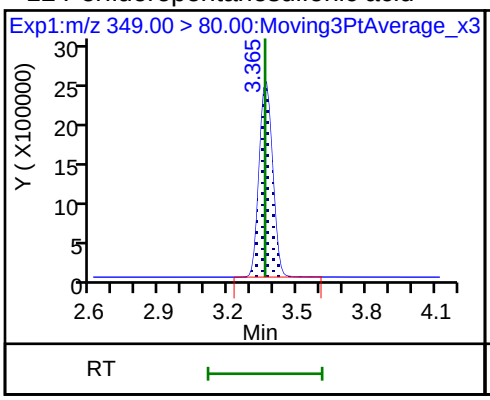
10 Perfluorohexanoic acid



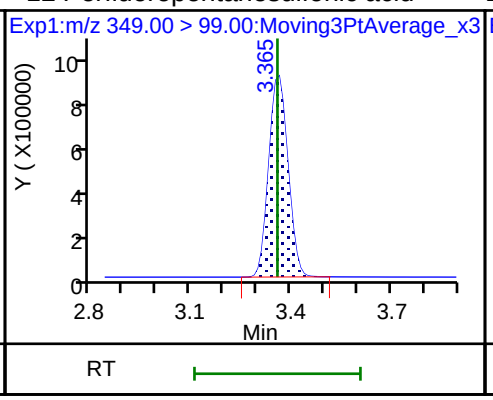
10 Perfluorohexanoic acid



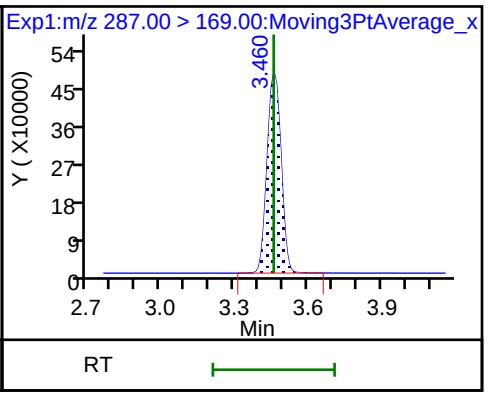
12 Perfluoropentanesulfonic acid



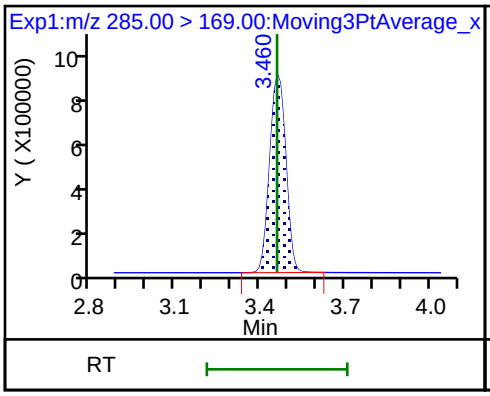
12 Perfluoropentanesulfonic acid



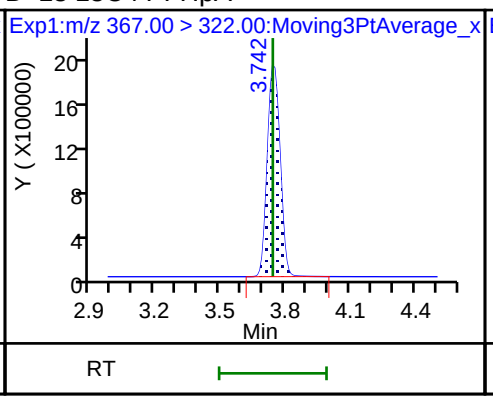
D 14 13C3 HFPO-DA



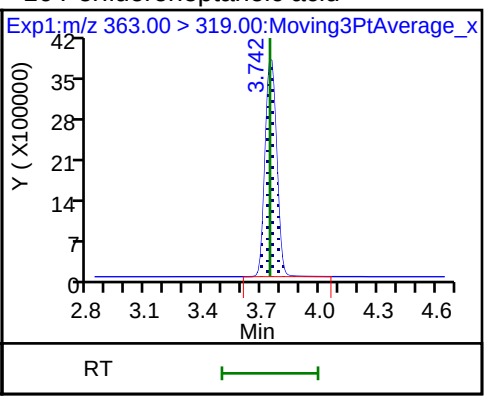
13 HPFO-DA



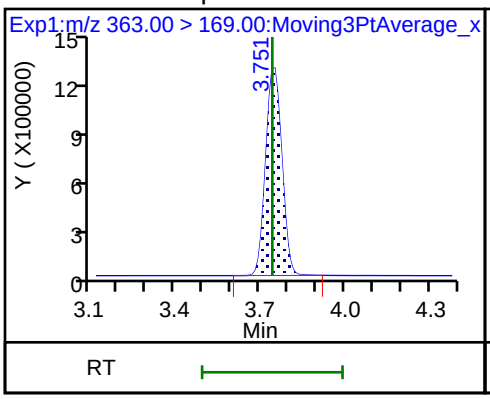
D 18 13C4 PFHpA



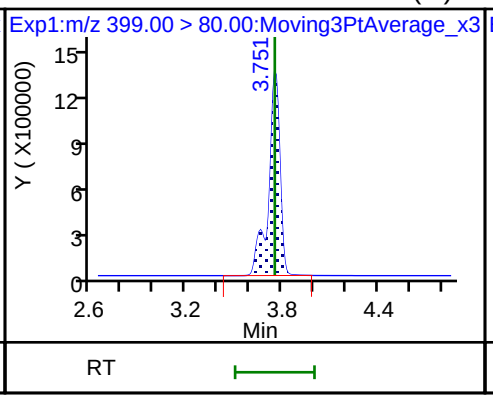
16 Perfluoroheptanoic acid



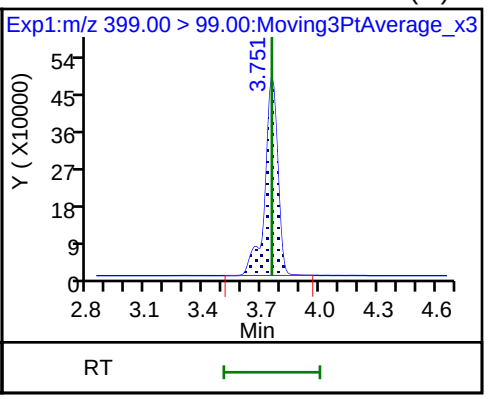
16 Perfluoroheptanoic acid



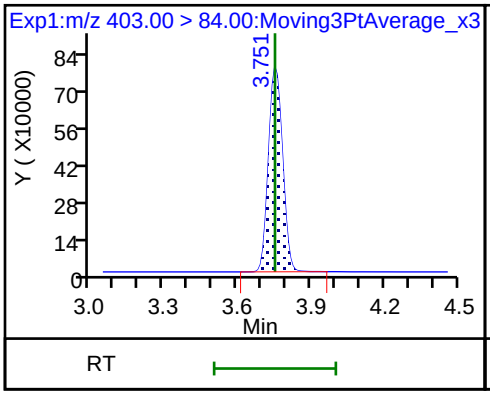
15 Perfluorohexanesulfonic acid (M)



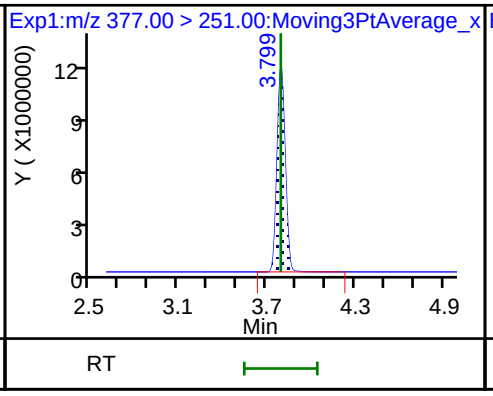
15 Perfluorohexanesulfonic acid (M)



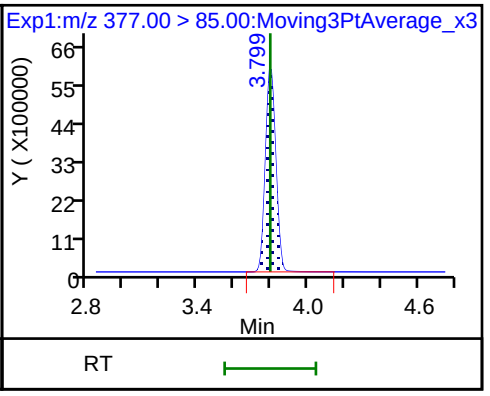
D 17 18O2 PFHxS



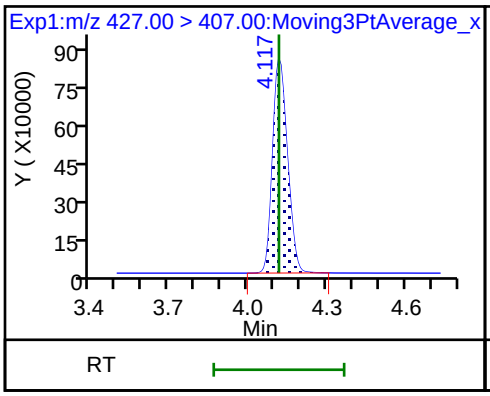
19 DONA



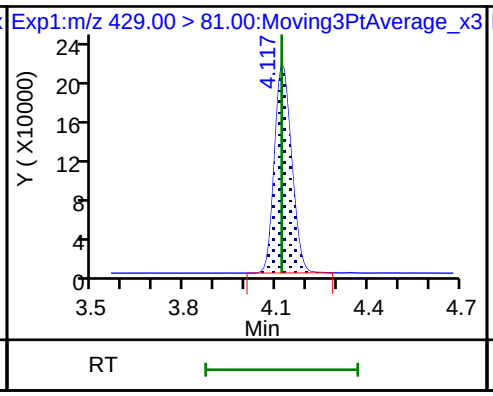
19 DONA



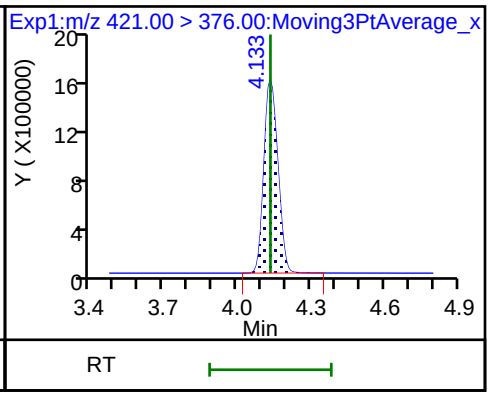
21 6:2 FTS



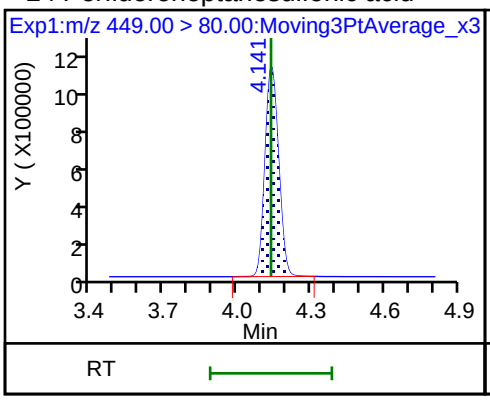
D 20 M2-6:2 FTS



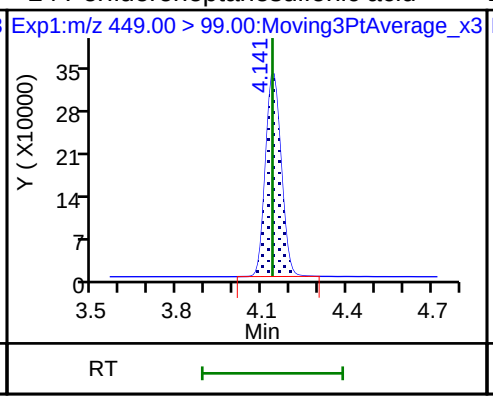
$ 26 13C8 PFOA



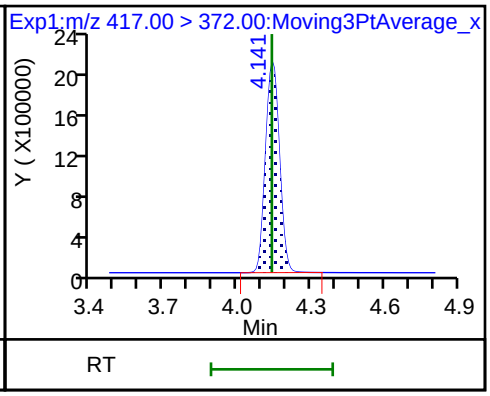
24 Perfluoroheptanesulfonic acid



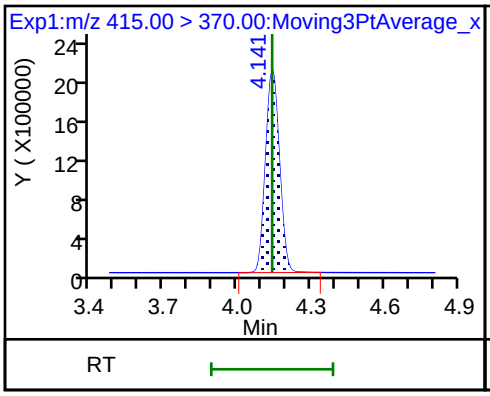
24 Perfluoroheptanesulfonic acid



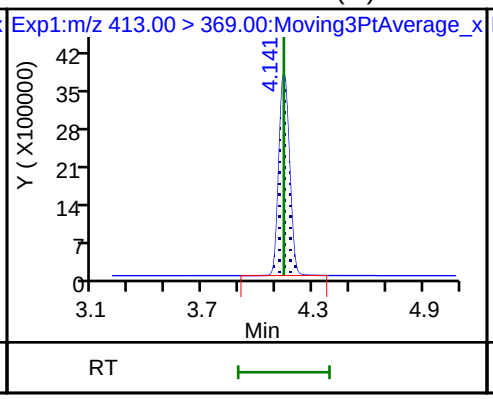
D 25 13C4 PFOA



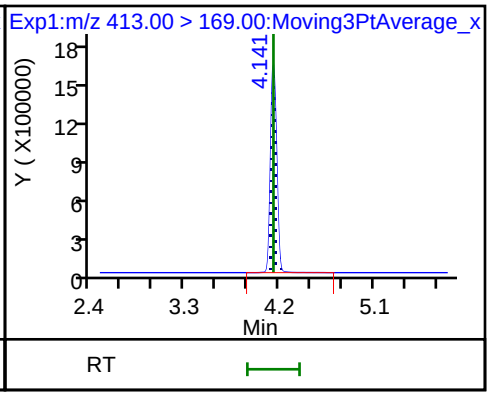
* 23 13C2 PFOA



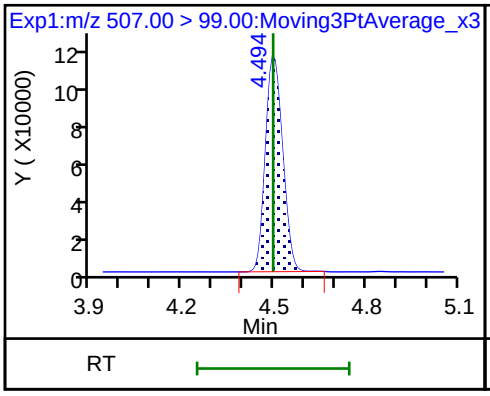
22 Perfluorooctanoic acid (M)



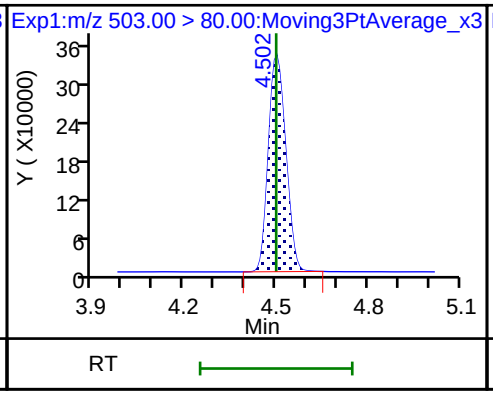
22 Perfluorooctanoic acid



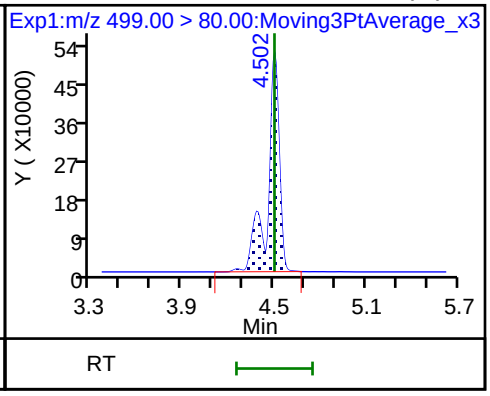
$ 28 13C8 PFOS



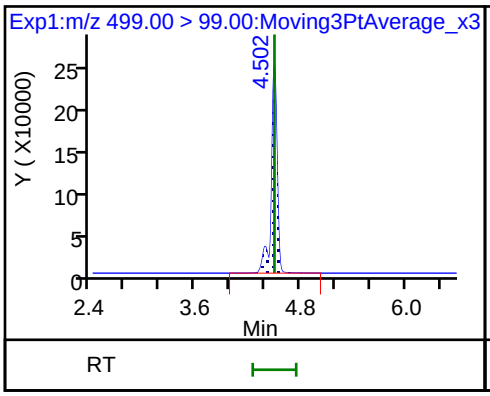
D 27 13C4 PFOS



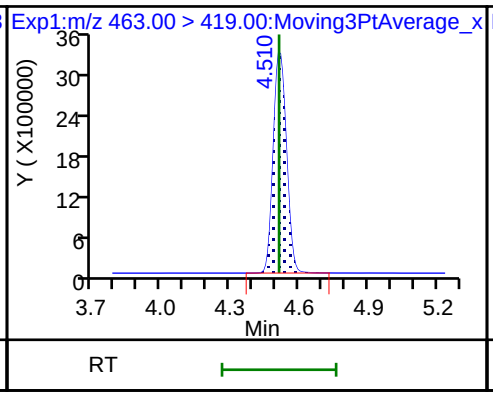
29 Perfluorooctanesulfonic acid (M)



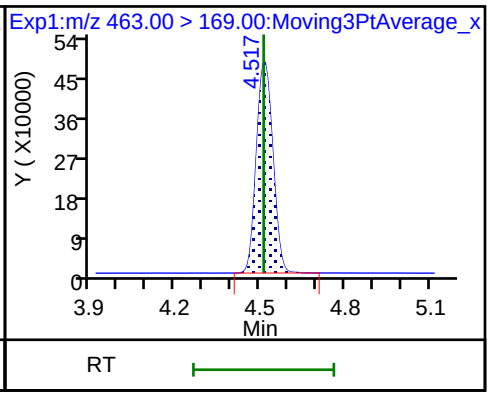
29 Perfluorooctanesulfonic acid



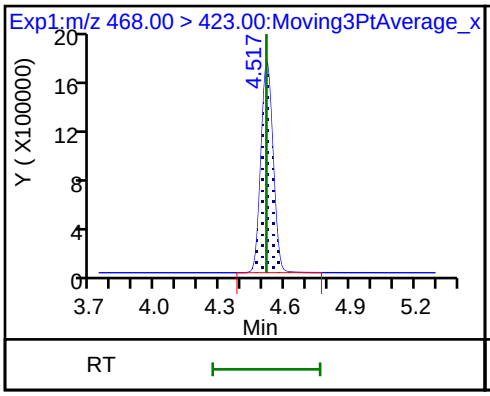
31 Perfluorononanoic acid



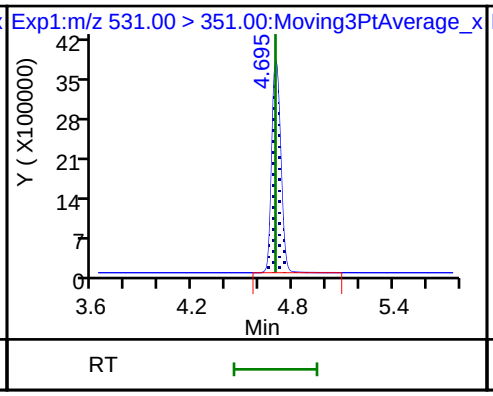
31 Perfluorononanoic acid



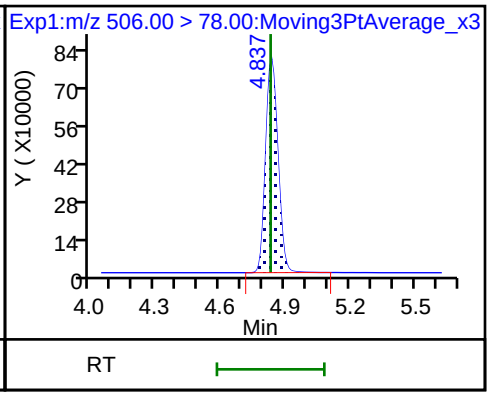
D 30 13C5 PFNA



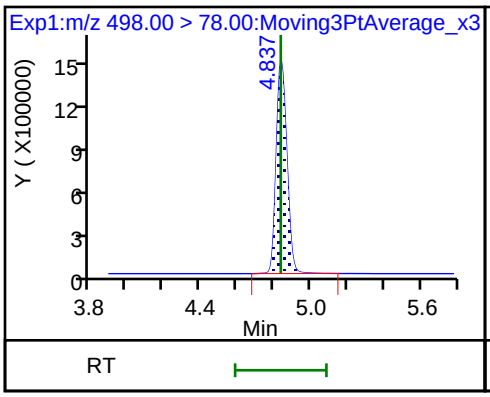
32 9ClFOS



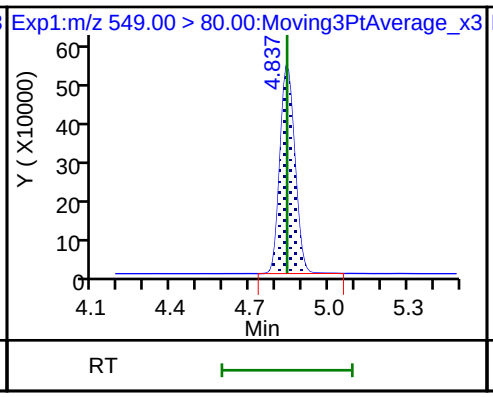
D 33 13C8 FOSA



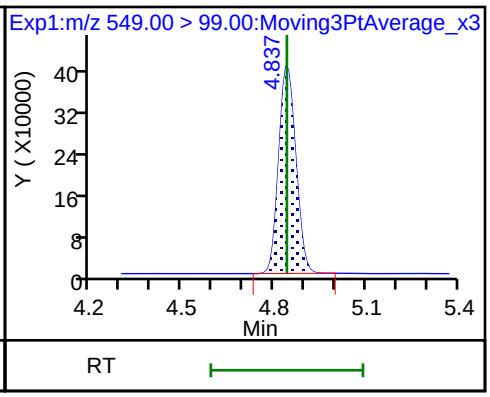
34 Perfluorooctanesulfonamide



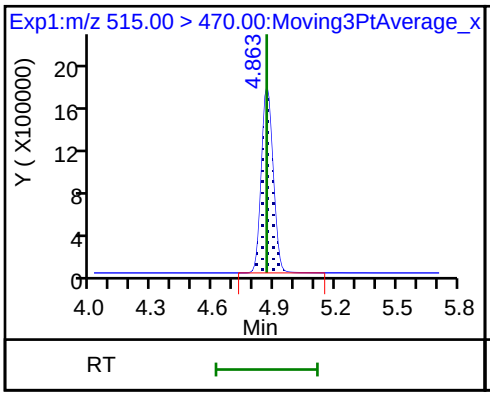
35 Perfluorononanesulfonic acid



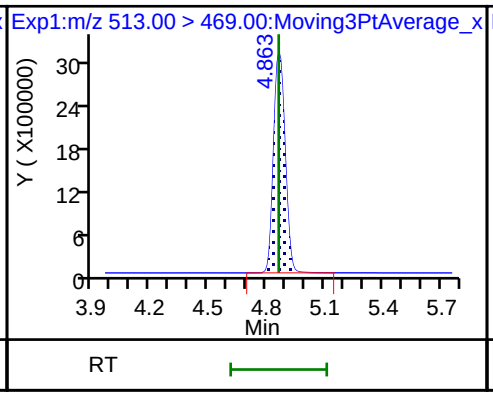
35 Perfluorononanesulfonic acid



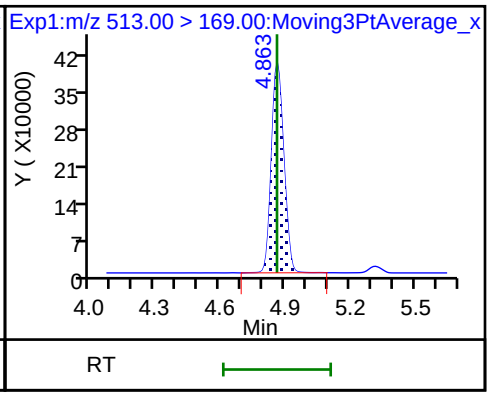
D 39 13C2 PFDA



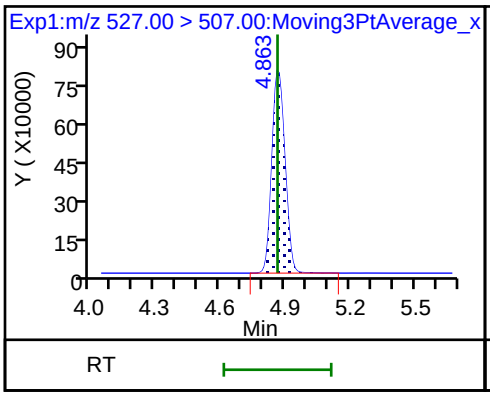
37 Perfluorodecanoic acid



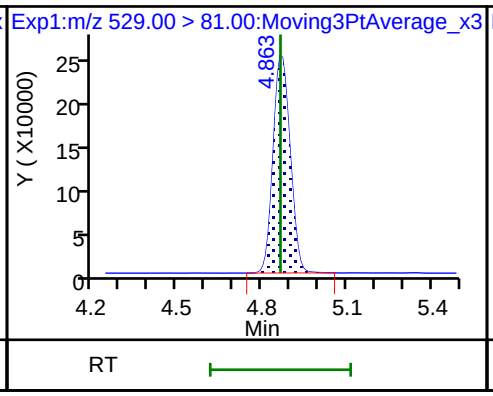
37 Perfluorodecanoic acid



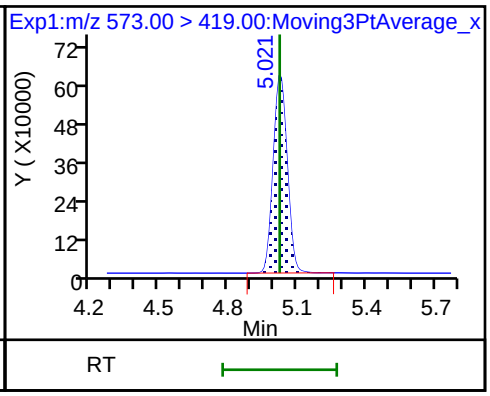
36 8:2 FTS



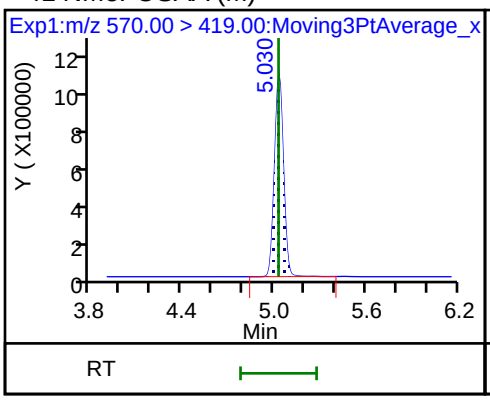
D 38 M2-8:2 FTS



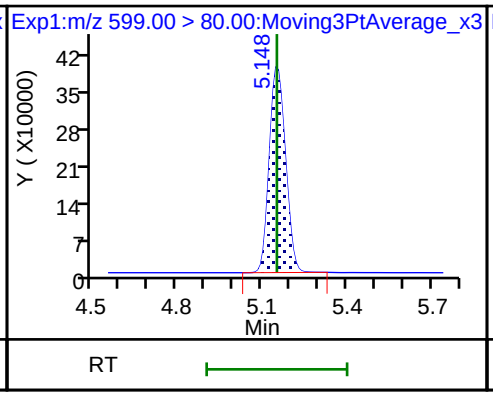
D 40 d3-NMeFOSAA



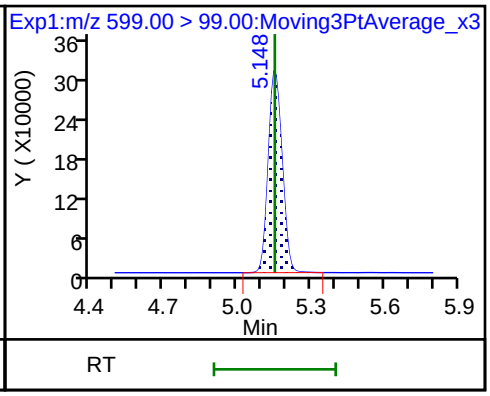
41 NMeFOSAA (M)



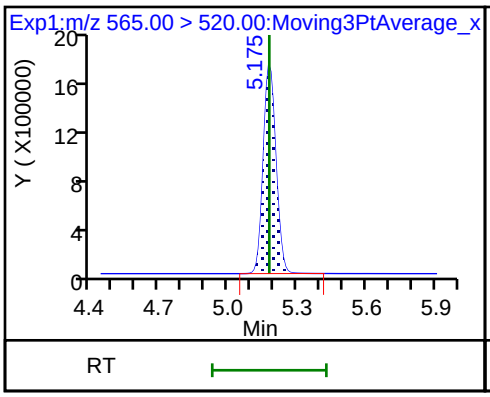
42 Perfluorodecanesulfonic acid



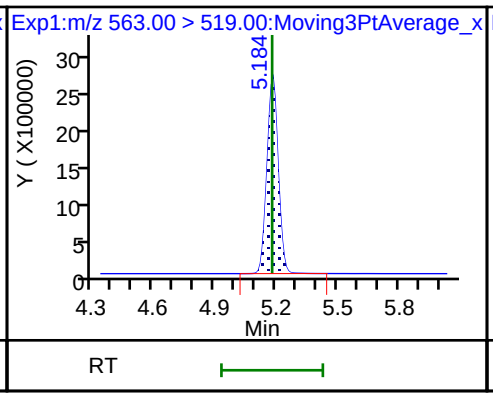
42 Perfluorodecanesulfonic acid



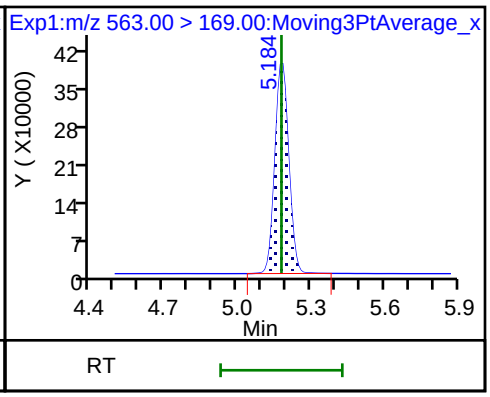
D 43 13C2 PFUnA



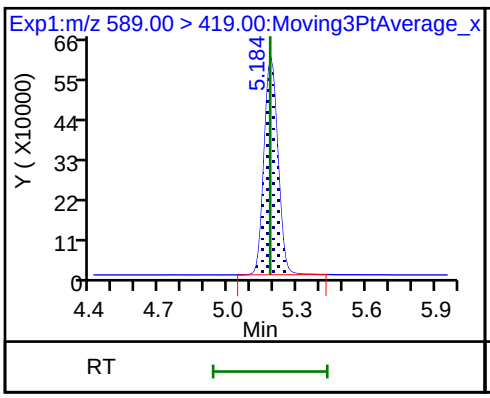
45 Perfluoroundecanoic acid



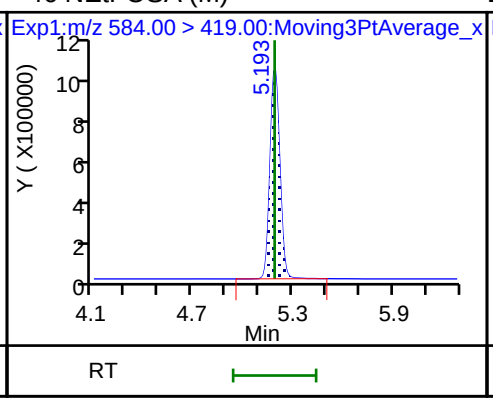
45 Perfluoroundecanoic acid



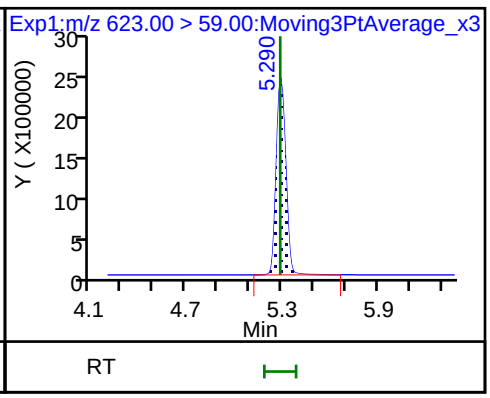
D 44 d5-NEtFOSAA



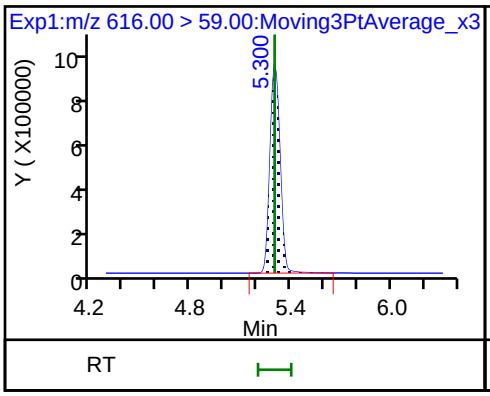
46 NEtFOSA (M)



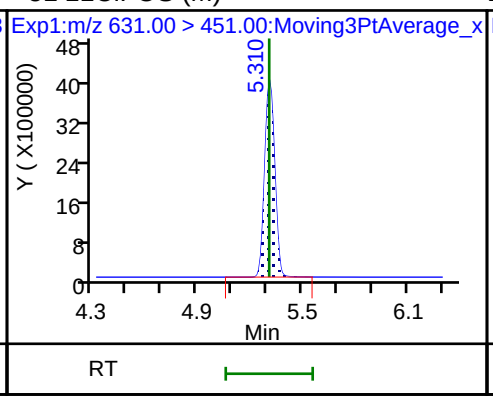
D 47 d7-N-MeFOSE-M



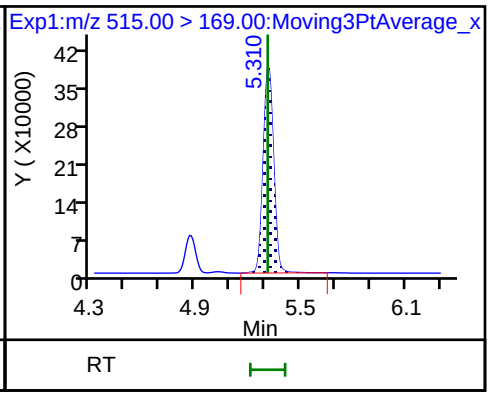
48 N-MeFOSE-M



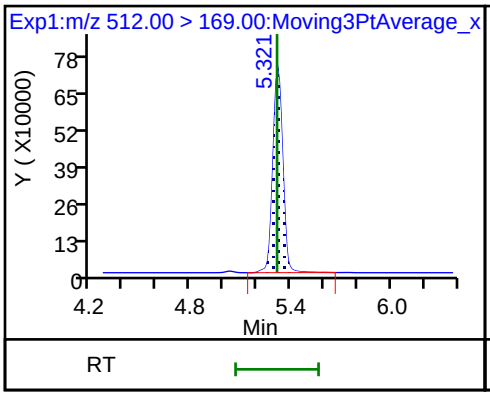
51 11ClFOS (M)



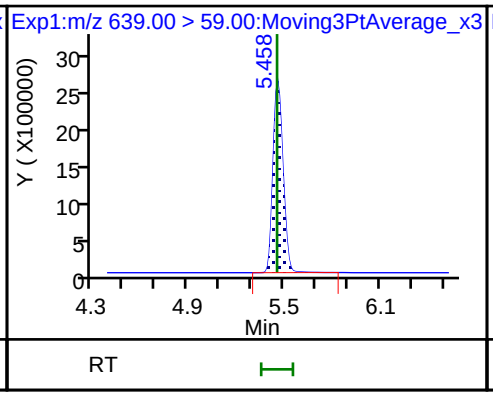
D 49 d-N-MeFOSA-M



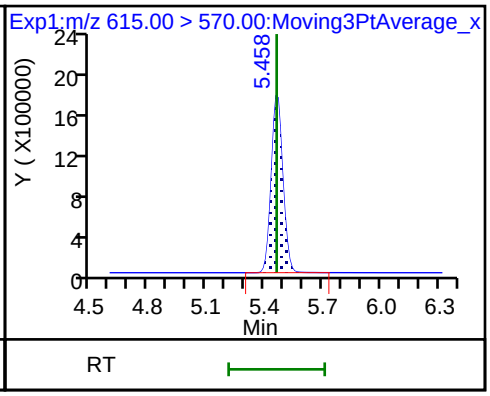
50 NMeFOSA



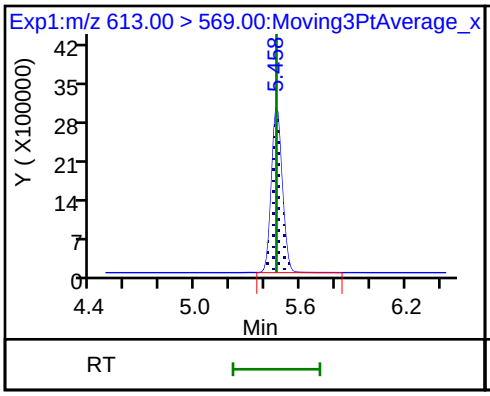
D 52 d9-N-EtFOSE-M



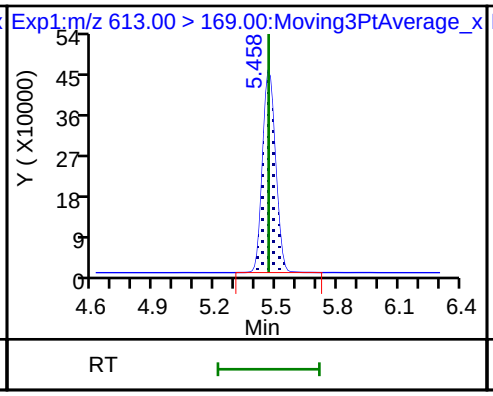
D 56 13C2 PFDoA



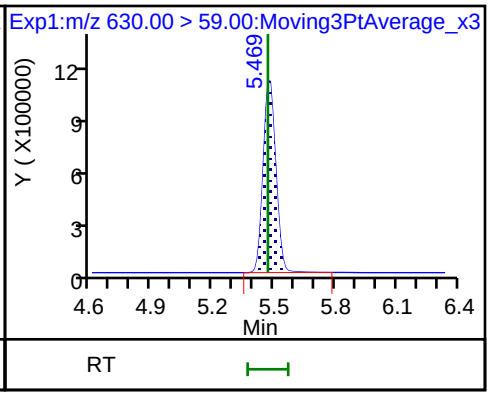
57 Perfluorododecanoic acid



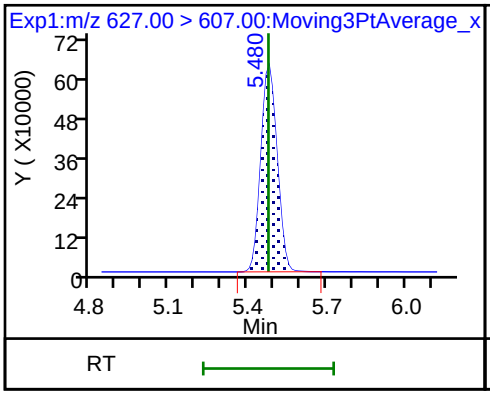
57 Perfluorododecanoic acid



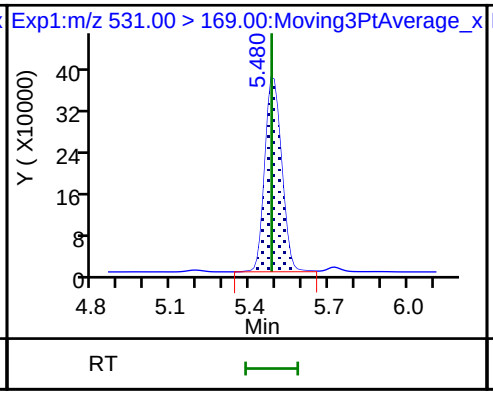
53 N-EtFOSE-M



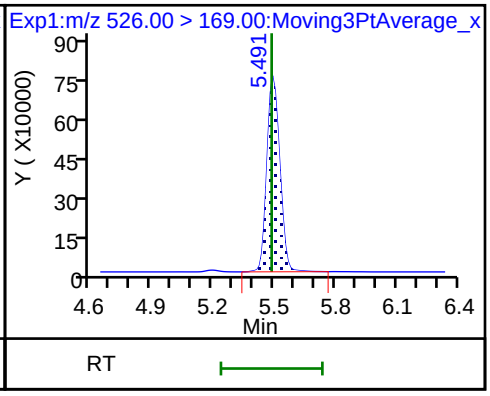
58 10:2 FTS



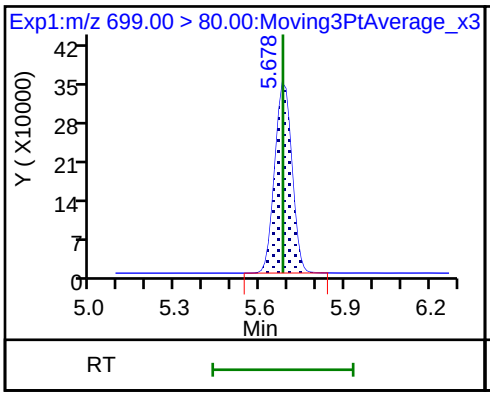
D 54 d-N-EtFOSA-M



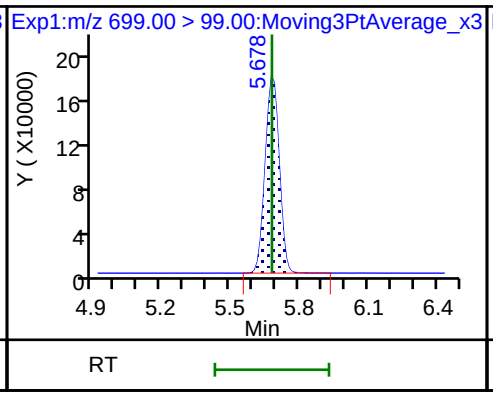
55 N-EtFOSA-M



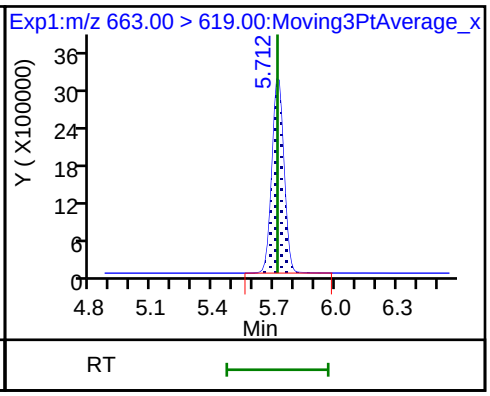
59 PFDoS



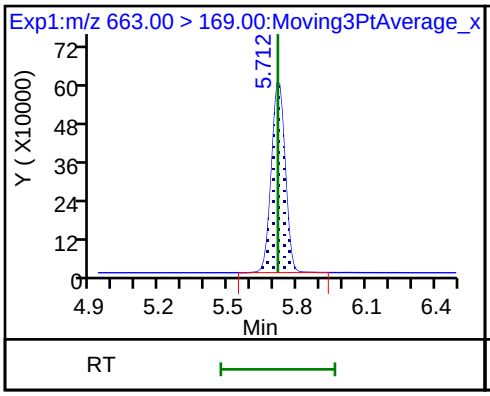
59 PFDoS



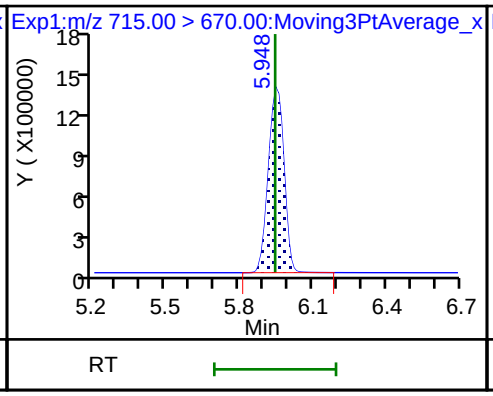
60 Perfluorotridecanoic acid



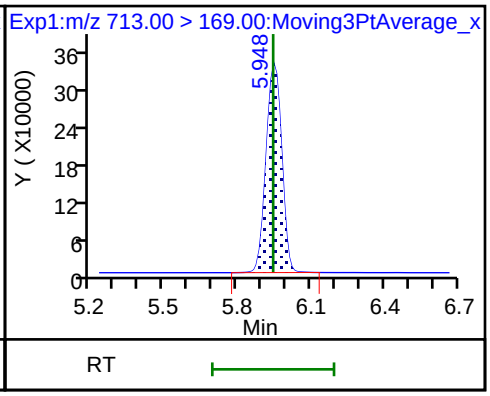
60 Perfluorotridecanoic acid



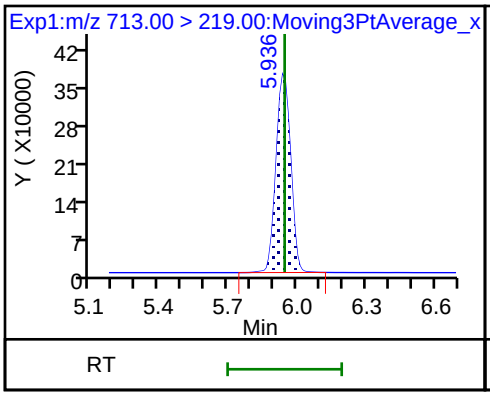
D 61 13C2 PFTeDA



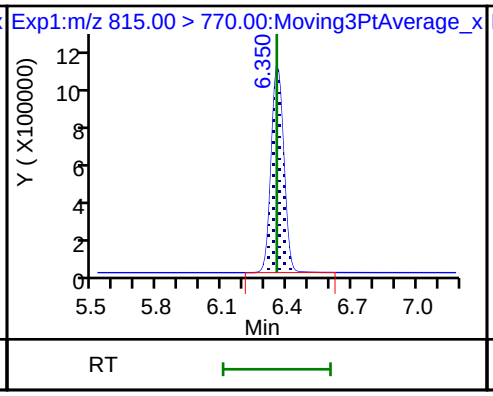
62 Perfluorotetradecanoic acid



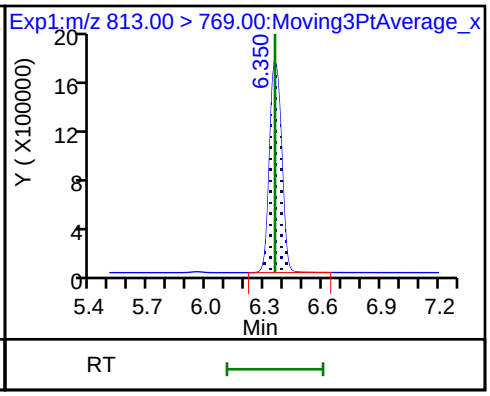
62 Perfluorotetradecanoic acid



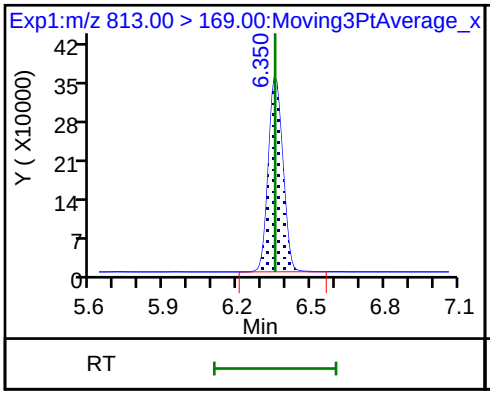
D 64 13C2 PFHxDA



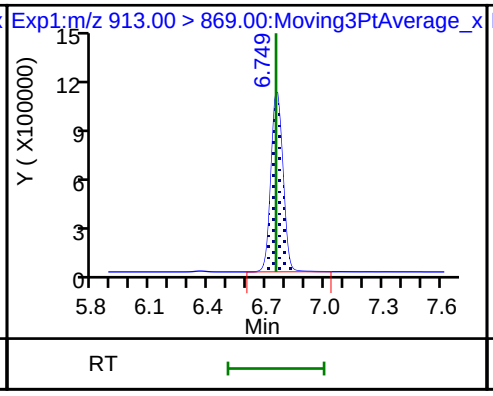
63 Perfluorohexadecanoic acid



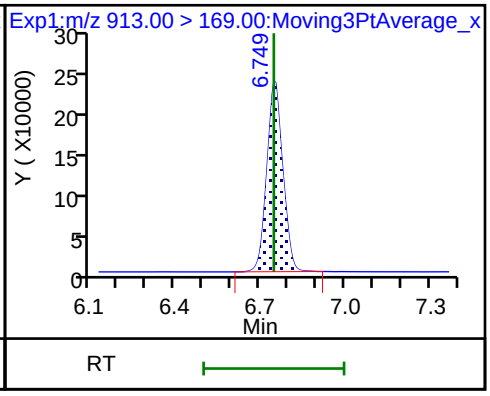
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

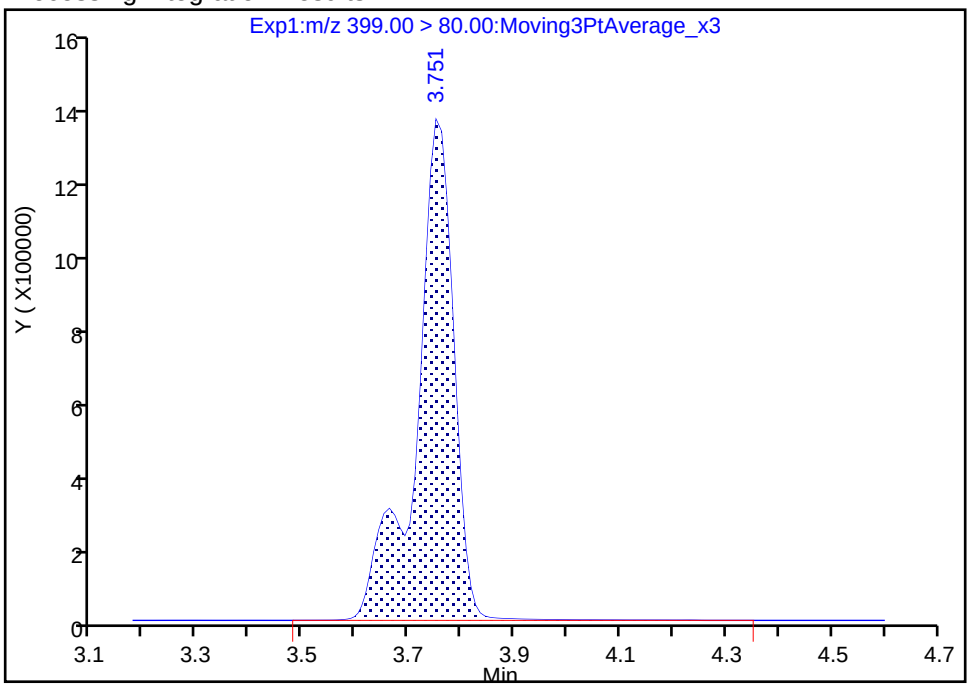
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0013.d
Injection Date: 03-Jun-2020 21:34:33 Instrument ID: A18
Lims ID: IC STD 6
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

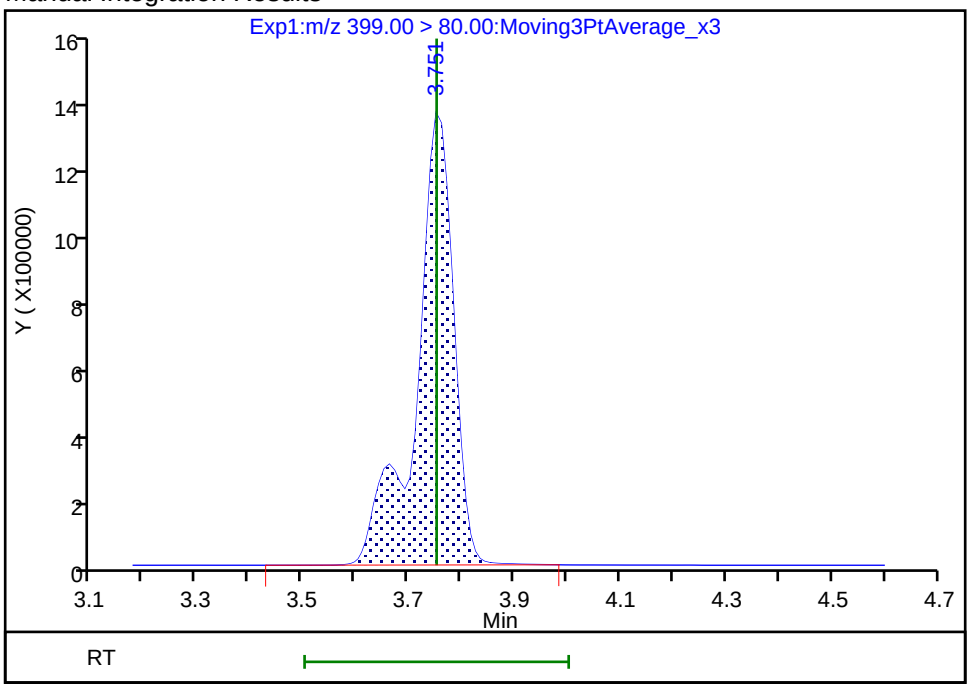
Processing Integration Results

RT: 3.75
Area: 6627288
Amount: 4.359763
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 6594631
Amount: 4.344082
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 06:02:13
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

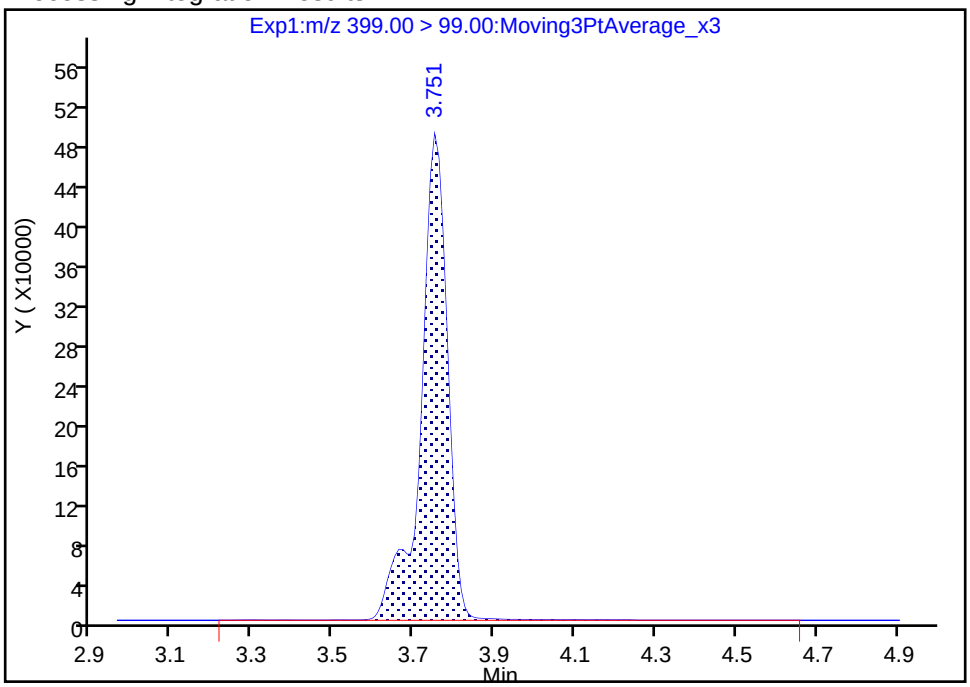
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0013.d				
Injection Date:	03-Jun-2020 21:34:33	Instrument ID:	A18		
Lims ID:	IC STD 6				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	6	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

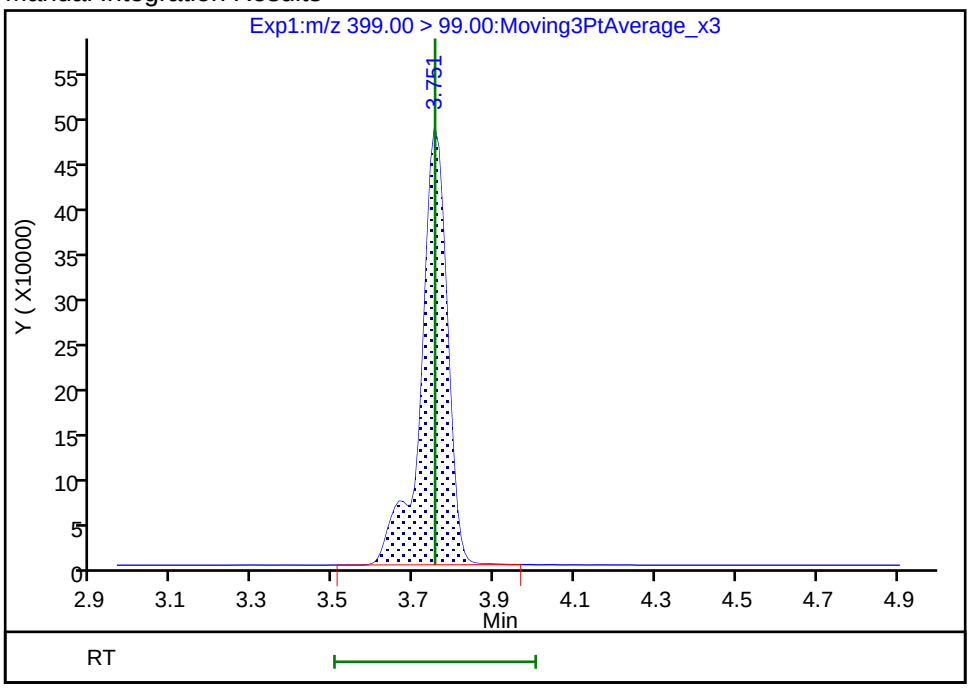
Processing Integration Results

RT: 3.75
Area: 2245928
Amount: 4.359763
Amount Units: ng/ml



Manual Integration Results

RT: 3.75
Area: 2225888
Amount: 4.344082
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 06:02:16
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

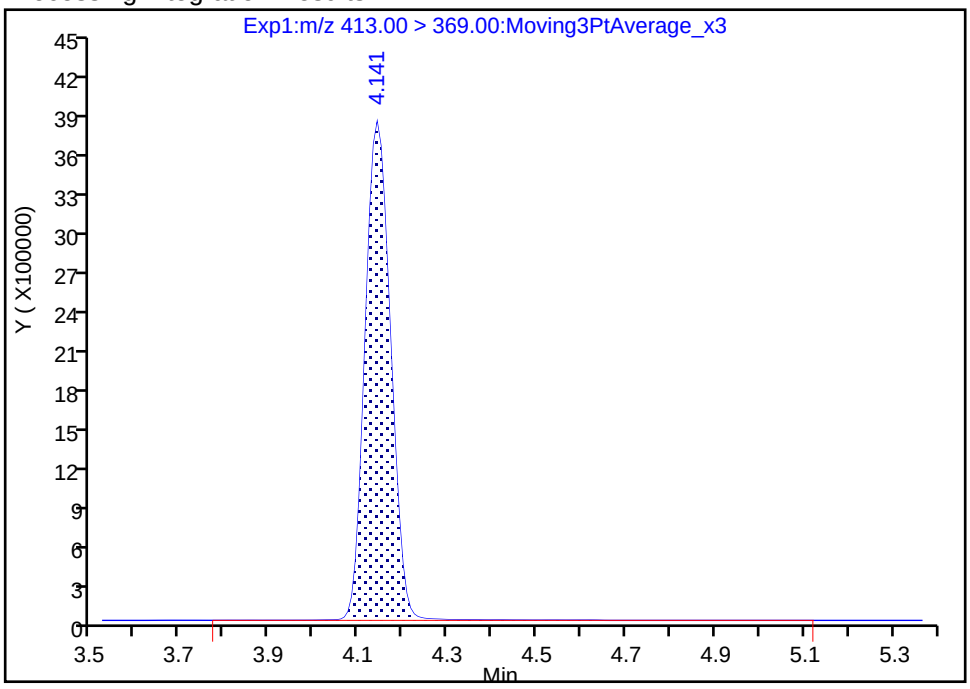
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0013.d				
Injection Date:	03-Jun-2020 21:34:33	Instrument ID:	A18		
Lims ID:	IC STD 6				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	6	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

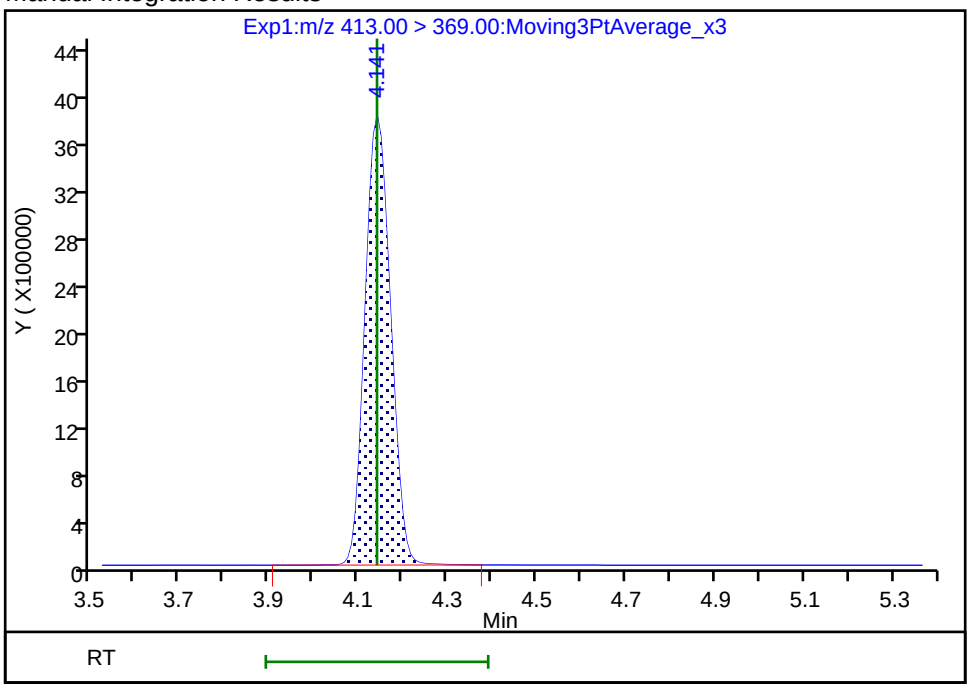
Processing Integration Results

RT: 4.14
Area: 15136021
Amount: 4.655519
Amount Units: ng/ml



Manual Integration Results

RT: 4.14
Area: 15053618
Amount: 4.636413
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:48:28

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

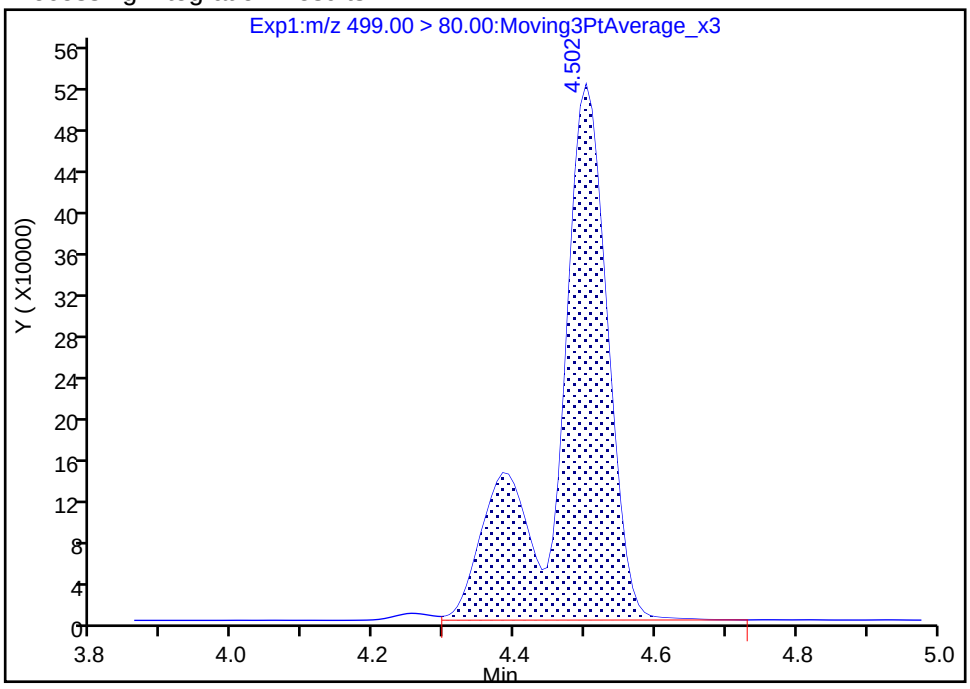
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0013.d
Injection Date: 03-Jun-2020 21:34:33 Instrument ID: A18
Lims ID: IC STD 6
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

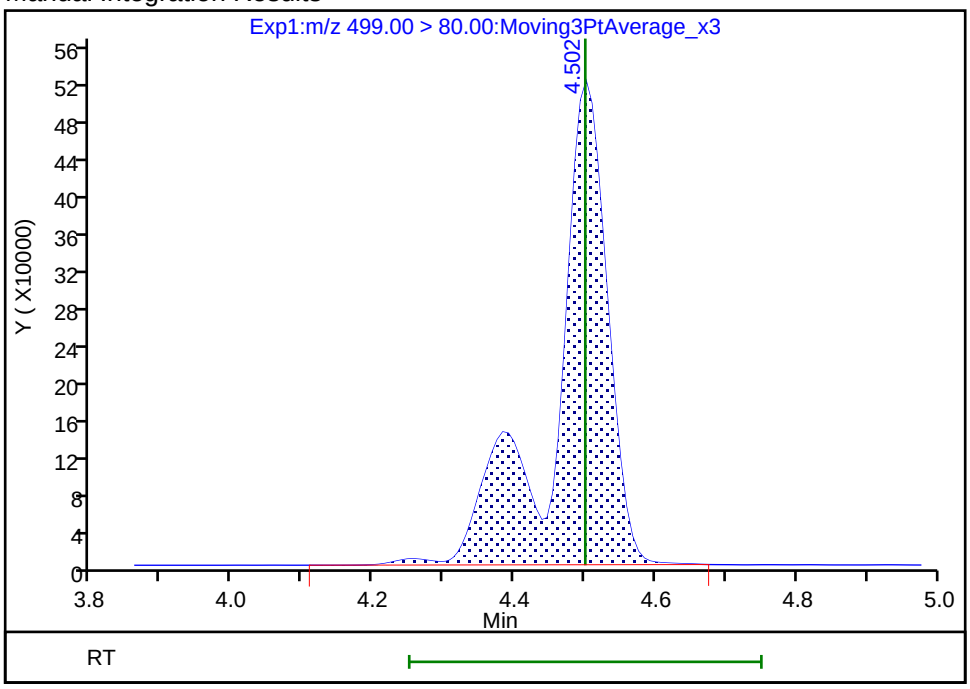
Processing Integration Results

RT: 4.50
Area: 2697379
Amount: 5.018485
Amount Units: ng/ml



Manual Integration Results

RT: 4.50
Area: 2715602
Amount: 4.844896
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 06:02:30
Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

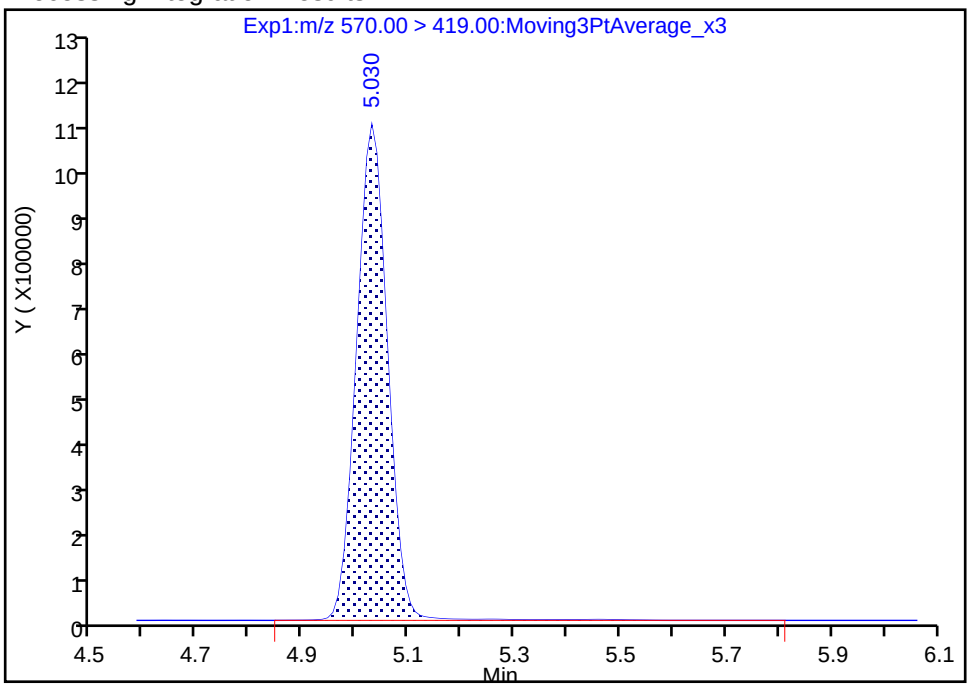
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0013.d				
Injection Date:	03-Jun-2020 21:34:33	Instrument ID:	A18		
Lims ID:	IC STD 6				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	6	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 NMeFOSAA, CAS: 2355-31-9

Signal: 1

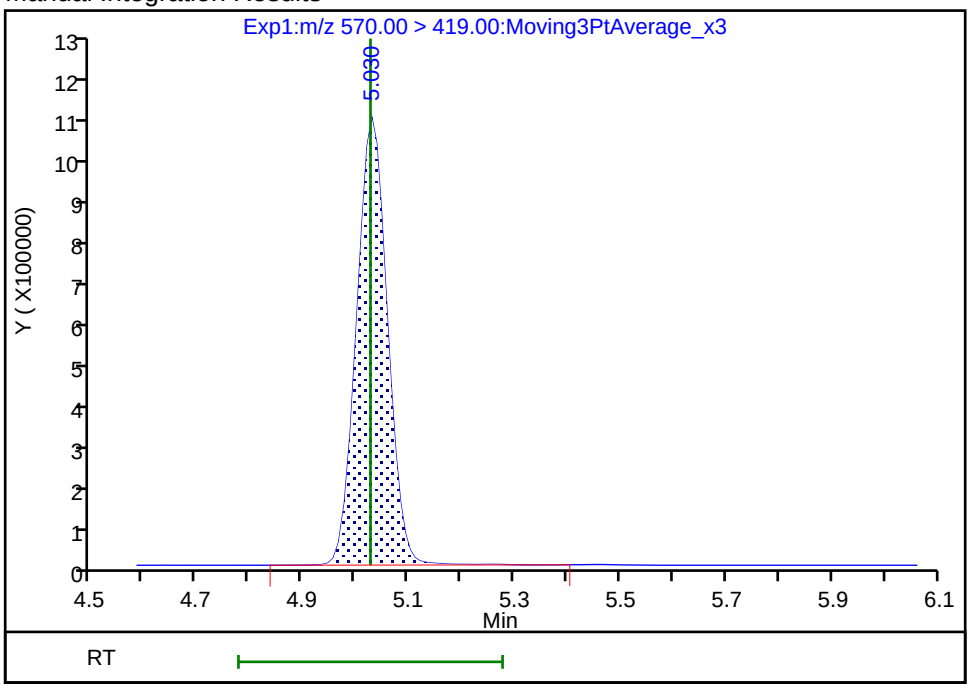
Processing Integration Results

RT: 5.03
Area: 4200142
Amount: 5.605679
Amount Units: ng/ml



Manual Integration Results

RT: 5.03
Area: 4171737
Amount: 5.580177
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:48:40
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

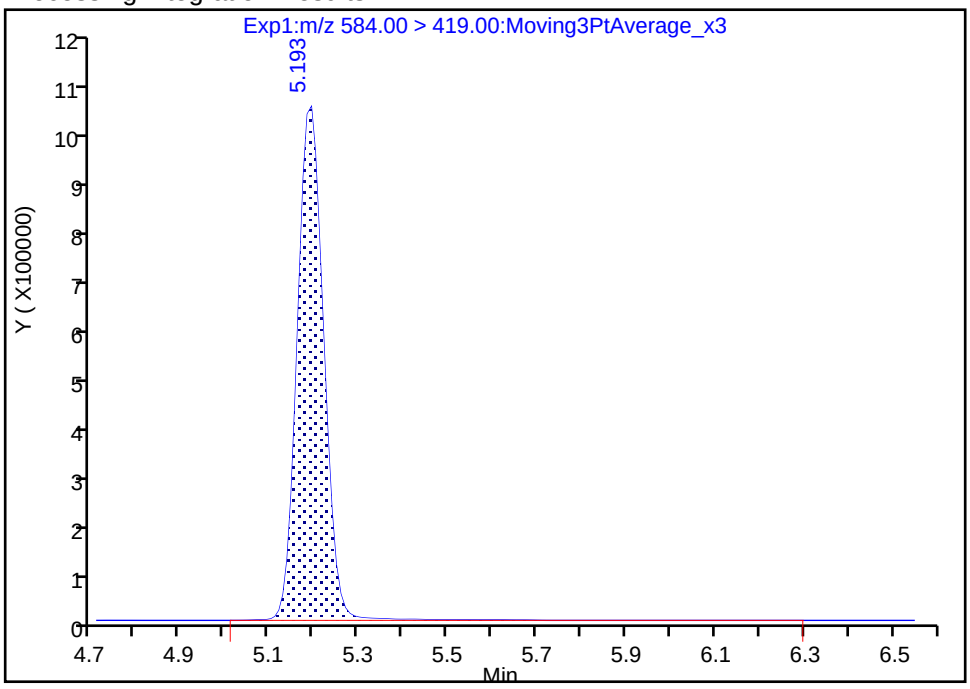
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0013.d				
Injection Date:	03-Jun-2020 21:34:33	Instrument ID:	A18		
Lims ID:	IC STD 6				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	6	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

46 NEtFOSA, CAS: 2991-50-6

Signal: 1

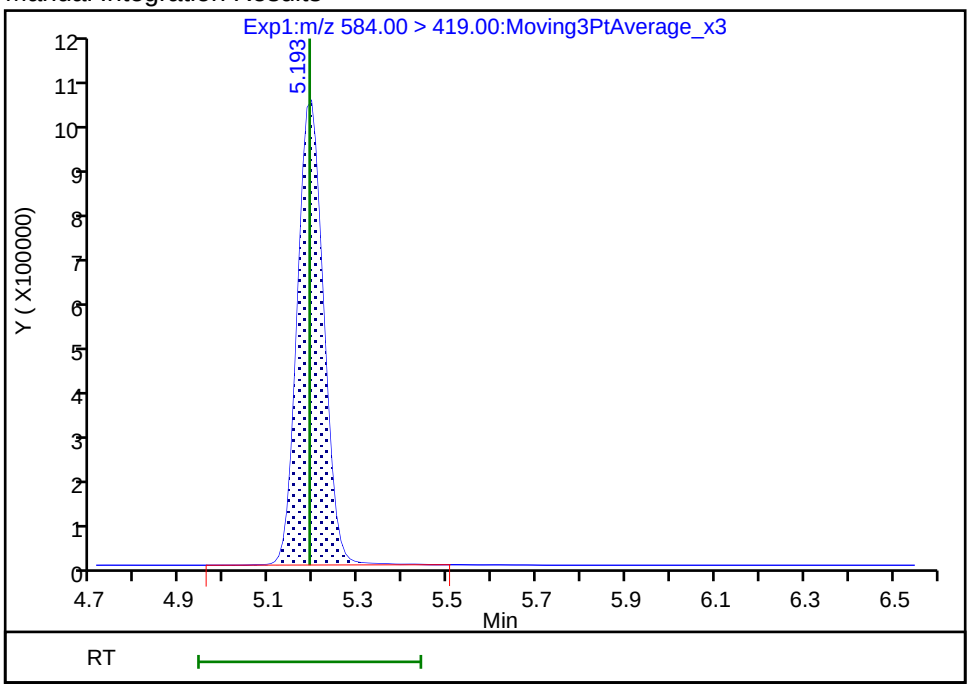
Processing Integration Results

RT: 5.19
Area: 3982031
Amount: 5.622819
Amount Units: ng/ml



Manual Integration Results

RT: 5.19
Area: 3954042
Amount: 5.597737
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:48:47

Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

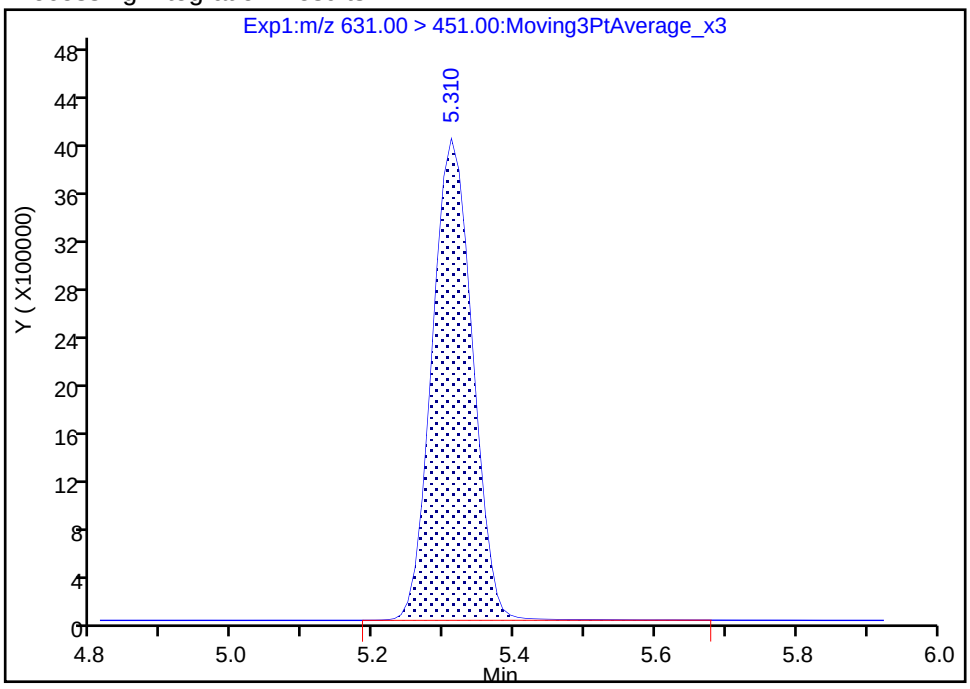
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0013.d
Injection Date: 03-Jun-2020 21:34:33 Instrument ID: A18
Lims ID: IC STD 6
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 6 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

51 11ClFOS, CAS: 763051-92-9

Signal: 1

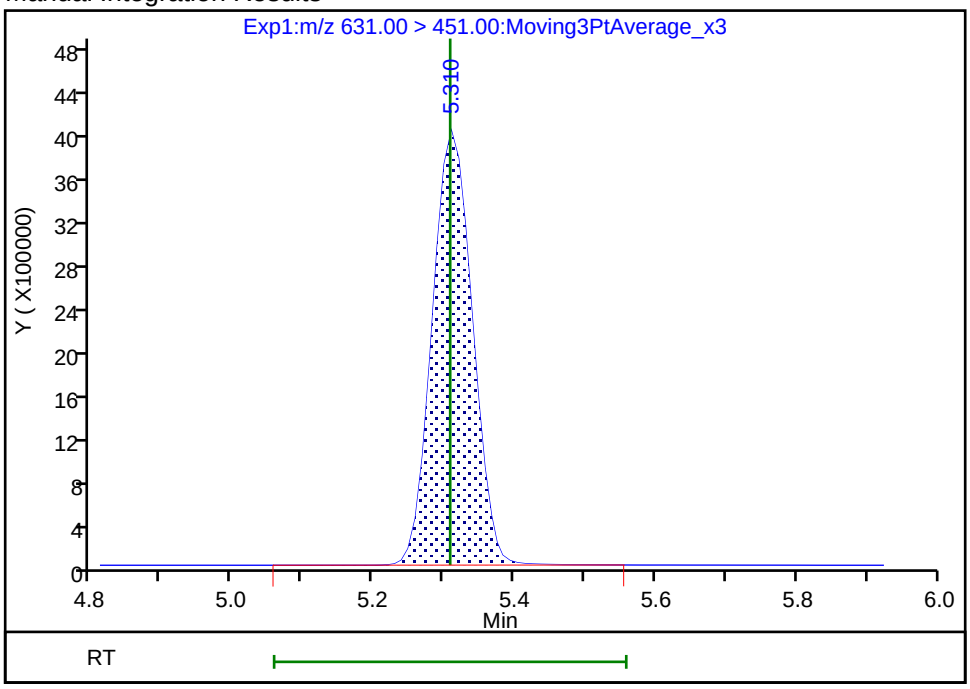
Processing Integration Results

RT: 5.31
Area: 15723407
Amount: 5.212293
Amount Units: ng/ml



Manual Integration Results

RT: 5.31
Area: 15694929
Amount: 5.204342
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:48:54
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d
Lims ID: IC STD 7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 03-Jun-2020 21:52:32 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: IC STD 7 (024)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 04-Jun-2020 10:33:03 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1046

First Level Reviewer: duranl Date: 04-Jun-2020 06:03:41
Ratio Calibration: Average of Initial Calibration

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	2.573	2.579	-0.006	0.623	9879046	2.67		107	7449	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.573	2.581	-0.008	1.000	35008146	10.4		104	9584	
D 4 13C5 PFPeA										
267.90 > 223.00	2.950	2.957	-0.007	0.714	8809811	2.65		106	4414	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.950	2.959	-0.009	1.000	33040988	9.74		97.4	6809	
D 9 13C3 PFBS										
301.90 > 80.00	2.985	2.998	-0.013	0.723	6181382	2.38		102	6130	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.997	3.003	-0.006	1.004	24137568	9.31	Target=2.25	105	5762	
298.90 > 99.00	2.997	3.003	-0.006	1.004	10683336		2.26(1.13-3.38)	105	6631	
8 4:2 FTS										
327.00 > 307.00	3.288	3.297	-0.009	1.000	8348018	9.74		104	6606	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.288	3.297	-0.009	0.796	954788	2.26		96.8	1345	
D 11 13C2 PFHxA										
315.00 > 270.00	3.330	3.339	-0.009	0.806	8655695	2.62		105	4083	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.330	3.339	-0.009	1.000	32023963	9.95	Target=11.49	99.5	11456	
313.00 > 119.00	3.330	3.339	-0.009	1.000	2699602		11.86(5.74-17.23)	99.5	2208	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.352	3.359	-0.007	1.123	19039998	10.0	Target=2.74	107	11966	
349.00 > 99.00	3.352	3.359	-0.007	1.123	7018796		2.71(1.37-4.12)	107	4463	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.447	3.459	-0.012	0.834	1757481	2.72		109	3018	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.447	3.459	-0.012	1.000	7044956	10.6		106	6022	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.731	3.743	-0.011	1.000	29883875	10.1	Target=3.25	101	9876	
363.00 > 169.00	3.731	3.743	-0.011	1.000	9253975		3.23(1.62-4.87)	101	5956	
D 18 13C4 PFHpA										
367.00 > 322.00	3.731	3.743	-0.011	0.903	7485089	2.55		102	4643	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.740	3.752	-0.012	1.000	12586480	8.91	Target=2.90	97.9	3493	M
399.00 > 99.00	3.740	3.752	-0.012	1.000	4317598		2.92(1.45-4.35)	97.9	2450	M
D 17 18O2 PFHxS										
403.00 > 84.00	3.740	3.752	-0.012	0.905	2902046	2.34		98.9	2858	
19 DONA										M
377.00 > 251.00	3.780	3.794	-0.014	0.842	82476142	9.79	Target=2.01	104	5853	M
377.00 > 85.00	3.780	3.794	-0.014	0.842	42219532		1.95(1.00-3.01)	104	14723	
21 6:2 FTS										
427.00 > 407.00	4.107	4.117	-0.010	1.000	6103915	9.57		101	6782	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.107	4.117	-0.010	0.994	756308	2.22		93.5	2082	
$ 26 13C8 PFOA										
421.00 > 376.00	4.124	4.134	-0.010	0.998	6333861	2.61		107	7838	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.124	4.136	-0.012	0.919	7904644	9.86	Target=3.25	104	4004	
449.00 > 99.00	4.124	4.136	-0.012	0.919	2443547		3.23(1.63-4.88)	104	4100	
D 25 13C4 PFOA										
417.00 > 372.00	4.132	4.139	-0.007	1.000	7311766	2.48		99.4	7002	
* 23 13C2 PFOA										
415.00 > 370.00	4.132	4.141	-0.009		7428882	2.50			6358	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.132	4.141	-0.009	1.000	26753293	9.03	Target=2.35	90.3	3792	M
413.00 > 169.00	4.132	4.141	-0.009	1.000	11789966		2.27(1.18-3.53)	90.3	36537	
$ 28 13C8 PFOS										
507.00 > 99.00	4.486	4.496	-0.010	1.086	433019	2.38		99.6	1347	
D 27 13C4 PFOS										
503.00 > 80.00	4.486	4.499	-0.013	1.086	1265539	2.40		101	2571	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.486	4.500	-0.014	1.000	5196576	9.73	Target=2.41	105	2187	M
499.00 > 99.00	4.486	4.500	-0.014	1.000	2107900		2.47(1.21-3.62)	105	2969	M
31 Perfluorononanoic acid										
463.00 > 419.00	4.502	4.512	-0.010	1.000	23580537	10.0	Target=6.74	100	5273	
463.00 > 169.00	4.502	4.512	-0.010	1.000	3357921		7.02(3.37-10.11)	100	2944	
D 30 13C5 PFNA										
468.00 > 423.00	4.502	4.513	-0.011	1.090	6122913	2.55		102	5413	
32 9ClFOS										
531.00 > 351.00	4.682	4.694	-0.012	1.044	26345649	10.1		108	23287	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.829	4.835	-0.006	1.002	10941407	10.5		105	5656	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.829	4.841	-0.012	1.076	4039861	9.76	Target=1.37	102	5248	
549.00 > 99.00	4.829	4.841	-0.012	1.076	2911375		1.39(0.69-2.06)	102	7390	
D 33 13C8 FOSA										
506.00 > 78.00	4.820	4.832	-0.012	1.167	2826961	2.42		96.9	2387	
D 39 13C2 PFDA										
515.00 > 470.00	4.855	4.862	-0.007	1.175	5910150	2.28		91.3	6967	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.855	4.862	-0.007	1.000	22626044	10.7	Target=8.07	107	7960	
513.00 > 169.00	4.846	4.862	-0.016	0.998	2690703		8.41(4.04-12.11)	107	262	
36 8:2 FTS										
527.00 > 507.00	4.855	4.864	-0.009	1.000	5740074	10.0		104	6814	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.855	4.864	-0.009	1.175	894581	2.08		86.8	1893	
D 40 d3-NMeFOSAA										
573.00 > 419.00	5.010	5.023	-0.013	1.213	2601201	2.70		108	2749	
41 NMeFOSAA										M
570.00 > 419.00	5.020	5.027	-0.007	1.002	8405563	11.4		114	2643	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.138	5.152	-0.014	1.145	2965384	9.69	Target=1.31	101	3922	
599.00 > 99.00	5.138	5.152	-0.014	1.145	2235587		1.33(0.65-1.96)	101	2910	
D 43 13C2 PFUnA										
565.00 > 520.00	5.175	5.178	-0.003	1.252	5916246	2.44		97.7	5923	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.175	5.179	-0.004	1.000	19257100	11.0	Target=6.70	110	8081	
563.00 > 169.00	5.165	5.179	-0.014	0.998	2771682		6.95(3.35-10.05)	110	3422	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.175	5.181	-0.006	1.252	2248741	2.29		91.6	1405	
46 NEtFOSA										M
584.00 > 419.00	5.184	5.189	-0.005	1.002	7245516	11.5		115	2505	M
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.278	5.287	-0.009	1.278	9583664	13.8		110	13968	
48 N-MeFOSE-M										
616.00 > 59.00	5.299	5.301	-0.002	1.004	7914584	10.5		105	10497	
51 11ClFOS										
631.00 > 451.00	5.299	5.309	-0.010	1.181	29771603	10.4		110	16448	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.309	5.311	-0.002	1.285	1572924	2.87		115	34.5	
50 NMeFOSA										
512.00 > 169.00	5.309	5.316	-0.007	1.000	5697566	9.81		98.1	870	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.448	5.454	-0.006	1.318	10702856	13.6		109	8634	
57 Perfluorododecanoic acid										M
613.00 > 569.00	5.458	5.462	-0.004	1.000	24303897	10.2	Target=6.20	102	5427	M
613.00 > 169.00	5.448	5.462	-0.014	0.998	3916588		6.21(3.10-9.30)	102	4504	
D 56 13C2 PFDoA										M
615.00 > 570.00	5.458	5.462	-0.004	1.321	6408321	2.50		100	4757	M

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
53 N-EtFOSE-M										
630.00 > 59.00	5.458	5.468	-0.010	1.002	8772503	10.2		102	7735	
58 10:2 FTS										
627.00 > 607.00	5.469	5.477	-0.008	1.127	5139250	11.3		118	4038	
D 54 d-N-EtFOSA-M										M
531.00 > 169.00	5.480	5.482	-0.002	1.326	1578747	2.80		112	205	M
55 N-EtFOSA-M										
526.00 > 169.00	5.480	5.486	-0.006	1.000	6435459	9.75		97.5	676	
59 PFDoS										
699.00 > 80.00	5.666	5.680	-0.014	1.263	2883712	10.2	Target=2.11	105	4932	
699.00 > 99.00	5.666	5.680	-0.014	1.263	1458847		1.98(1.06-3.17)	105	3659	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.712	5.715	-0.003	1.046	22988143	10.3	Target=4.98	103	6030	
663.00 > 169.00	5.701	5.715	-0.014	1.044	4283489		5.37(2.49-7.47)	103	5900	
D 61 13C2 PFTeDA										M
715.00 > 670.00	5.936	5.945	-0.009	1.437	6132618	2.86		115	3749	M
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.936	5.945	-0.009	1.000	2725845	8.35	Target=0.96	83.5	4375	
713.00 > 219.00	5.936	5.945	-0.009	1.000	3035988		0.90(0.48-1.43)	83.5	6578	
D 64 13C2 PFHxDA										M
815.00 > 770.00	6.342	6.352	-0.010	1.535	4424010	2.92		117	5342	M
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.342	6.353	-0.011	1.000	14457600	9.34	Target=5.10	93.4	4913	
813.00 > 169.00	6.342	6.353	-0.011	1.000	2778842		5.20(2.55-7.64)	93.4	4239	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.742	6.748	-0.006	1.063	9922359	10.5	Target=5.50	105	3847	
913.00 > 169.00	6.736	6.748	-0.012	1.062	1789395		5.55(2.75-8.25)	105	4098	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL7_00024 Amount Added: 1.00 Units: mL

Report Date: 04-Jun-2020 10:33:05 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Injection Date: 03-Jun-2020 21:52:32 Instrument ID: A18

Lims ID: IC STD 7

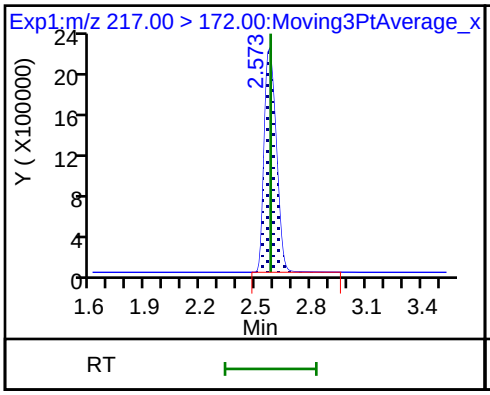
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9

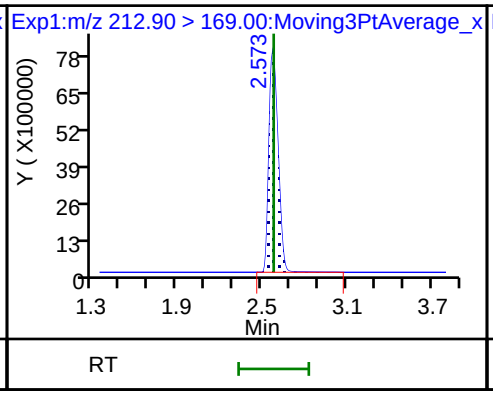
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

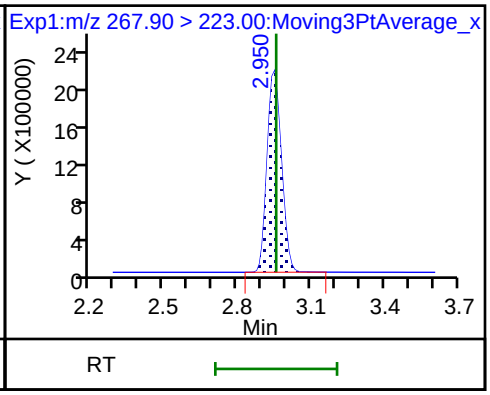
D 1 13C4 PFBA



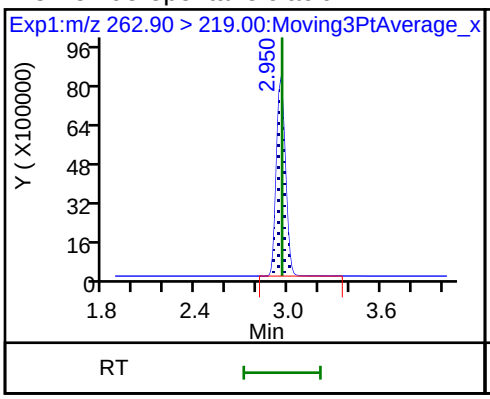
2 Perfluorobutanoic acid



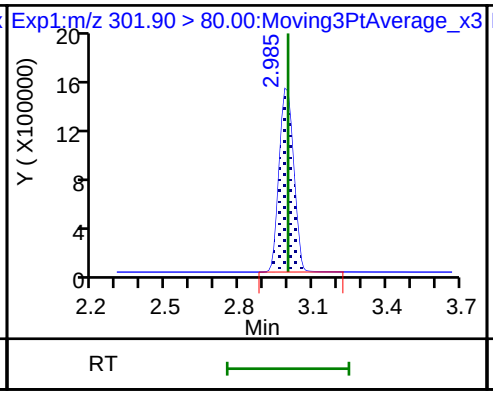
D 4 13C5 PFPeA



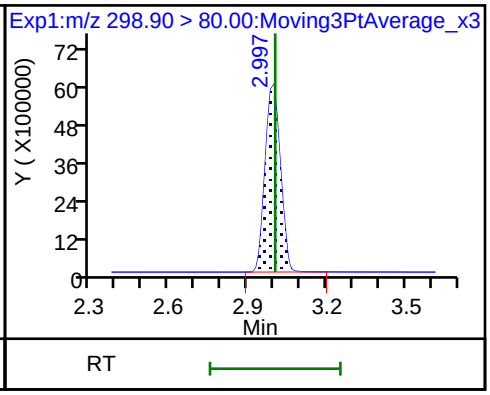
5 Perfluoropentanoic acid



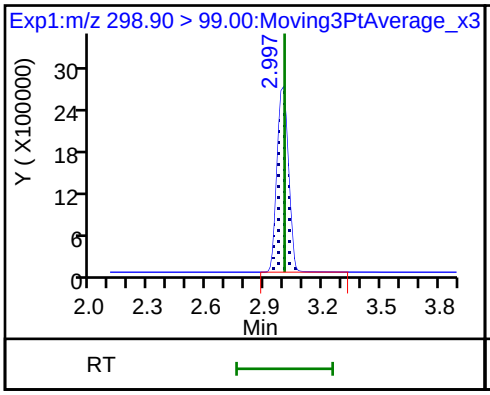
D 9 13C3 PFBS



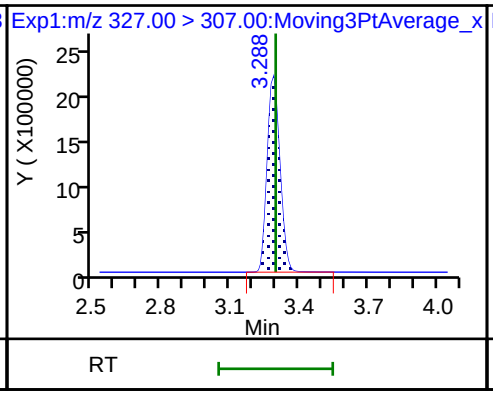
6 Perfluorobutanesulfonic acid



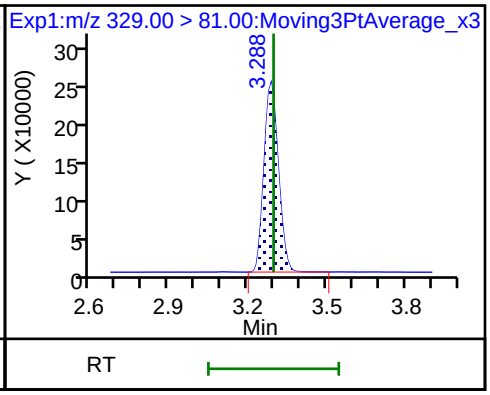
6 Perfluorobutanesulfonic acid



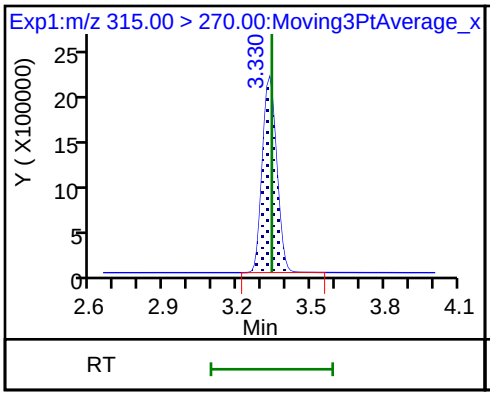
8 4:2 FTS



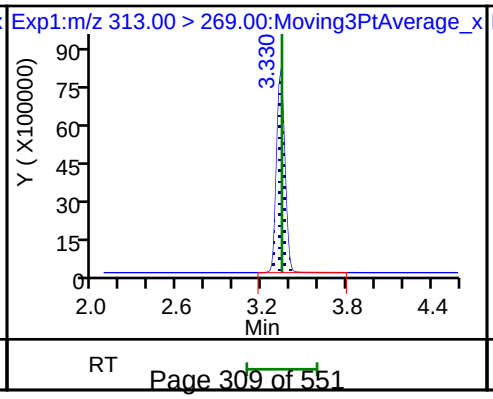
D 7 M2-4:2 FTS



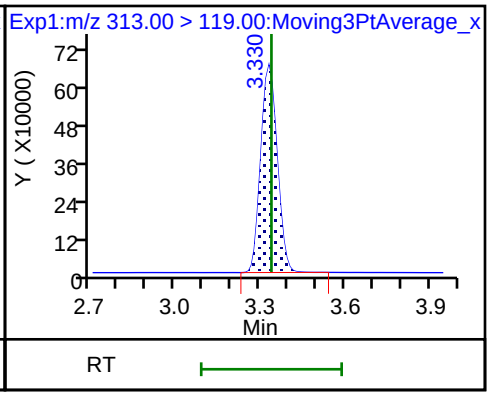
D 11 13C2 PFHxA



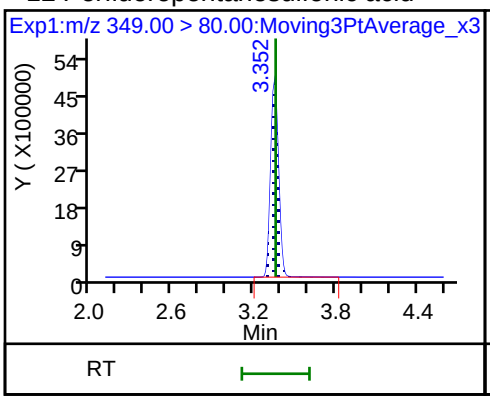
10 Perfluorohexanoic acid



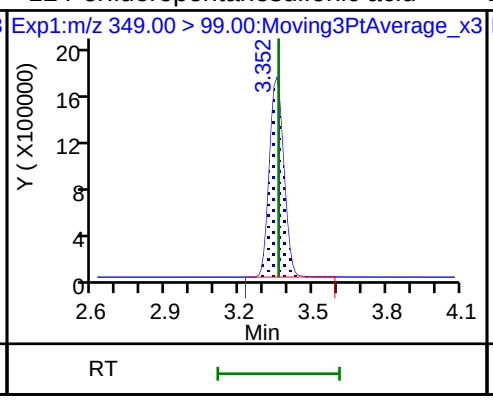
10 Perfluorohexanoic acid



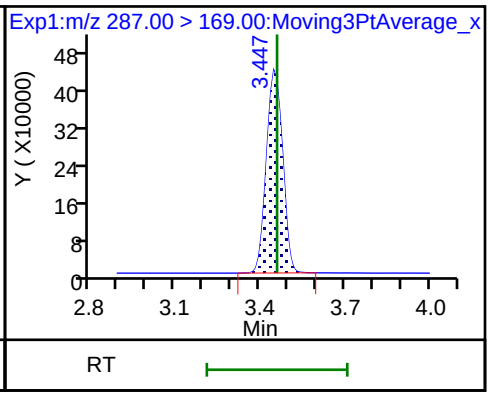
12 Perfluoropentanesulfonic acid



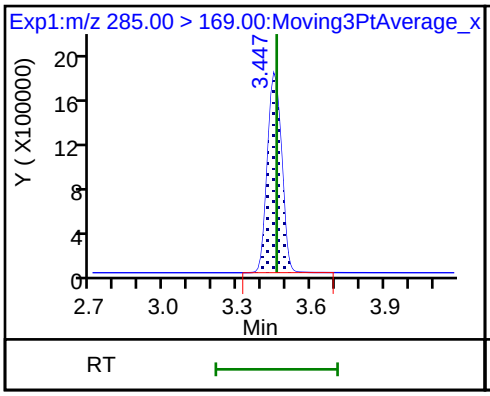
12 Perfluoropentanesulfonic acid



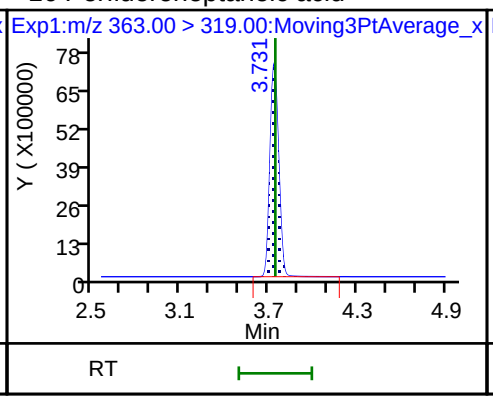
D 14 13C3 HFPO-DA



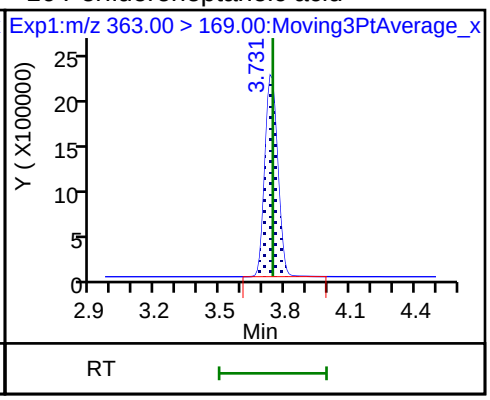
13 HPFO-DA



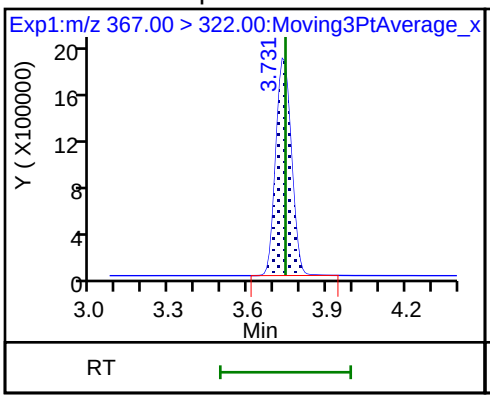
16 Perfluoroheptanoic acid



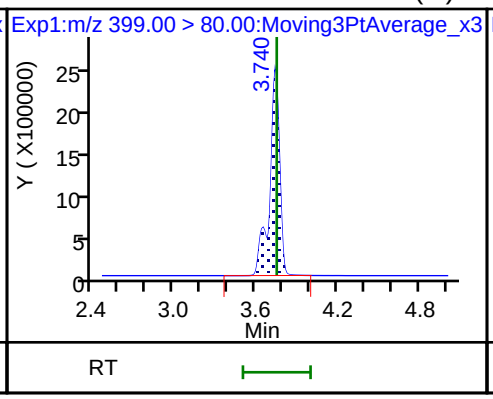
16 Perfluoroheptanoic acid



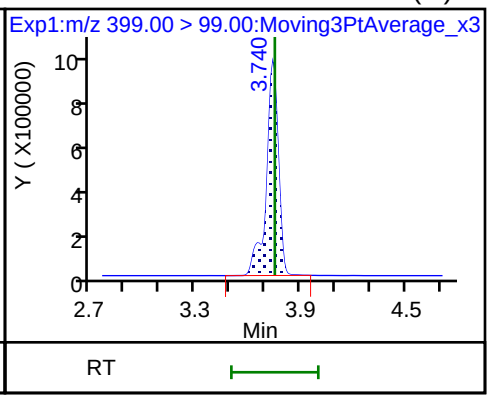
D 18 13C4 PFHpA



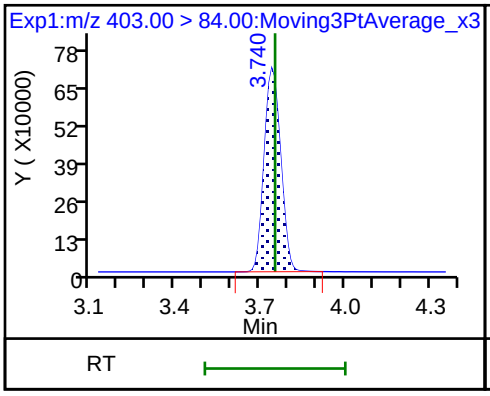
15 Perfluorohexanesulfonic acid (M)



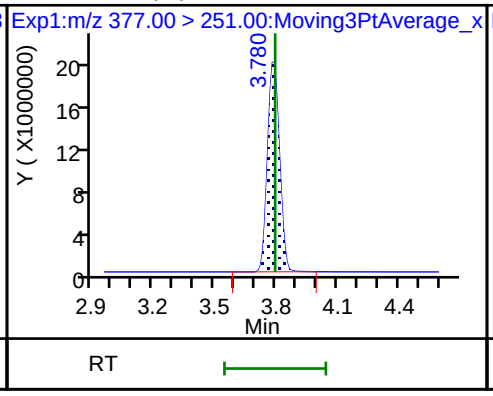
15 Perfluorohexanesulfonic acid (M)



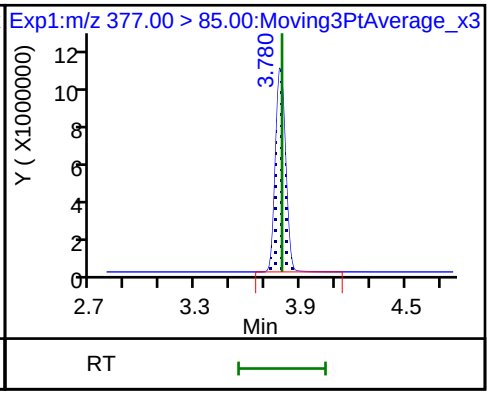
D 17 18O2 PFHxS



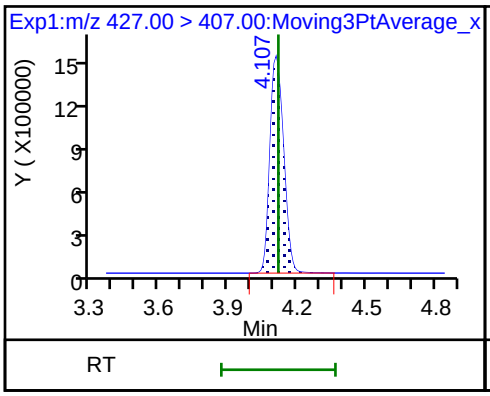
19 DONA (M)



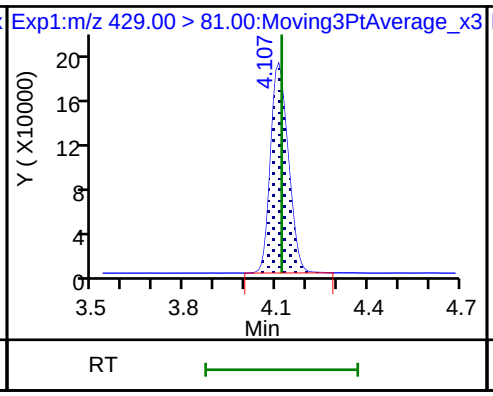
19 DONA



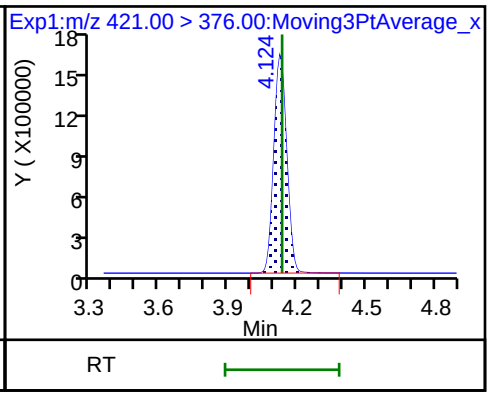
21 6:2 FTS



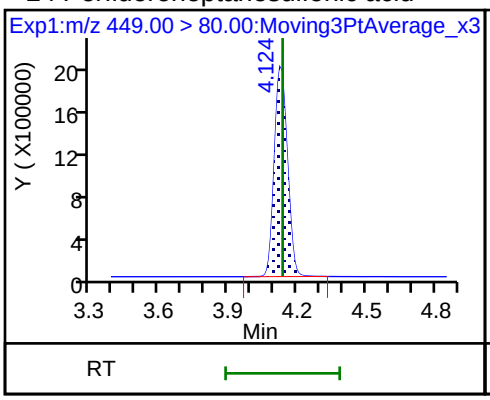
D 20 M2-6:2 FTS



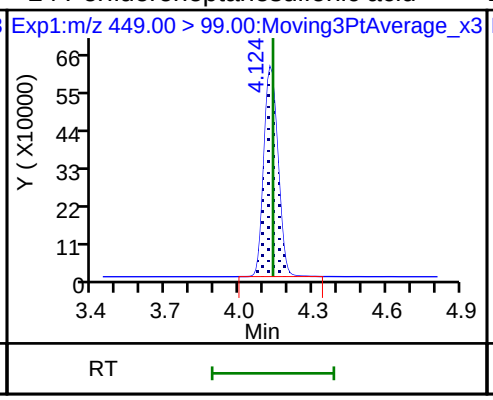
$ 26 13C8 PFOA



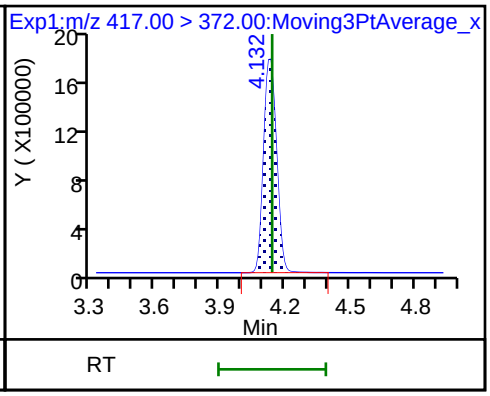
24 Perfluoroheptanesulfonic acid



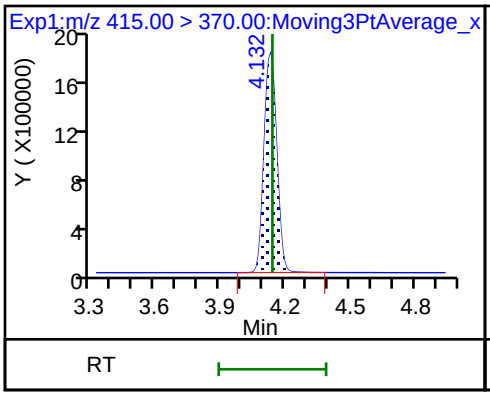
24 Perfluoroheptanesulfonic acid



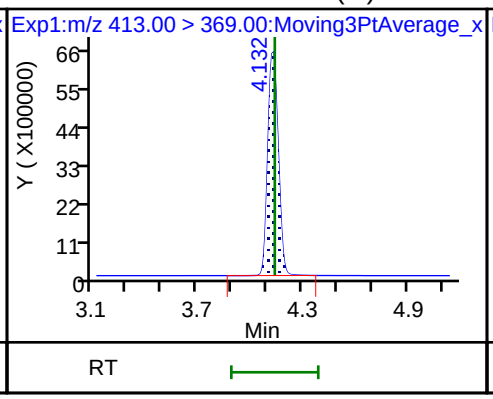
D 25 13C4 PFOA



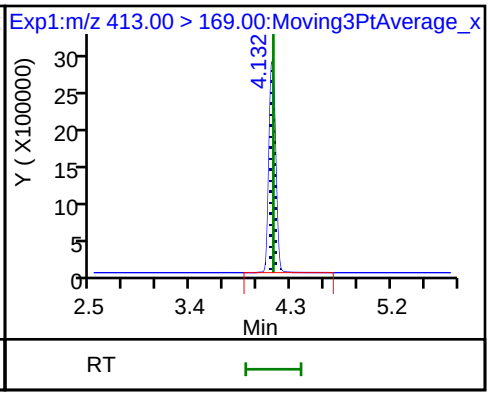
* 23 13C2 PFOA



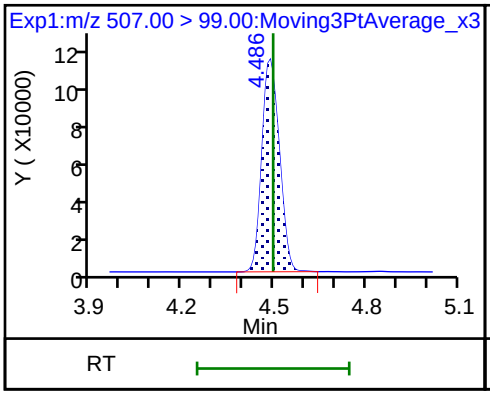
22 Perfluorooctanoic acid (M)



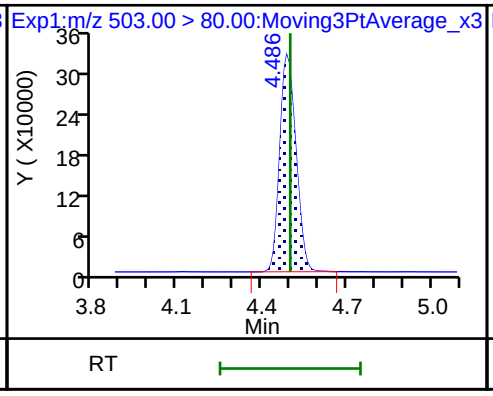
22 Perfluorooctanoic acid



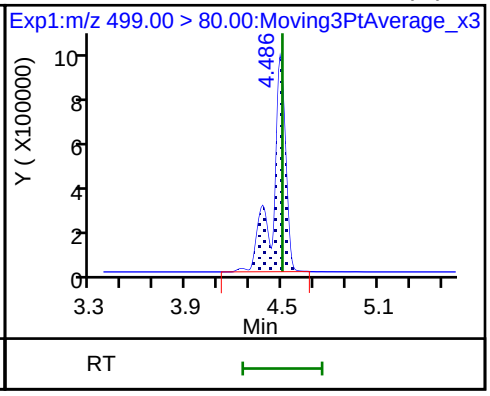
$ 28 13C8 PFOS



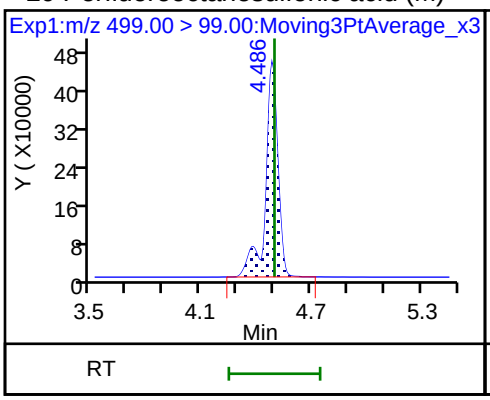
D 27 13C4 PFOS



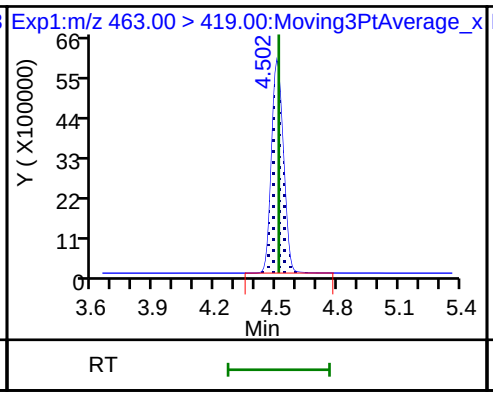
29 Perfluorooctanesulfonic acid (M)



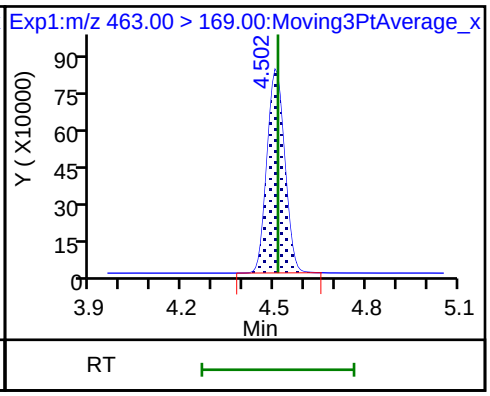
29 Perfluorooctanesulfonic acid (M)



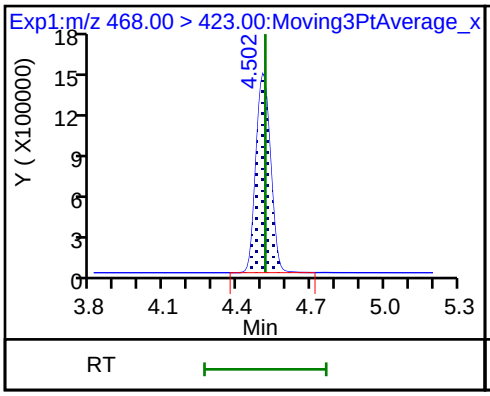
31 Perfluorononanoic acid



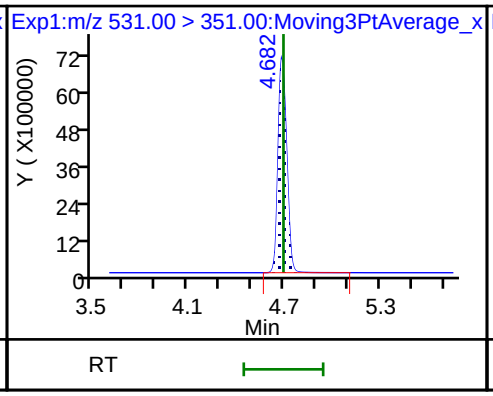
31 Perfluorononanoic acid



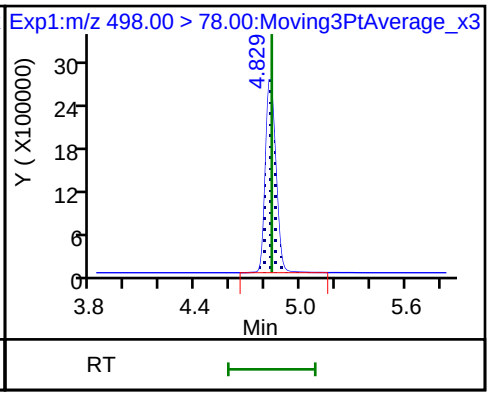
D 30 13C5 PFNA



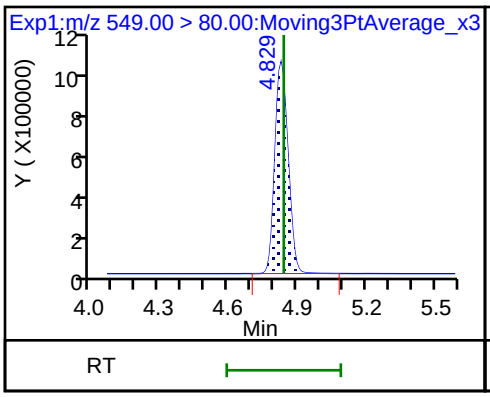
32 9ClFOS



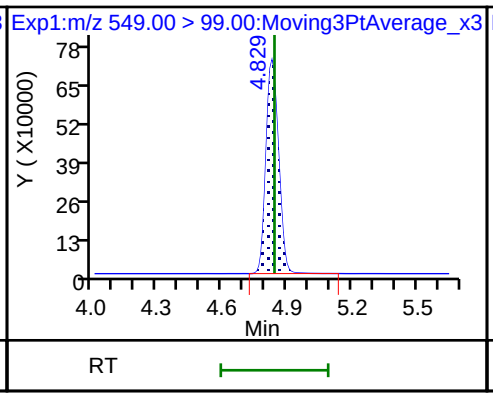
34 Perfluorooctanesulfonamide



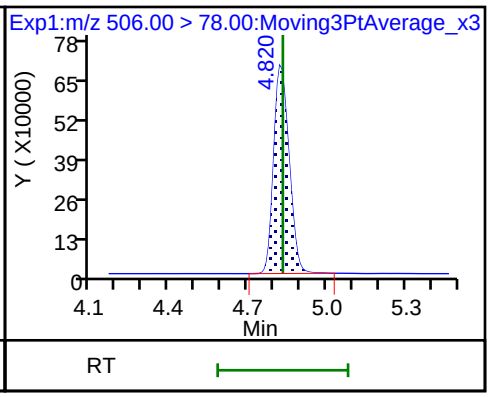
35 Perfluorononanesulfonic acid



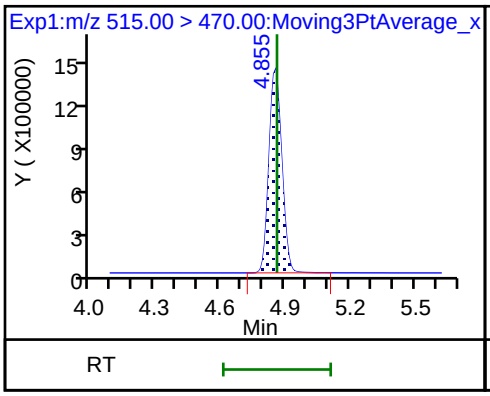
35 Perfluorononanesulfonic acid



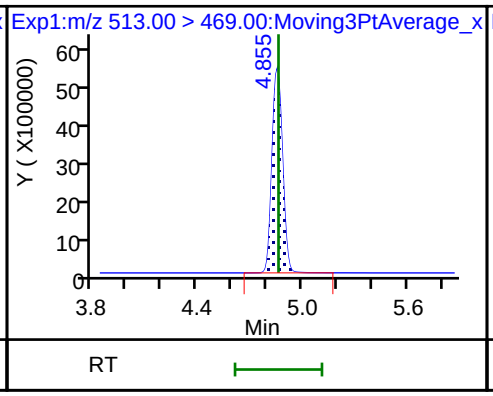
D 33 13C8 FOSA



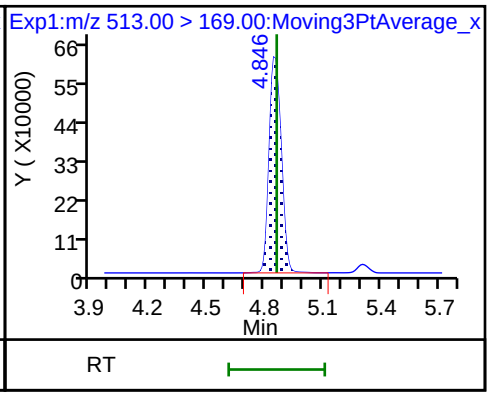
D 39 13C2 PFDA



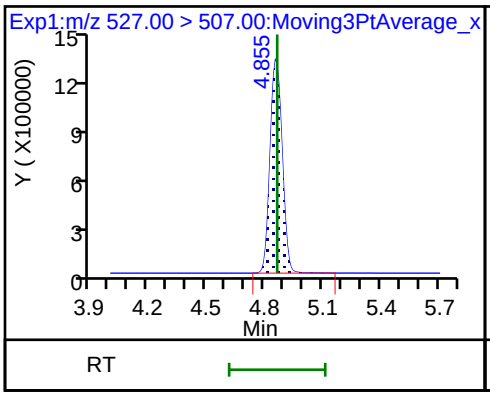
37 Perfluorodecanoic acid



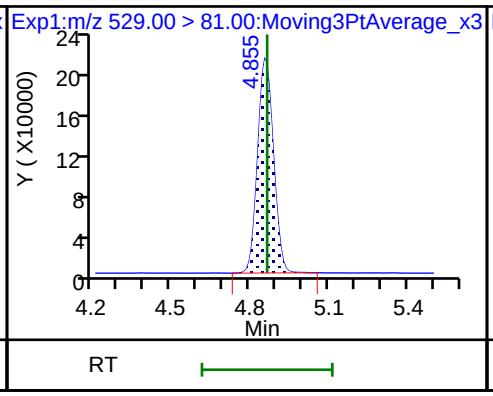
37 Perfluorodecanoic acid



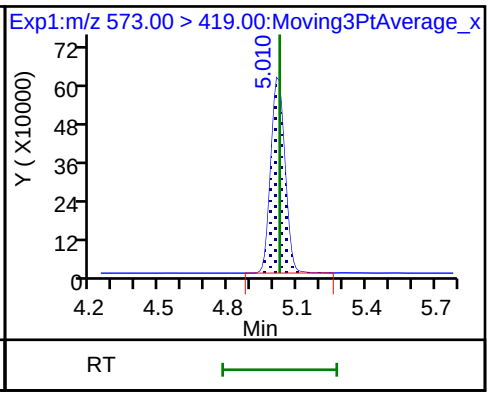
36 8:2 FTS



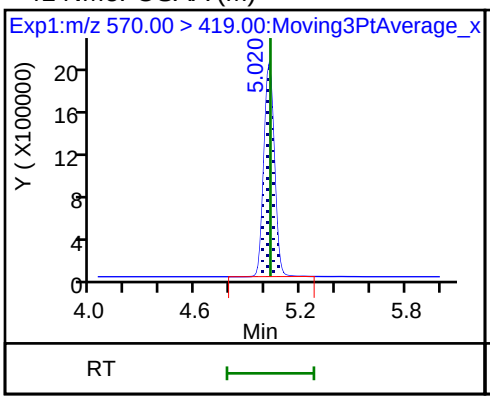
D 38 M2-8:2 FTS



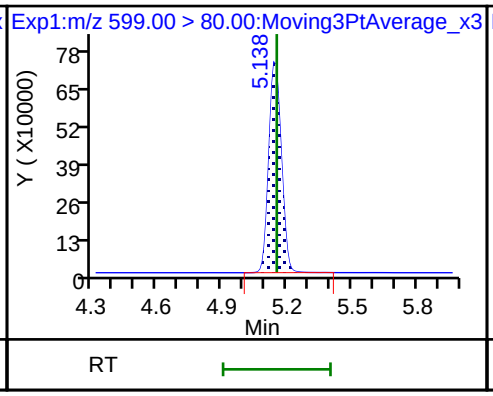
D 40 d3-NMeFOSAA



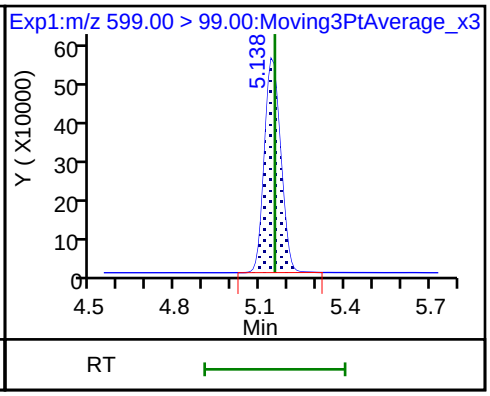
41 NMeFOSAA (M)



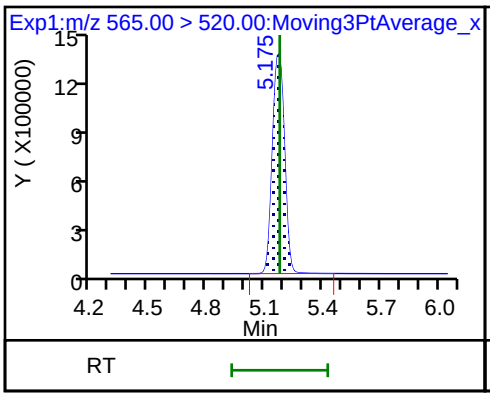
42 Perfluorodecanesulfonic acid



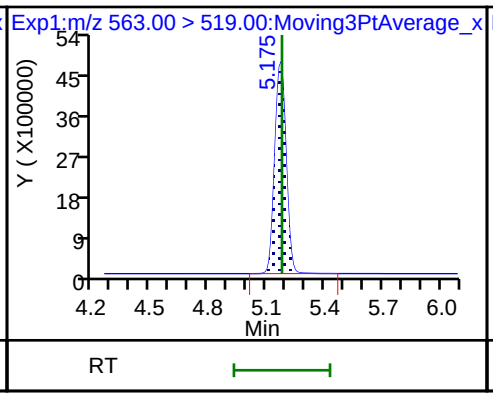
42 Perfluorodecanesulfonic acid



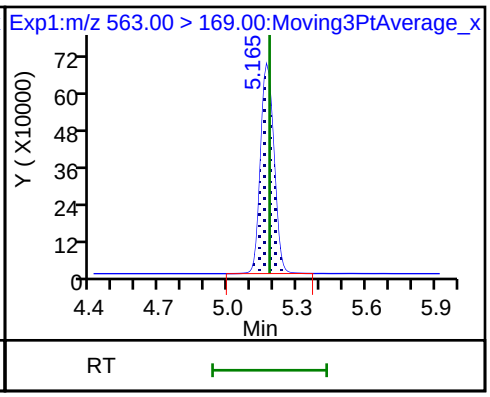
D 43 13C2 PFUnA



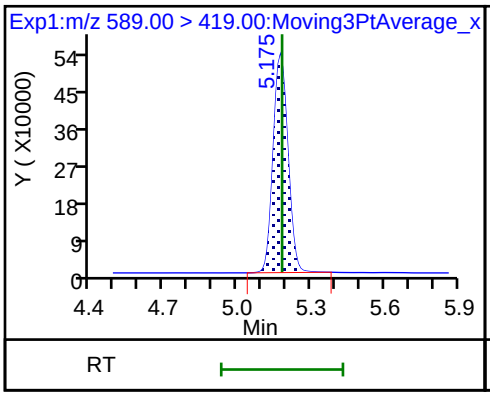
45 Perfluoroundecanoic acid



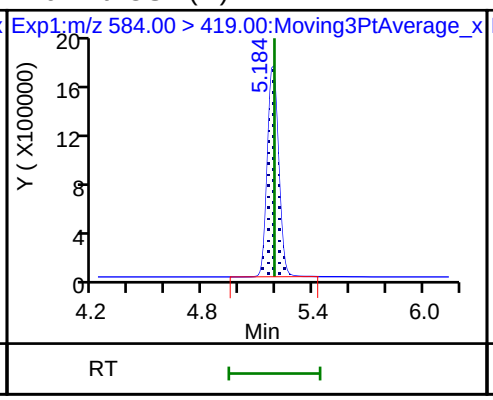
45 Perfluoroundecanoic acid



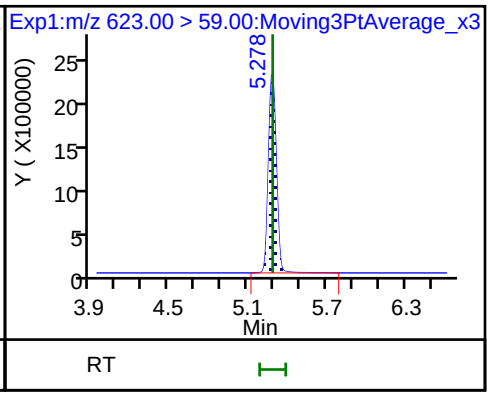
D 44 d5-NEtFOSAA



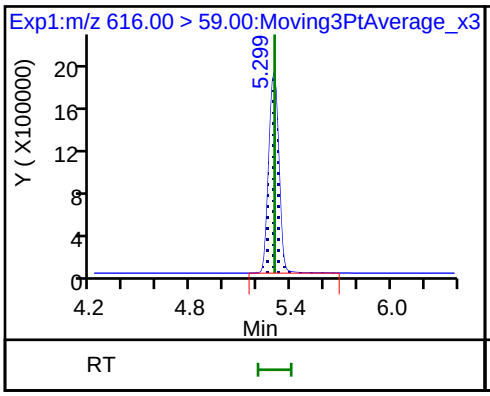
46 NEtFOSA (M)



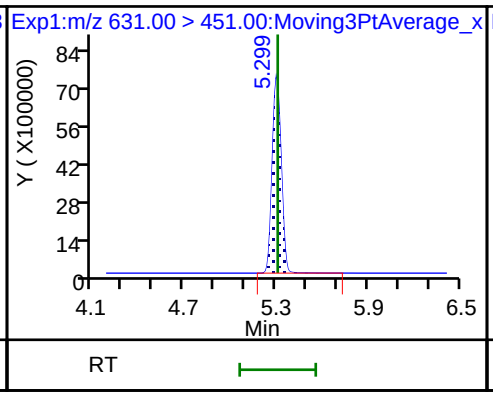
D 47 d7-N-MeFOSE-M



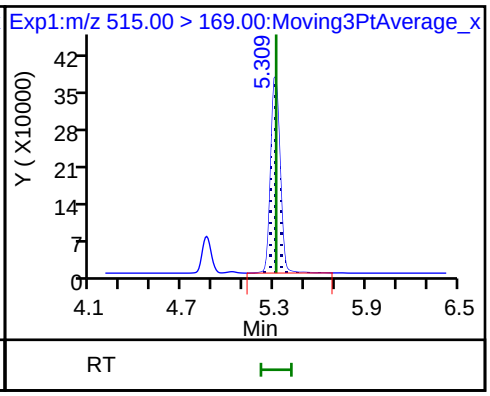
48 N-MeFOSE-M



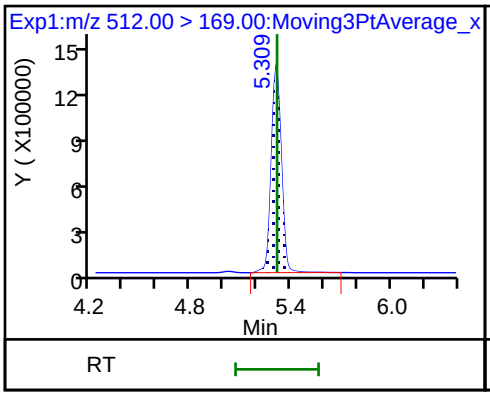
51 11ClFOS



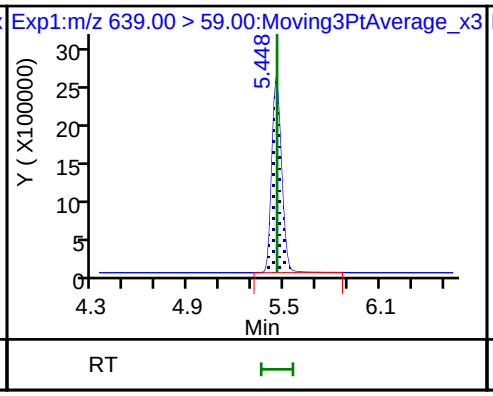
D 49 d-N-MeFOSA-M



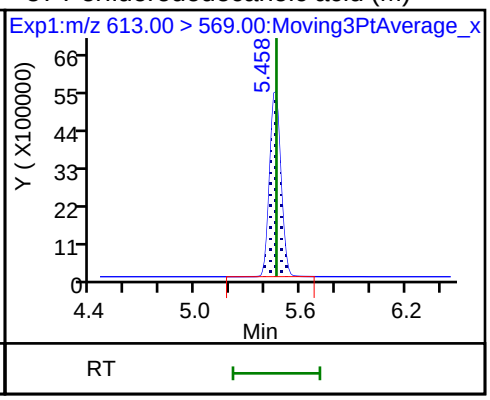
50 NMeFOSA



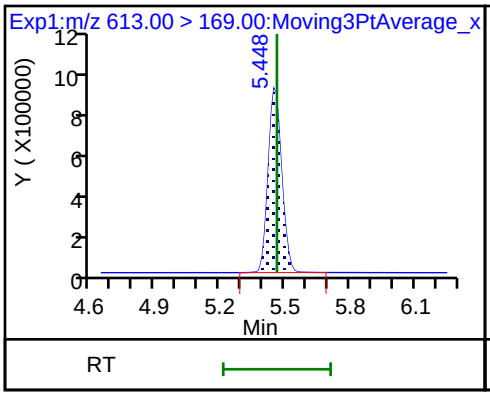
D 52 d9-N-EtFOSE-M



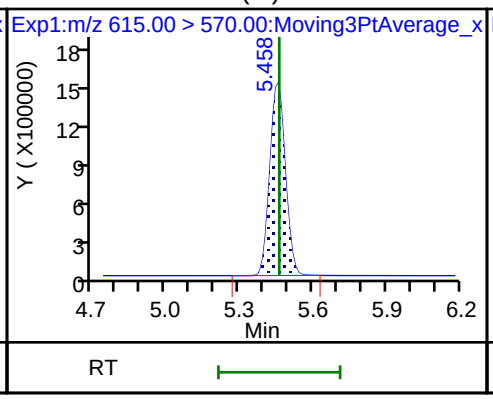
57 Perfluorododecanoic acid (M)



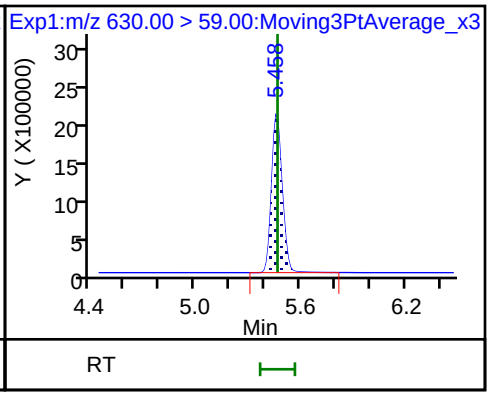
57 Perfluorododecanoic acid



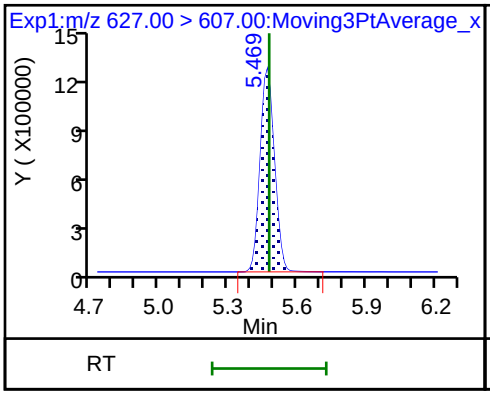
D 56 13C2 PFDoA (M)



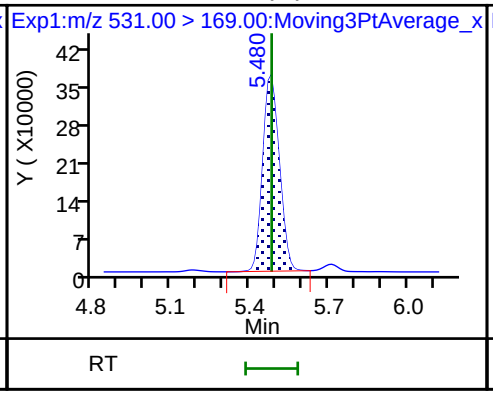
53 N-EtFOSE-M



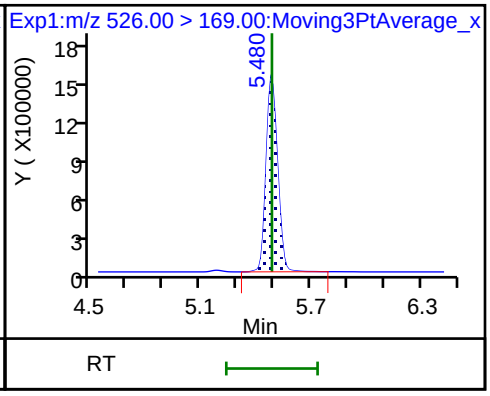
58 10:2 FTS



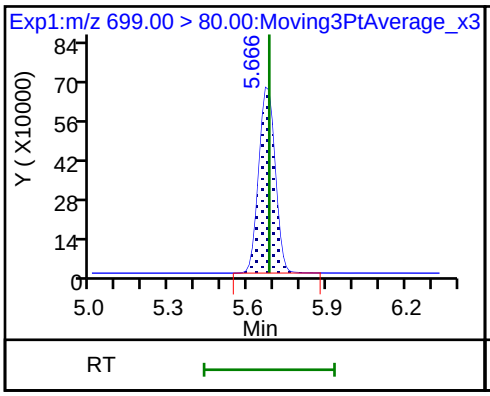
D 54 d-N-EtFOSA-M (M)



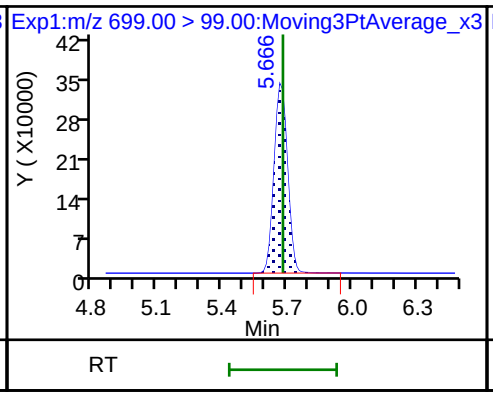
55 N-EtFOSA-M



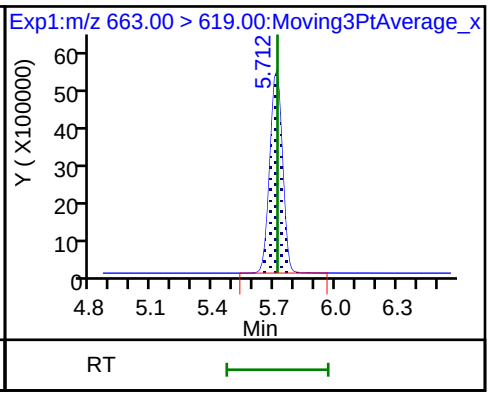
59 PFDoS



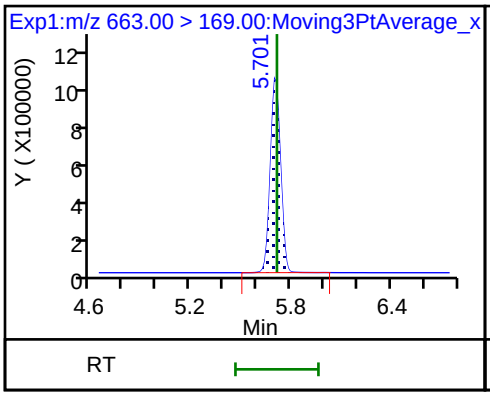
59 PFDoS



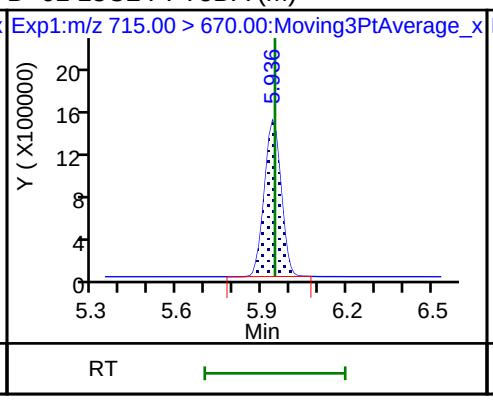
60 Perfluorotridecanoic acid



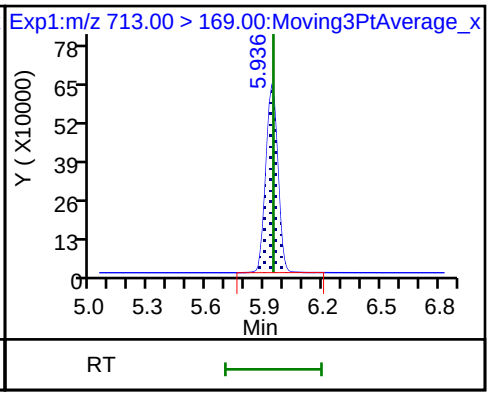
60 Perfluorotridecanoic acid



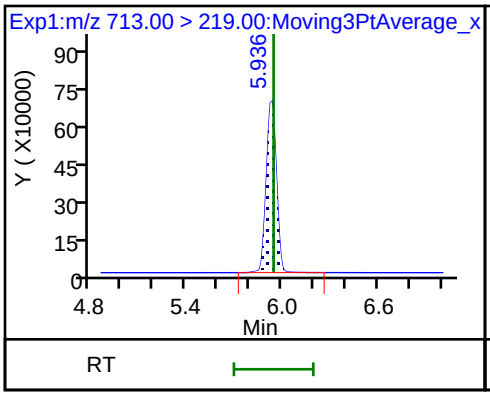
D 61 13C2 PFTeDA (M)



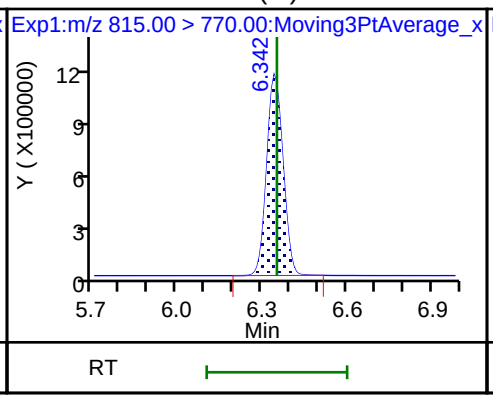
62 Perfluorotetradecanoic acid



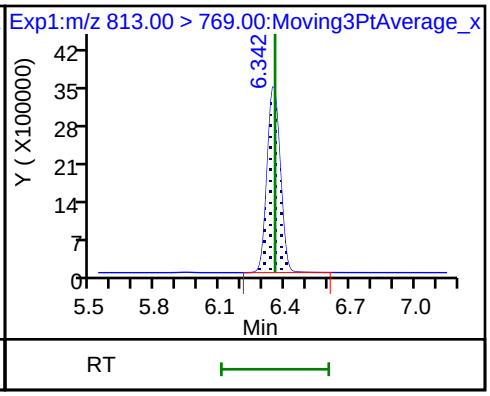
62 Perfluorotetradecanoic acid



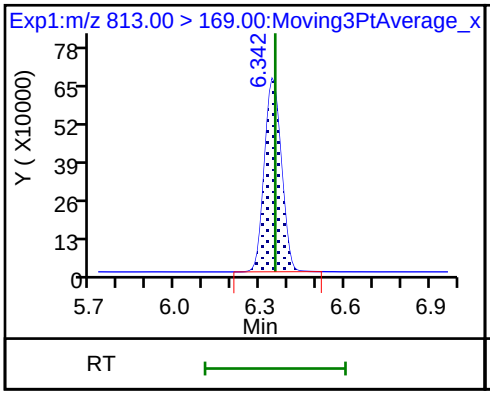
D 64 13C2 PFHxDA (M)



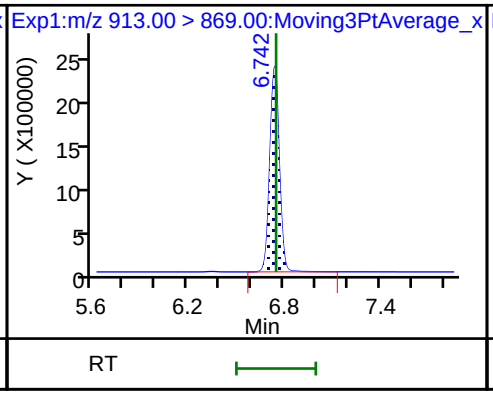
63 Perfluorohexadecanoic acid



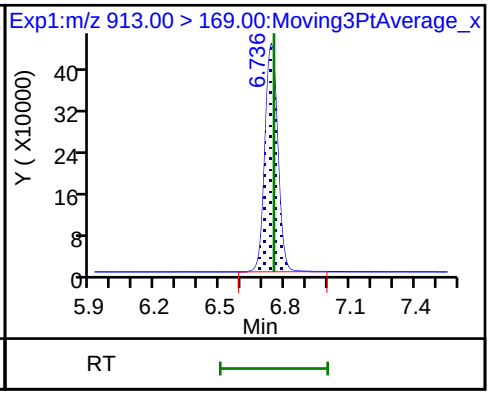
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

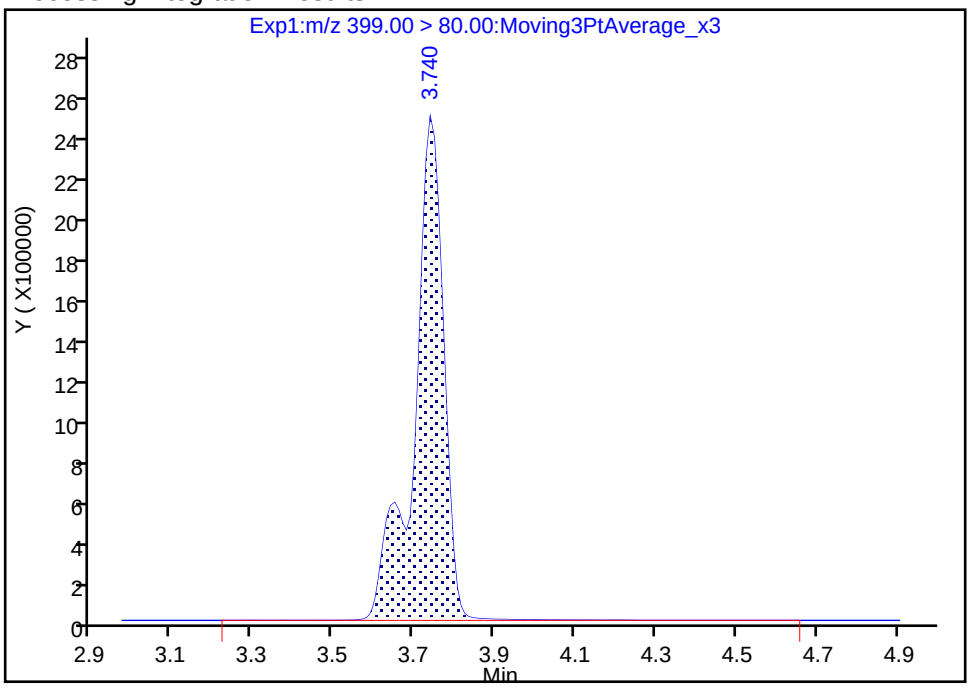
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d
Injection Date: 03-Jun-2020 21:52:32 Instrument ID: A18
Lims ID: IC STD 7
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

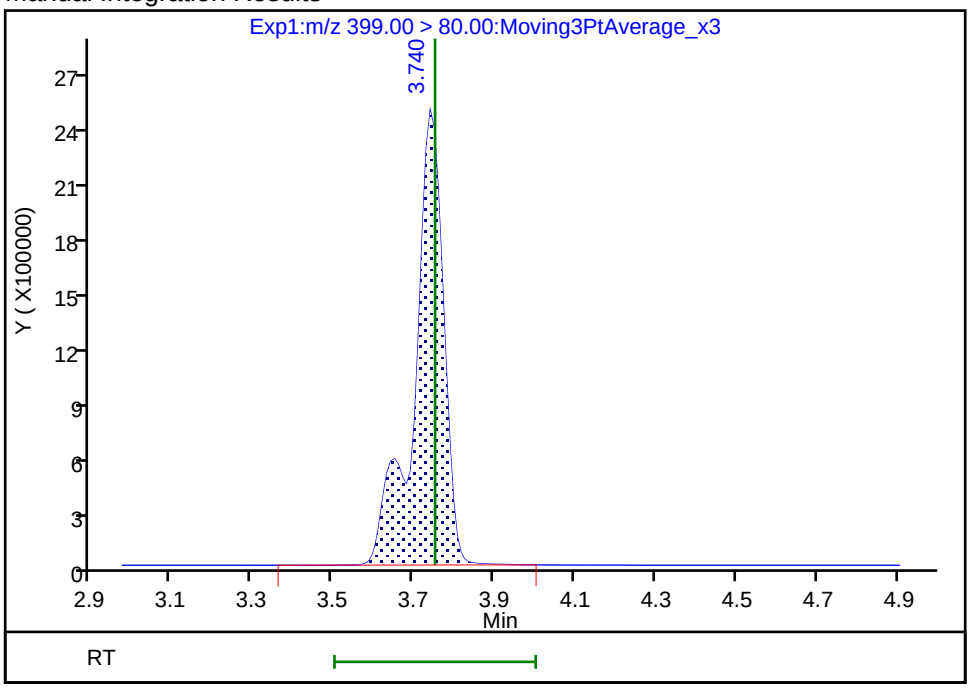
Processing Integration Results

RT: 3.74
Area: 12646064
Amount: 8.945962
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 12586480
Amount: 8.909707
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:51:03
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

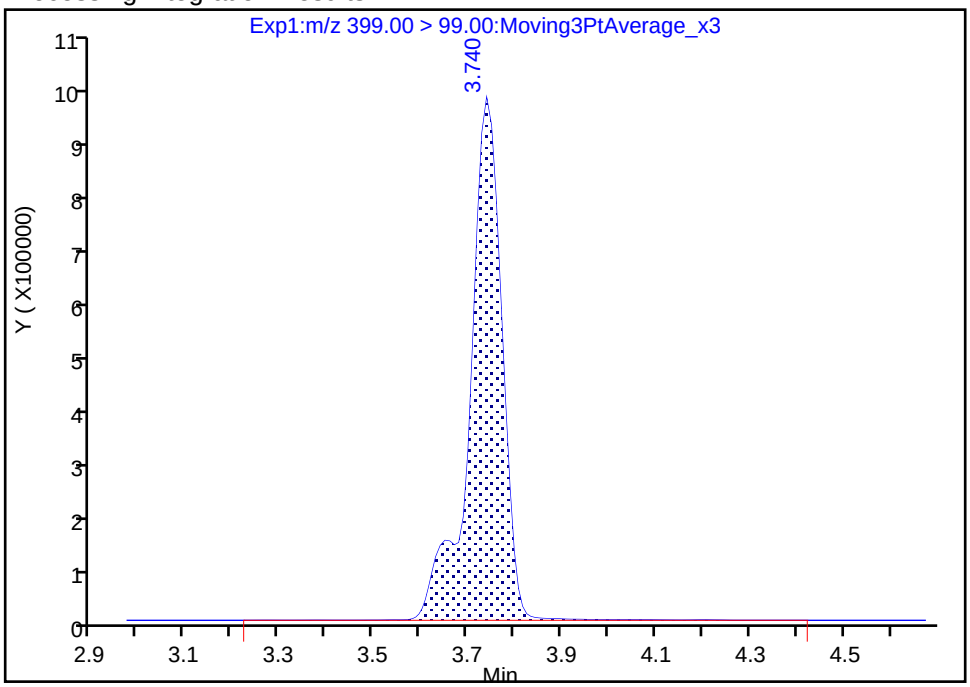
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d				
Injection Date:	03-Jun-2020 21:52:32	Instrument ID:	A18		
Lims ID:	IC STD 7				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

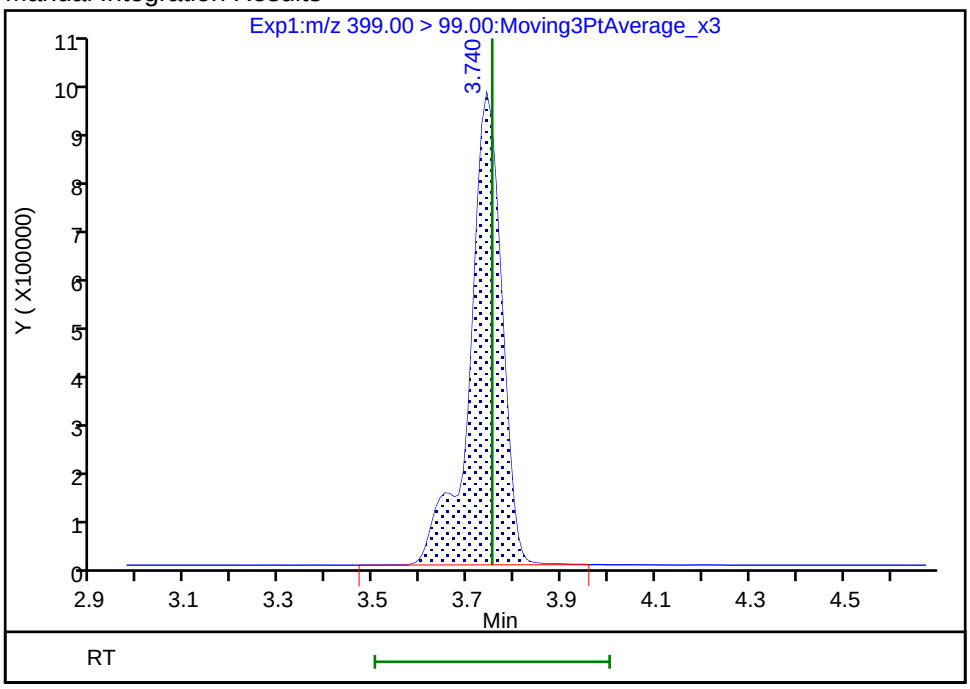
Processing Integration Results

RT: 3.74
Area: 4345462
Amount: 8.945962
Amount Units: ng/ml



Manual Integration Results

RT: 3.74
Area: 4317598
Amount: 8.909707
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:51:07
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

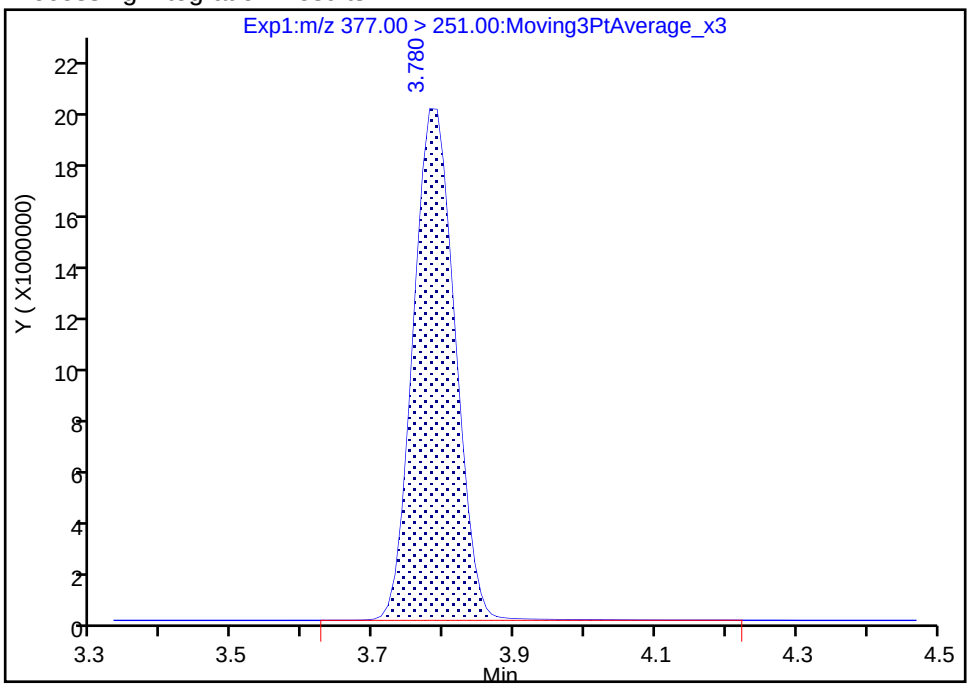
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d				
Injection Date:	03-Jun-2020 21:52:32	Instrument ID:	A18		
Lims ID:	IC STD 7				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

19 DONA, CAS: 919005-14-4

Signal: 1

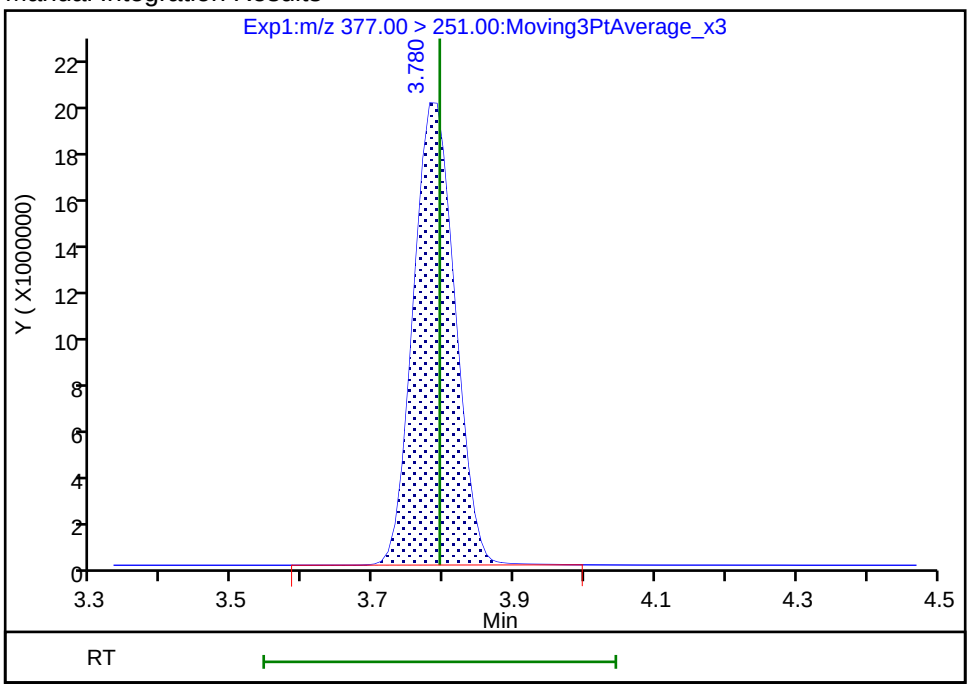
Processing Integration Results

RT: 3.78
Area: 82746226
Amount: 9.819655
Amount Units: ng/ml



Manual Integration Results

RT: 3.78
Area: 82476142
Amount: 9.792363
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:51:16
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

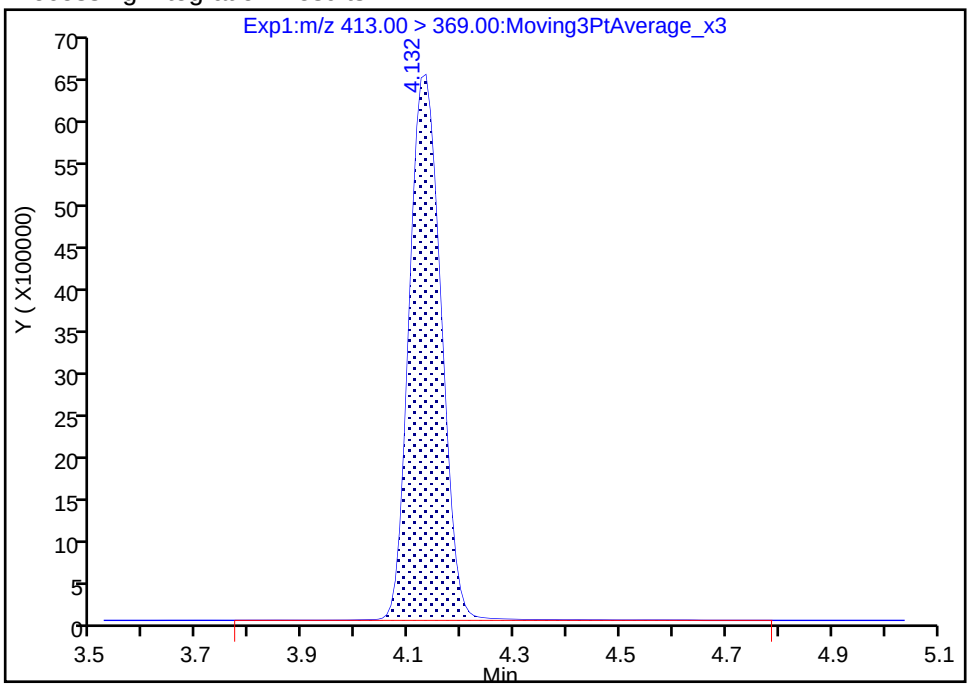
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d
Injection Date: 03-Jun-2020 21:52:32 Instrument ID: A18
Lims ID: IC STD 7
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

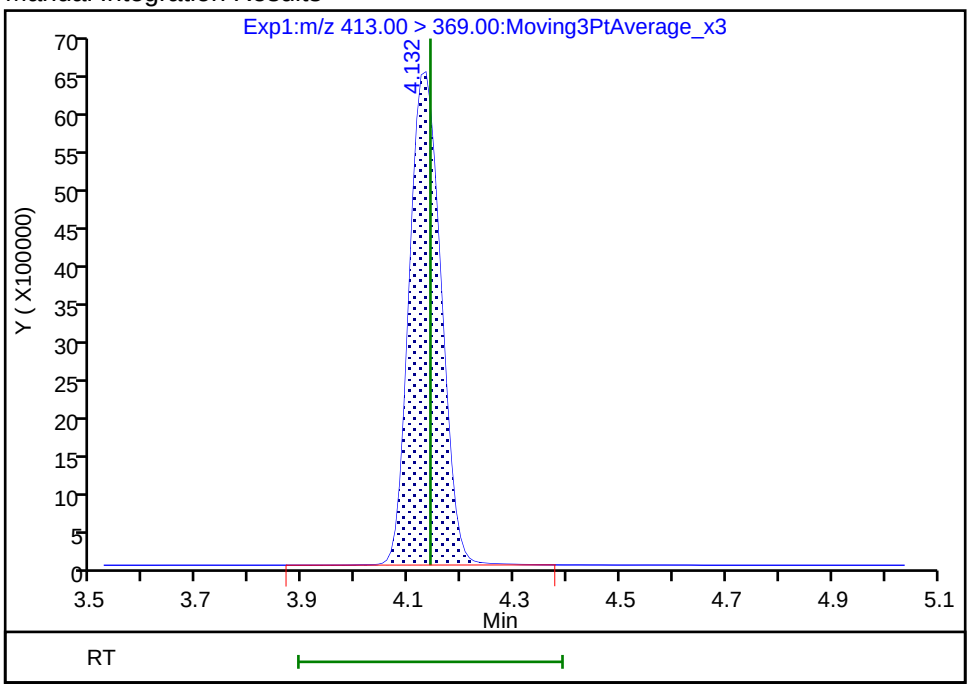
RT: 4.13
Area: 26882341
Amount: 9.071911
Amount Units: ng/ml

Processing Integration Results



RT: 4.13
Area: 26753293
Amount: 9.033982
Amount Units: ng/ml

Manual Integration Results



Reviewer: duranl, 04-Jun-2020 09:51:22
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

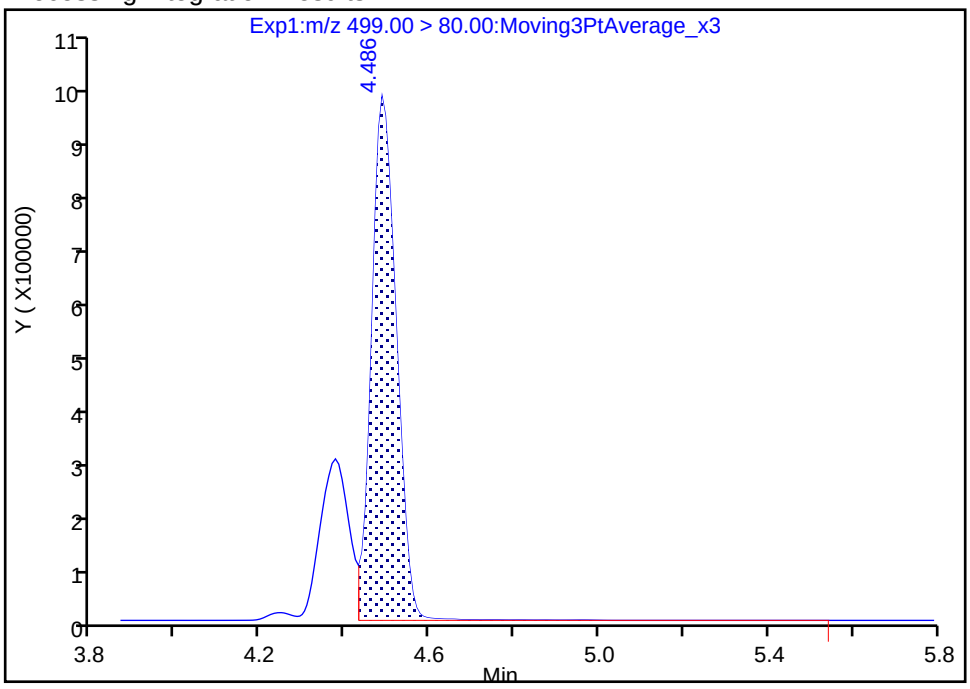
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d
Injection Date: 03-Jun-2020 21:52:32 Instrument ID: A18
Lims ID: IC STD 7
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

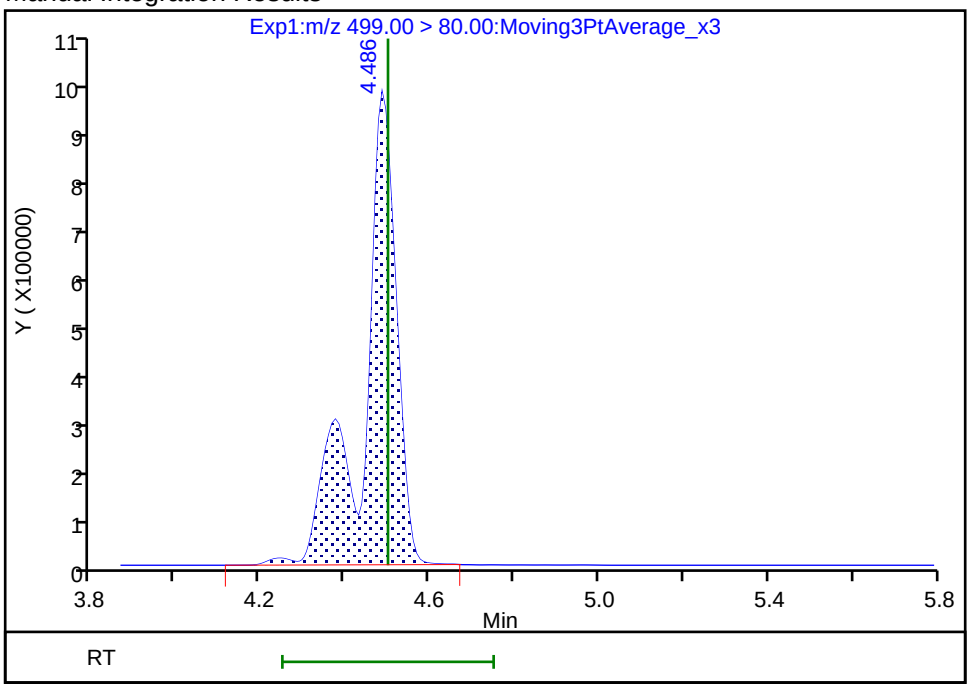
Processing Integration Results

RT: 4.49
Area: 3806523
Amount: 7.424934
Amount Units: ng/ml



Manual Integration Results

RT: 4.49
Area: 5196576
Amount: 9.730210
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 06:03:24
Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

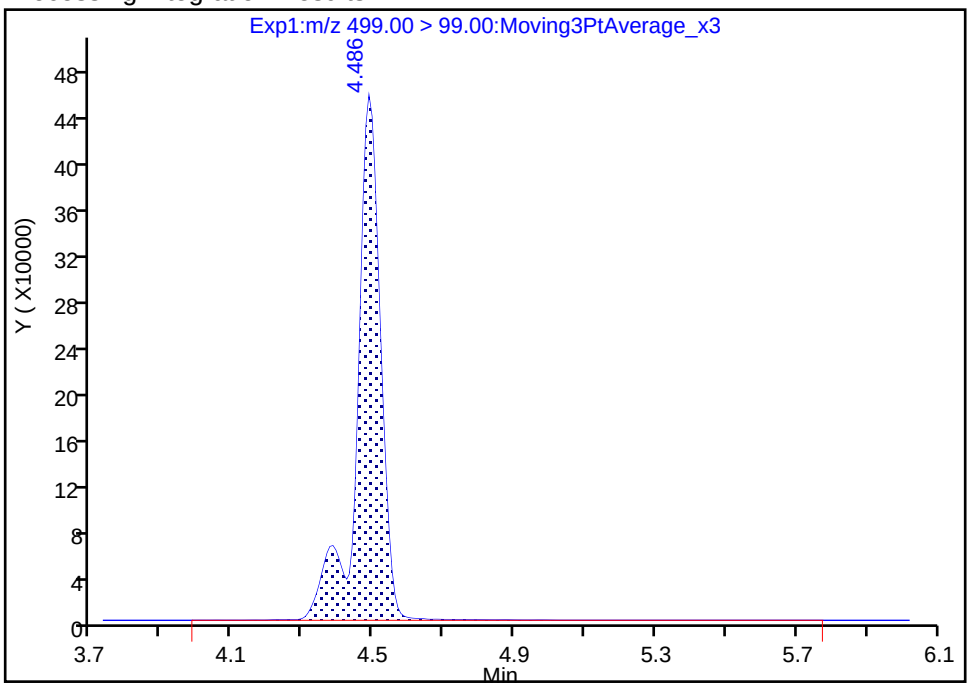
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d
Injection Date: 03-Jun-2020 21:52:32 Instrument ID: A18
Lims ID: IC STD 7
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

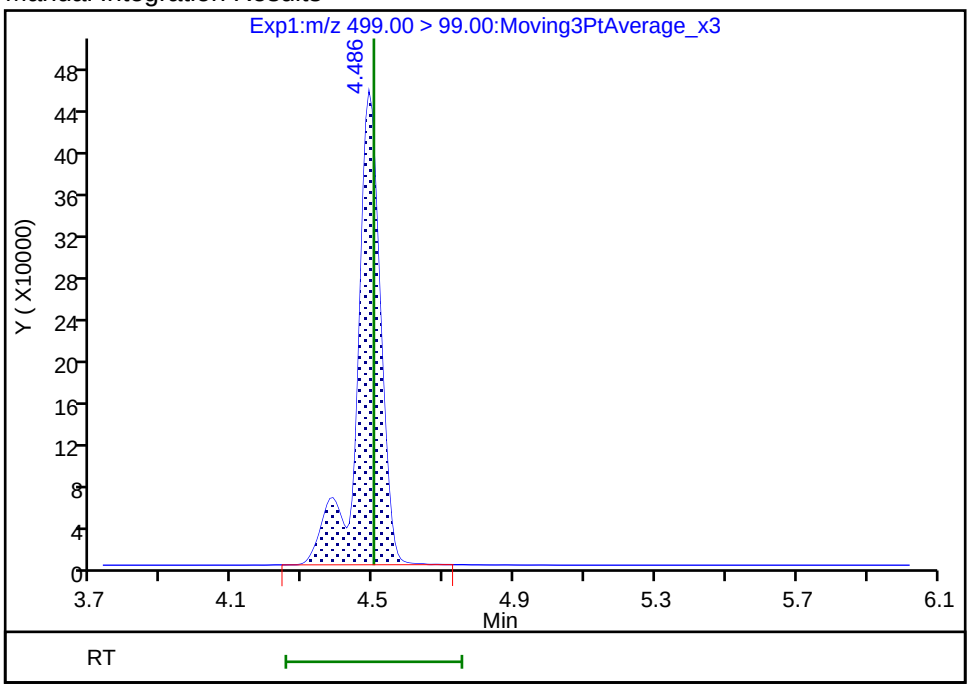
Processing Integration Results

RT: 4.49
Area: 2125132
Amount: 7.424934
Amount Units: ng/ml



Manual Integration Results

RT: 4.49
Area: 2107900
Amount: 9.730210
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:51:28
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

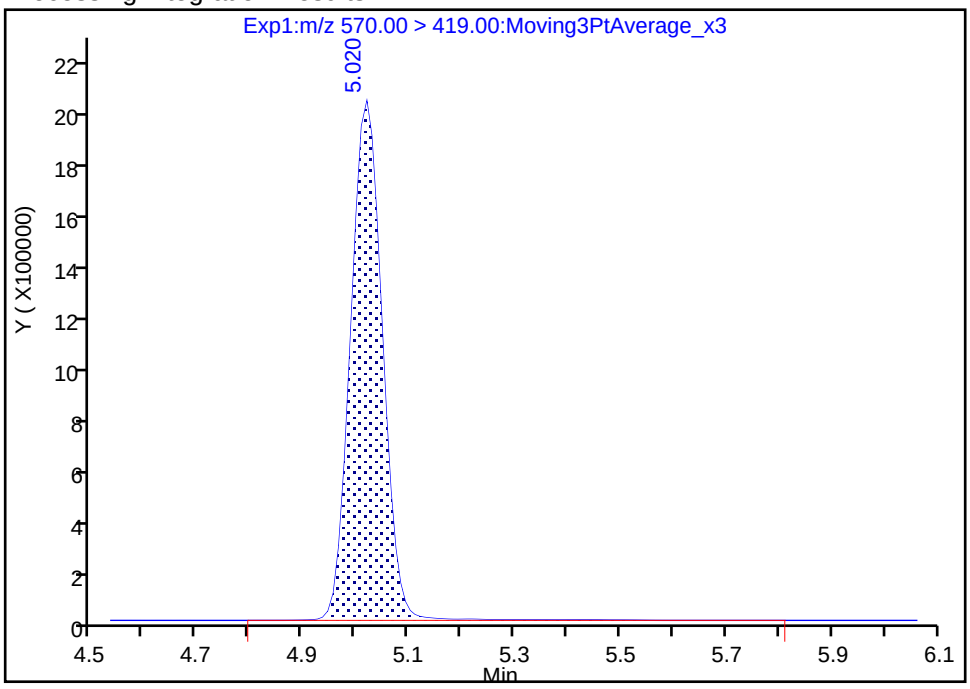
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d				
Injection Date:	03-Jun-2020 21:52:32	Instrument ID:	A18		
Lims ID:	IC STD 7				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 NMeFOSAA, CAS: 2355-31-9

Signal: 1

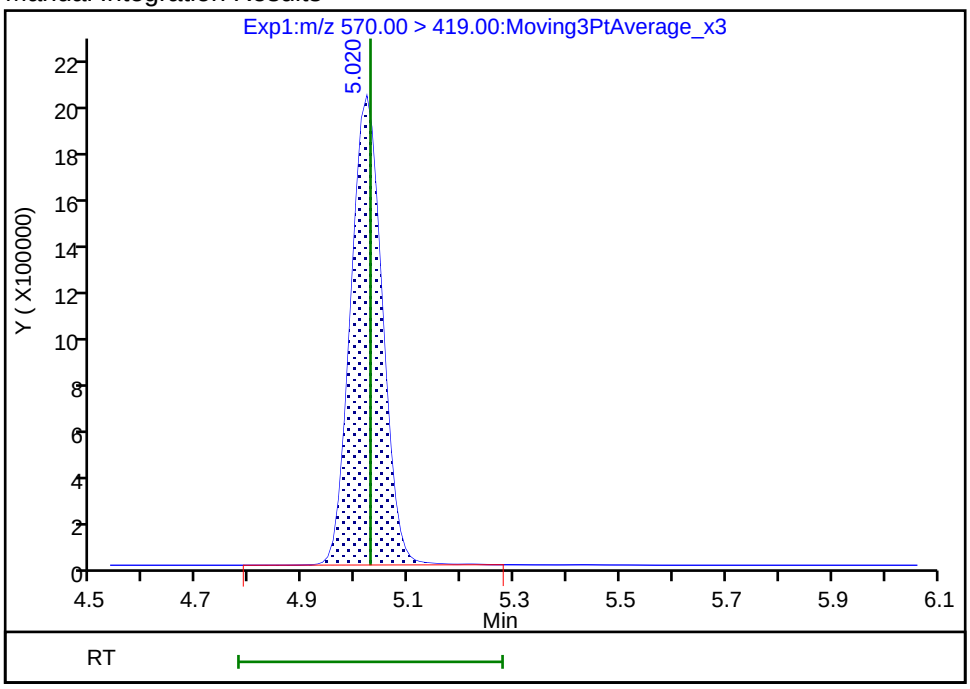
Processing Integration Results

RT: 5.02
Area: 8464506
Amount: 11.476479
Amount Units: ng/ml



Manual Integration Results

RT: 5.02
Area: 8405563
Amount: 11.409588
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:51:38
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

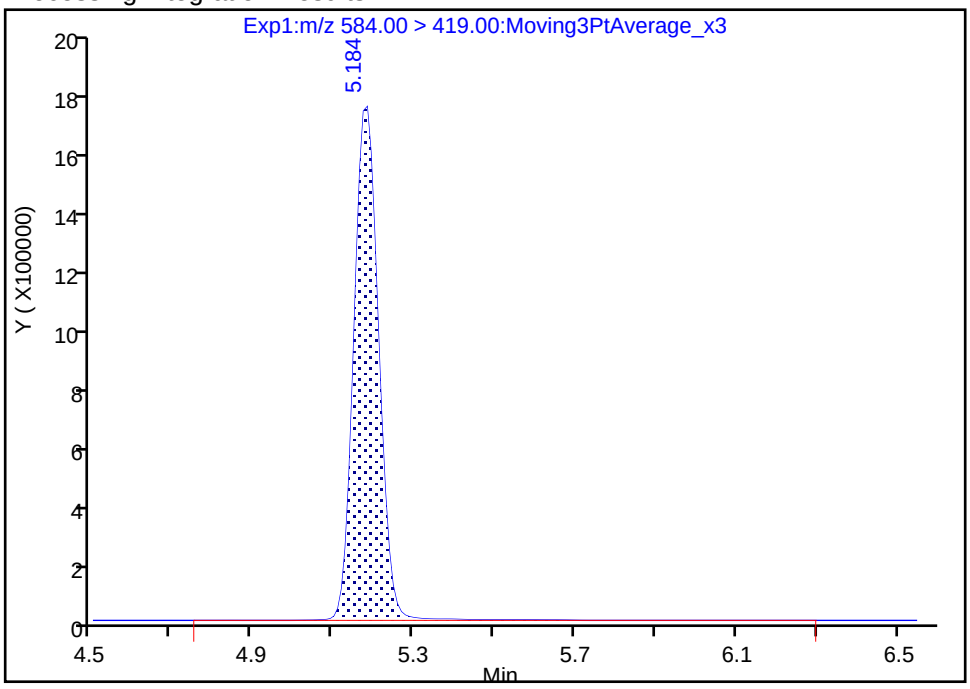
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d				
Injection Date:	03-Jun-2020 21:52:32	Instrument ID:	A18		
Lims ID:	IC STD 7				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

46 NEtFOSA, CAS: 2991-50-6

Signal: 1

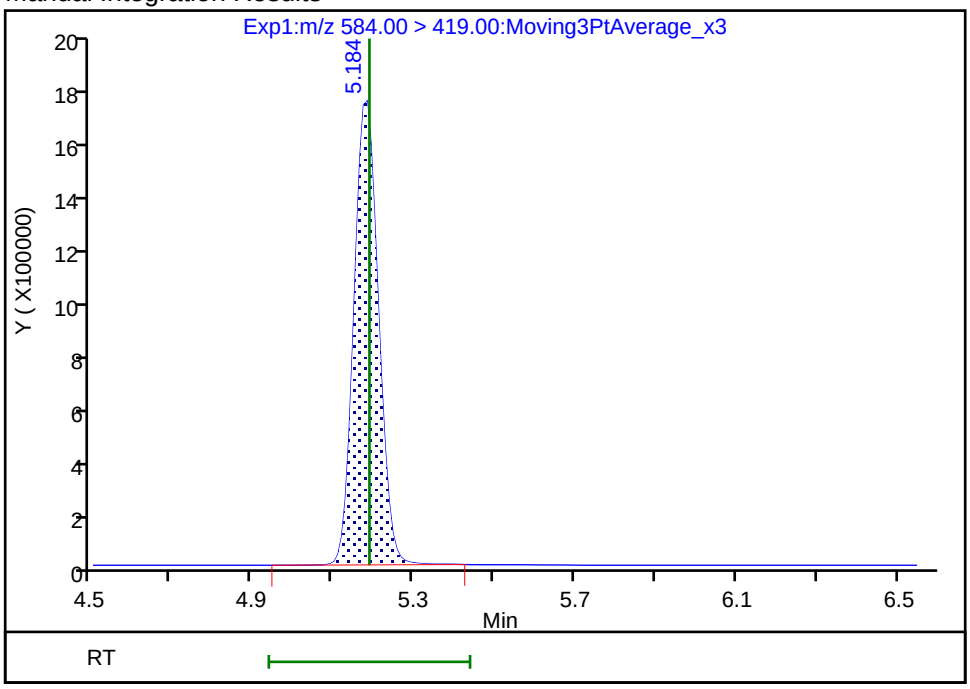
Processing Integration Results

RT: 5.18
Area: 7309803
Amount: 11.557091
Amount Units: ng/ml



Manual Integration Results

RT: 5.18
Area: 7245516
Amount: 11.472108
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:51:47
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

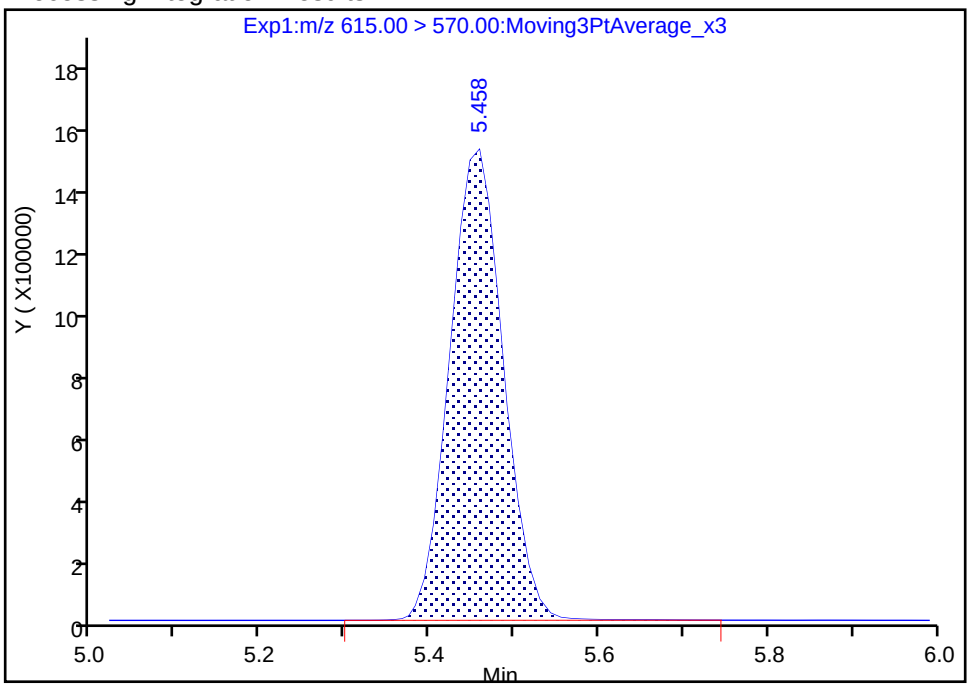
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d
Injection Date: 03-Jun-2020 21:52:32 Instrument ID: A18
Lims ID: IC STD 7
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

D 56 13C2 PFDoA, CAS: STL00998

Signal: 1

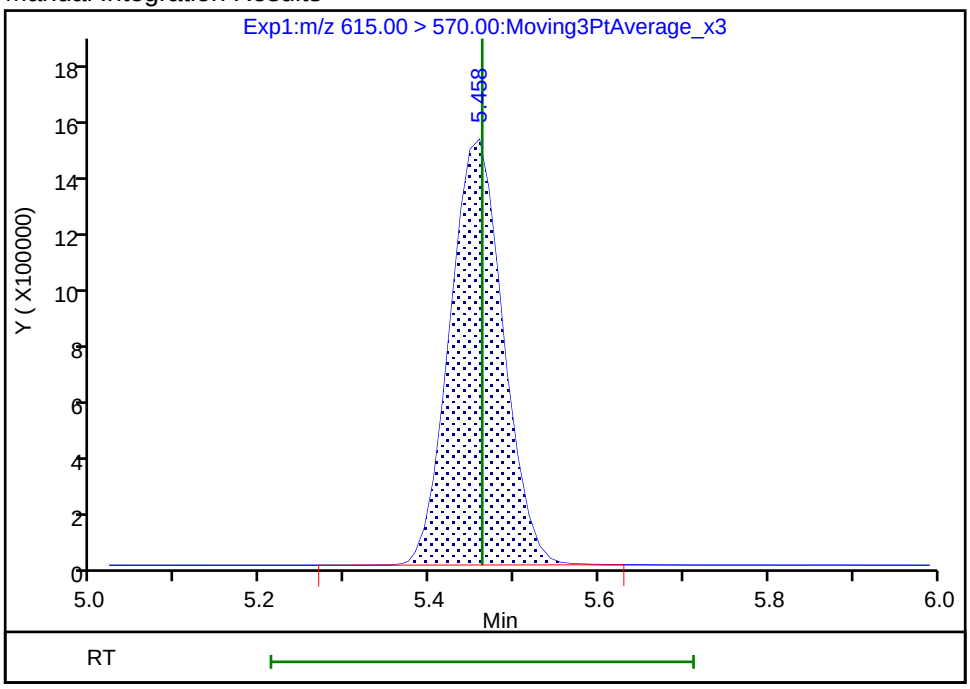
Processing Integration Results

RT: 5.46
Area: 6425005
Amount: 2.508960
Amount Units: ng/ml



Manual Integration Results

RT: 5.46
Area: 6408321
Amount: 2.503376
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 10:14:53
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

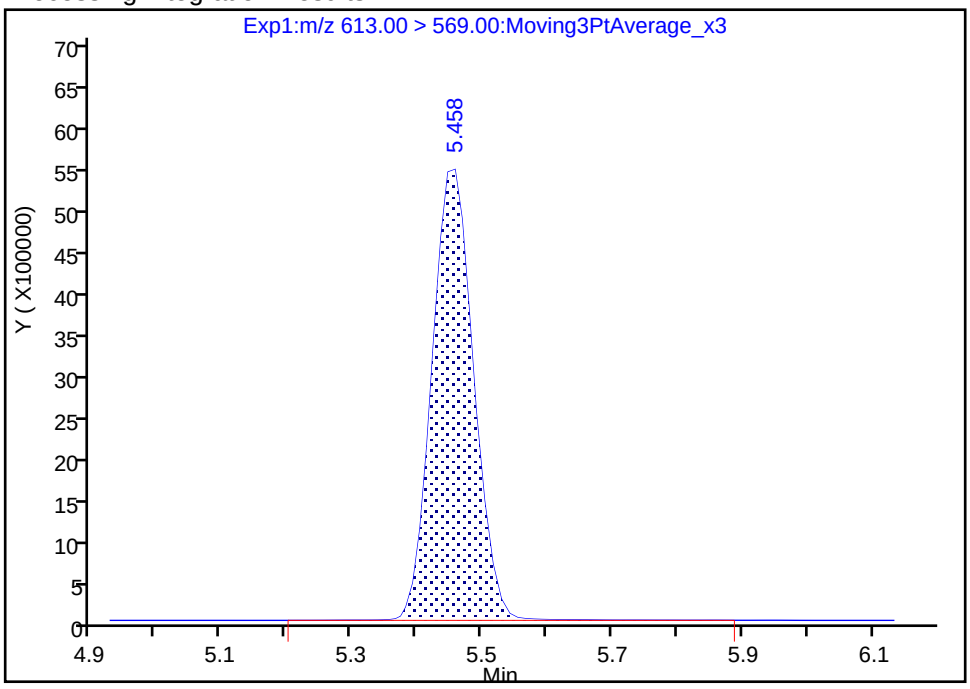
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d				
Injection Date:	03-Jun-2020 21:52:32	Instrument ID:	A18		
Lims ID:	IC STD 7				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

57 Perfluorododecanoic acid, CAS: 307-55-1

Signal: 1

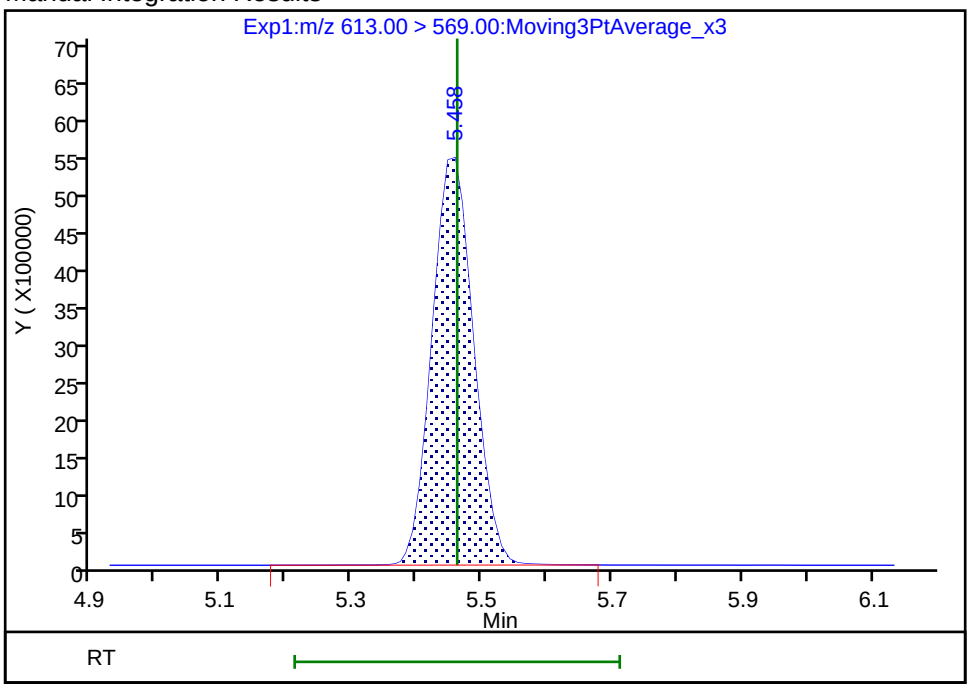
Processing Integration Results

RT: 5.46
Area: 24382956
Amount: 10.186412
Amount Units: ng/ml



Manual Integration Results

RT: 5.46
Area: 24303897
Amount: 10.180777
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 09:51:56
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

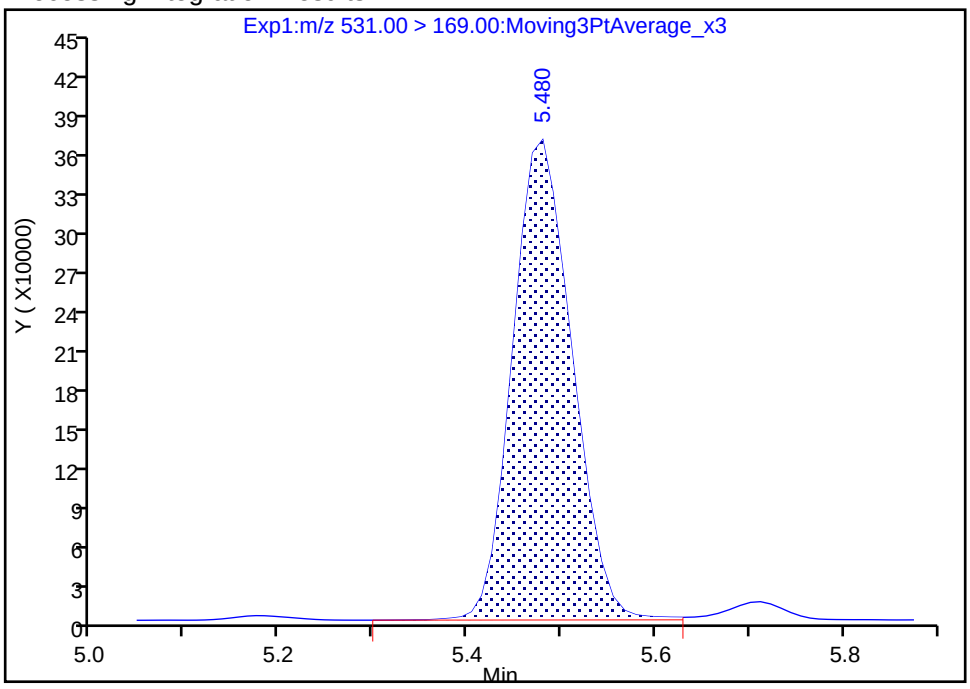
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d
Injection Date: 03-Jun-2020 21:52:32 Instrument ID: A18
Lims ID: IC STD 7
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

D 54 d-N-EtFOSA-M, CAS: STL02282

Signal: 1

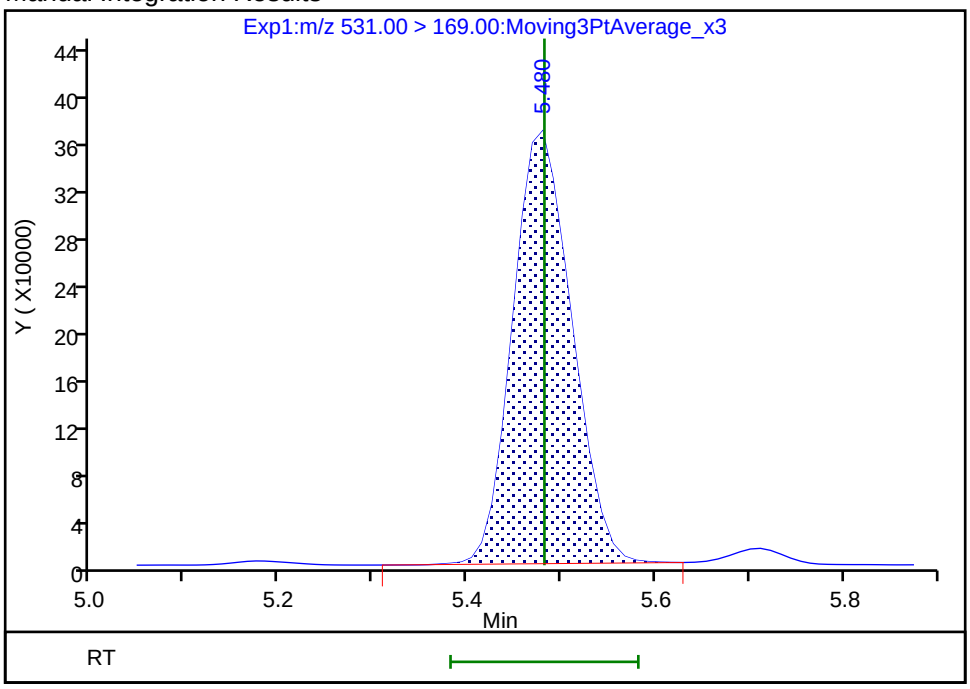
Processing Integration Results

RT: 5.48
Area: 1596861
Amount: 2.828374
Amount Units: ng/ml



Manual Integration Results

RT: 5.48
Area: 1578747
Amount: 2.801426
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 10:14:58
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

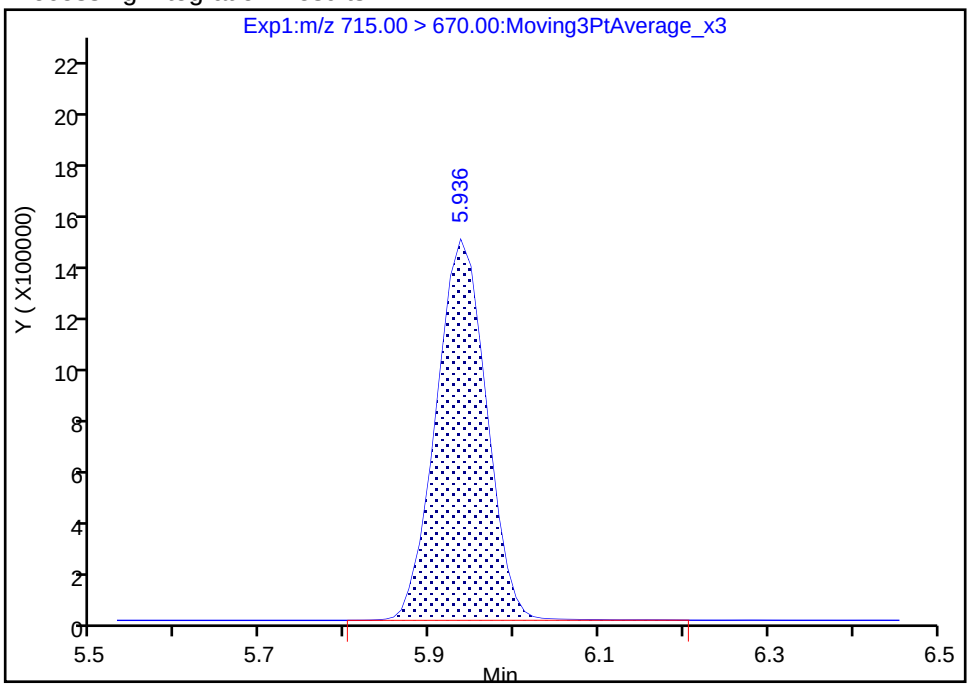
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d
Injection Date: 03-Jun-2020 21:52:32 Instrument ID: A18
Lims ID: IC STD 7
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 8 Worklist Smp#: 9
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

D 61 13C2 PFTeDA, CAS: STL02116

Signal: 1

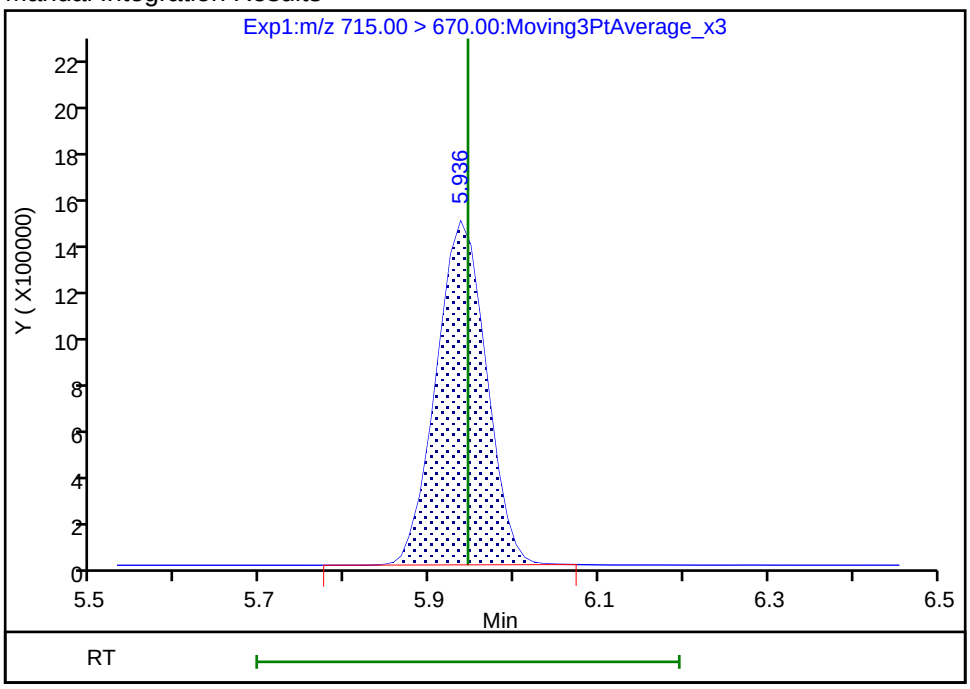
Processing Integration Results

RT: 5.94
Area: 6162160
Amount: 2.875222
Amount Units: ng/ml



Manual Integration Results

RT: 5.94
Area: 6132618
Amount: 2.863694
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 10:15:02
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

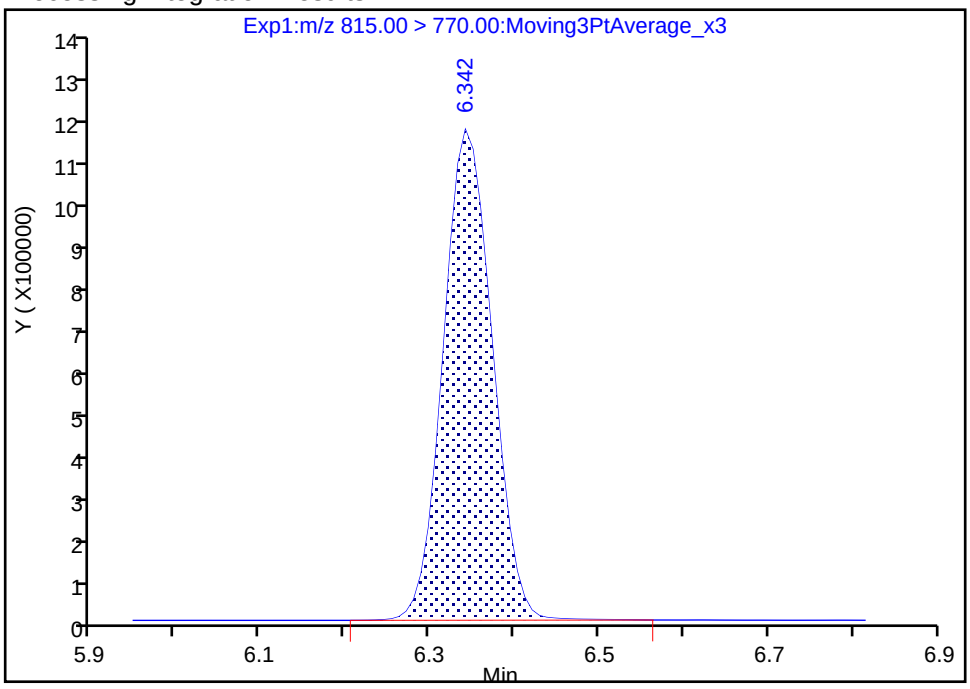
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d				
Injection Date:	03-Jun-2020 21:52:32	Instrument ID:	A18		
Lims ID:	IC STD 7				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	8	Worklist Smp#:	9
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

D 64 13C2 PFHxDA, CAS: STL02115

Signal: 1

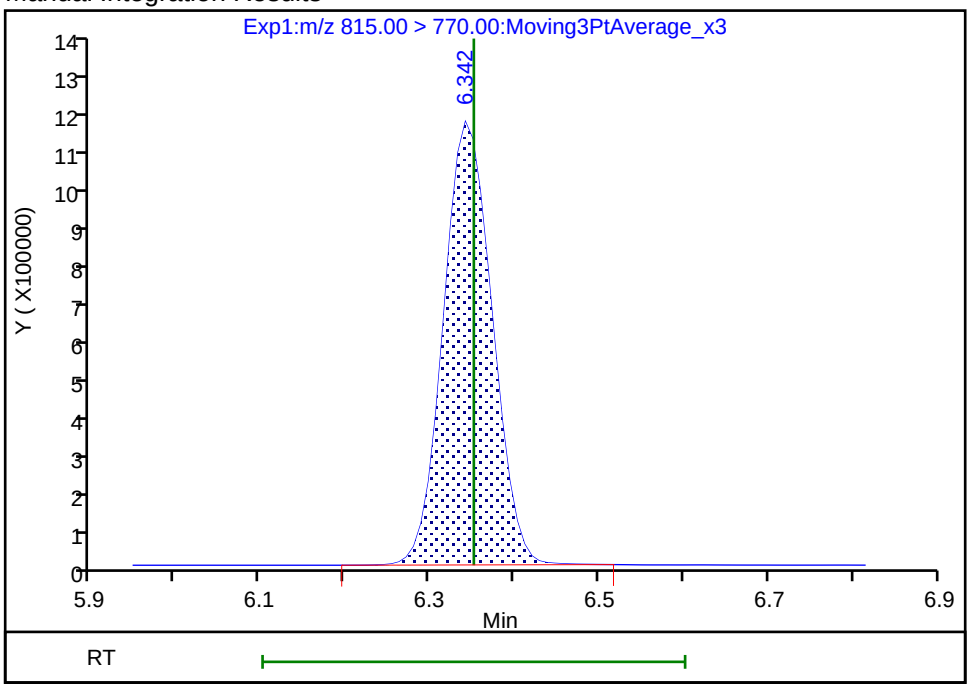
Processing Integration Results

RT: 6.34
Area: 4434245
Amount: 2.922407
Amount Units: ng/ml



Manual Integration Results

RT: 6.34
Area: 4424010
Amount: 2.916786
Amount Units: ng/ml



Reviewer: duranl, 04-Jun-2020 10:15:09

Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: ICV 320-383313/10 Calibration Date: 06/04/2020 13:09

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_ICAL_A_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9260	0.9740		2.63	2.50	5.2	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.007	0.9613		2.39	2.50	-4.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9749	1.056		2.71	2.50	8.3	50.0
4:2 FTS	AveID	2.255	2.459		2.55	2.34	9.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9375	1.046		2.79	2.50	11.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7335	0.7115		2.27	2.35	-3.0	50.0
HFPO-DA (GenX)	AveID	0.9134	0.999		2.73	2.50	9.4	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.011	0.9846		2.44	2.50	-2.6	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.123	1.081		2.41	2.50	-3.8	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	7.331	8.277		2.82	2.50	12.9	50.0
6:2 FTS	AveID	1.966	2.202		2.66	2.37	12.0	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.091	1.057		2.31	2.38	-3.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.057	1.040		2.46	2.50	-1.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9894	0.9761		2.47	2.50	-1.3	40.0
Perfluorononanoic acid (PFNA)	AveID	1.014	1.085		2.68	2.50	7.0	40.0
F-53B Major	AveID	2.729	2.882		2.64	2.50	5.6	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7987	0.7619		2.29	2.40	-4.6	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.8783	0.8377		2.38	2.50	-4.6	40.0
8:2 FTS	AveID	1.631	1.721		2.53	2.40	5.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9658	1.042		2.70	2.50	7.9	40.0
NMeFOSAA	AveID	0.7297	0.7824		2.68	2.50	7.2	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7009	0.6703		2.30	2.41	-4.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7214	0.8447		2.93	2.50	17.1	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.7067	0.7447		2.63	2.50	5.4	40.0
F-53B Minor	AveID	2.579	2.753		2.67	2.50	6.7	50.0
NMeFOSE	AveID	1.047	1.060		2.53	2.50	1.2	40.0
NMeFOSA	AveID	0.9416	1.023		2.72	2.50	8.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9816	0.8977		2.29	2.50	-8.5	40.0
10:2 FTS	AveID	1.287	1.408		2.64	2.41	9.4	50.0
NEtFOSE	AveID	1.024	0.9307		2.27	2.50	-9.1	40.0
NEtFOSA	AveID	1.002	1.050		2.62	2.50	4.8	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2435	0.2471		2.46	2.42	1.5	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

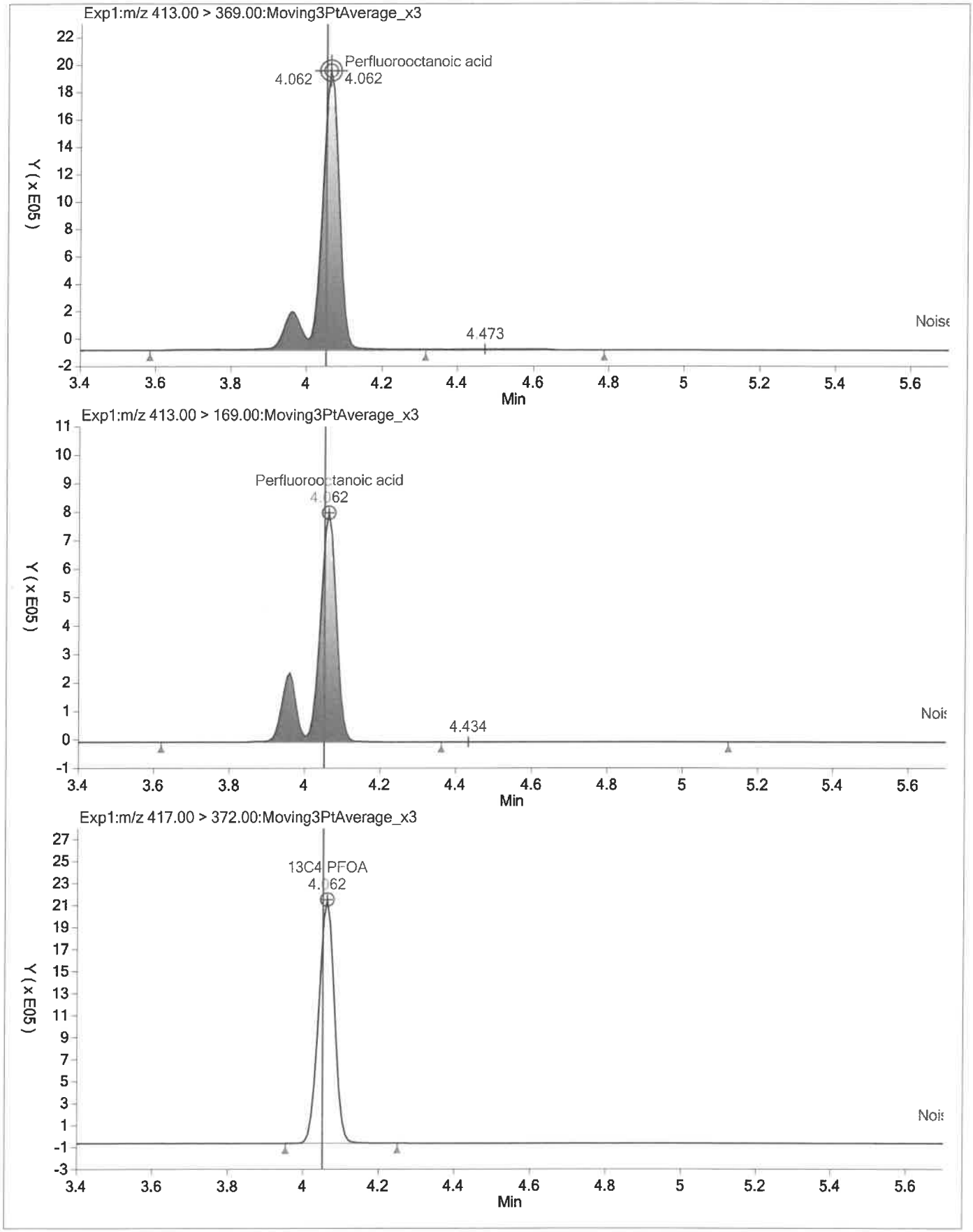
Lab Sample ID: ICV 320-383313/10 Calibration Date: 06/04/2020 13:09

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.04_A15_PFC_ICAL_A_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7891	0.7630		2.42	2.50	-3.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.000	1.039		2.60	2.50	3.8	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8009		2.33	2.50	-6.9	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4920	0.4512		2.29	2.50	-8.3	50.0
13C4 PFBA	Ave	1.583	1.607		2.54	2.50	1.5	50.0
13C5 PFPeA	Ave	1.414	1.432		2.53	2.50	1.3	50.0
13C3 PFBS	Ave	0.9803	1.004		2.38	2.33	2.4	50.0
M2-4:2 FTS	Ave	0.1305	0.1300		2.33	2.34	-0.4	50.0
13C2 PFHxA	Ave	1.374	1.372		2.50	2.50	-0.1	50.0
13C3 HFPO-DA	Ave	0.3145	0.3361		2.67	2.50	6.9	50.0
13C4 PFHpA	Ave	1.090	1.133		2.60	2.50	4.0	50.0
18O2 PFHxS	Ave	0.4715	0.4933		2.47	2.37	4.6	50.0
M2-6:2 FTS	Ave	0.1440	0.1492		2.46	2.38	3.6	50.0
13C4 PFOA	Ave	0.9856	1.067		2.71	2.50	8.2	50.0
13C4 PFOS	Ave	0.3660	0.3750		2.45	2.39	2.5	50.0
13C5 PFNA	Ave	0.7544	0.8415		2.79	2.50	11.6	50.0
13C8 FOSA	Ave	0.7278	0.7315		2.51	2.50	0.5	50.0
13C2 PFDA	Ave	0.7192	0.7442		2.59	2.50	3.5	50.0
M2-8:2 FTS	Ave	0.1717	0.1705		2.38	2.40	-0.7	50.0
d3-NMeFOSAA	Ave	0.2685	0.2702		2.52	2.50	0.6	50.0
13C2 PFUnA	Ave	0.6132	0.6177		2.52	2.50	0.7	50.0
d5-NEtFOSAA	Ave	0.2733	0.2778		2.54	2.50	1.6	50.0
d7-N-MeFOSE-M	Ave	0.1833	0.1918		13.1	12.5	4.6	50.0
d-N-MeFOSA-M	Ave	0.2300	0.2455		2.67	2.50	6.8	50.0
13C2 PFDoA	Ave	0.5432	0.5431		2.50	2.50	-0.0	50.0
d9-N-EtFOSE-M	Ave	0.2246	0.2544		14.2	12.5	13.3	50.0
d-N-EtFOSA-M	Ave	0.2334	0.2524		2.70	2.50	8.1	50.0
13C2 PFTeDA	Ave	0.3551	0.3313		2.33	2.50	-6.7	50.0
13C2 PFHxDA	Ave	0.2944	0.3366		2.86	2.50	14.3	50.0


Exp1:m/z 413.00 > 369.00:Moving3PtAverage_x3
Perfluorooctanoic acid
4.062
4.062
4.473
Y (x E05)
Min
Exp1:m/z 413.00 > 169.00:Moving3PtAverage_x3
Perfluorooctanoic acid
4.062
4.434
Y (x E05)
Min
Exp1:m/z 417.00 > 372.00:Moving3PtAverage_x3
13C4 PFOA
4.062
Y (x E05)
Min

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_012.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 04-Jun-2020 13:09:51 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: ICV (36)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist:

Method: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 10:53:10 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1028

First Level Reviewer: maxwellm Date: 04-Jun-2020 14:12:27
Ratio Calibration: Average of Initial Calibration

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	2.555	2.538	0.017	0.630	9125803	2.54		102	17323	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.555	2.538	0.017	1.000	8888762	2.63			2287	
D 4 13C5 PFPeA										
267.90 > 223.00	2.895	2.876	0.019	0.714	8133658	2.53		101	12387	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.905	2.886	0.019	1.004	7818703	2.39			591	
D 9 13C3 PFBS										
301.90 > 80.00	2.936	2.917	0.019	0.724	5301307	2.38		102	14496	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.936	2.917	0.019	1.000	6017687	2.71	Target=2.14		2767	
298.90 > 99.00	2.936	2.917	0.019	1.000	2783022		2.16(1.07-3.21)		1865	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.227	3.212	0.015	0.796	689355	2.33		99.6	1500	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.234	3.212	0.022	1.002	1695194	2.55			15435	
D 11 13C2 PFHxA										
315.00 > 270.00	3.274	3.246	0.028	0.808	7792344	2.50		99.9	14524	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.274	3.246	0.028	1.000	8150913	2.79	Target=15.73		3208	
313.00 > 119.00	3.274	3.246	0.028	1.000	544996		14.96(7.86-23.59)		1360	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.295	3.265	0.030	1.122	3804305	2.27	Target=2.69		8135	
349.00 > 99.00	3.284	3.265	0.019	1.118	1432739		2.66(1.35-4.04)		5429	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.390	3.370	0.020	0.836	1908657	2.67		107	10032	

Report Date: 05-Jun-2020 10:53:12 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_012.d
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.390	3.370	0.020	1.000	1906500	2.73			10645	
D 18 13C4 PFHpA										
367.00 > 322.00	3.665	3.647	0.018	0.904	6436303	2.60		104	15078	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.665	3.647	0.018	1.000	6337336	2.44	Target=3.80		2393	
363.00 > 169.00	3.665	3.647	0.018	1.000	1672642		3.79(1.90-5.71)		5880	
D 17 18O2 PFHxS										
403.00 > 84.00	3.675	3.647	0.028	0.907	2650038	2.47		105	9072	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.675	3.657	0.018	1.000	3027307	2.41	Target=2.99		7688	
399.00 > 99.00	3.675	3.657	0.018	1.000	998671		3.03(1.50-4.49)		2257	
19 DONA										
377.00 > 251.00	3.714	3.696	0.018	0.844	17627030	2.82	Target=2.14		15961	
377.00 > 85.00	3.714	3.696	0.018	0.844	8205666		2.15(1.07-3.21)		10979	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.037	4.014	0.023	0.996	804721	2.46		104	4402	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.037	4.023	0.014	1.000	1768509	2.66			8697	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.054	4.039	0.015	0.921	2143974	2.31	Target=3.77		3376	
449.00 > 99.00	4.054	4.039	0.015	0.921	564590		3.80(1.89-5.66)		2620	
D 25 13C4 PFOA										
417.00 > 372.00	4.054	4.039	0.015	1.000	6058925	2.71		108	14700	
* 23 13C2 PFOA										
415.00 > 370.00	4.054	4.039	0.015		5679046	2.50			12526	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.054	4.039	0.015	1.000	6298618	2.46	Target=2.88		425	
413.00 > 169.00	4.054	4.039	0.015	1.000	2308216		2.73(1.44-4.31)		15731	
D 27 13C4 PFOS										
503.00 > 80.00	4.402	4.396	0.006	1.086	2035977	2.45		102	5780	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.410	4.396	0.014	1.002	2078803	2.47	Target=4.89		5012	
499.00 > 99.00	4.402	4.396	0.006	1.000	401383		5.18(2.44-7.33)		1706	M
D 30 13C5 PFNA										
468.00 > 423.00	4.418	4.412	0.006	1.090	4779019	2.79		112	10191	
31 Perfluorononanoic acid										
463.00 > 419.00	4.418	4.412	0.006	1.000	5187010	2.68	Target=7.00		917	
463.00 > 169.00	4.418	4.412	0.006	1.000	739417		7.01(3.50-10.51)		2829	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.596	4.589	0.007	1.044	6137983	2.64			8253	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.733	4.728	0.005	1.075	1557639	2.29	Target=2.77		2980	
549.00 > 99.00	4.733	4.728	0.005	1.075	557986		2.79(1.38-4.15)		3547	
D 33 13C8 FOSA										
506.00 > 78.00	4.747	4.750	-0.003	1.171	4154474	2.51		101	6527	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.747	4.750	-0.003	1.000	3480367	2.38			3157	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
37 Perfluorodecanoic acid										
513.00 > 469.00	4.755	4.750	0.005	1.000	4402493	2.70	Target=10.36		1176	
513.00 > 169.00	4.755	4.750	0.005	1.000	392915		11.20(5.18-15.54)		227	
D 39 13C2 PFDA										
515.00 > 470.00	4.755	4.758	-0.003	1.173	4226506	2.59		103	10107	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.755	4.758	-0.003	1.000	1595826	2.53			5727	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.755	4.758	-0.003	1.173	927517	2.38		99.3	4105	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.911	4.914	-0.003	1.211	1534367	2.52		101	2529	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.920	4.914	0.006	1.002	1200500	2.68			1122	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.032	5.037	-0.005	1.143	1376027	2.30	Target=2.97		4992	
599.00 > 99.00	5.032	5.037	-0.005	1.143	474034		2.90(1.49-4.46)		2482	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.059	5.064	-0.005	1.000	2963294	2.93	Target=7.56		1360	
563.00 > 169.00	5.068	5.064	0.004	1.002	385155		7.69(3.78-11.34)		513	
D 43 13C2 PFUnA										
565.00 > 520.00	5.059	5.064	-0.005	1.248	3508146	2.52		101	6522	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.068	5.073	-0.005	1.250	1577508	2.54		102	1633	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.077	5.073	0.004	1.002	1174752	2.63			1355	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.186	5.191	-0.005	1.178	5862951	2.67			9707	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.195	5.200	-0.005	1.282	5447345	13.1		105	4683	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.204	5.209	-0.005	1.002	1154402	2.53			2195	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.213	5.218	-0.005	1.286	1394222	2.67		107	231	
50 NMeFOSA										
512.00 > 169.00	5.223	5.227	-0.005	1.002	1426658	2.72			753	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.343	5.338	0.005	1.000	2768618	2.29	Target=7.18		396	
613.00 > 169.00	5.343	5.338	0.005	1.000	380562		7.28(3.59-10.76)		477	
D 56 13C2 PFDoA										
615.00 > 570.00	5.343	5.347	-0.004	1.318	3084084	2.50		100.0	8538	
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.361	5.366	-0.005	1.127	1314325	2.64			7360	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.361	5.366	-0.005	1.322	7223873	14.2		113	7108	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.377	5.382	-0.005	1.003	1344637	2.27			2241	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.385	5.393	-0.007	1.328	1433272	2.70		108	445	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.395	5.403	-0.008	1.002	1504458	2.62			755	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.558	5.566	-0.008	1.263	509295	2.46	Target=0.79		3928	
699.00 > 99.00	5.558	5.566	-0.008	1.263	630937		0.81(0.39-1.18)		2981	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.595	5.603	-0.008	1.047	2353271	2.42	Target=6.63		380	
663.00 > 169.00	5.595	5.603	-0.008	1.047	347232		6.78(3.32-9.95)		629	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.833	5.839	-0.006	1.439	1881184	2.33		93.3	8252	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.833	5.839	-0.006	1.000	1953720	2.60	Target=8.46		492	
713.00 > 219.00	5.824	5.839	-0.015	0.998	271337		7.20(4.23-12.69)		393	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.248	6.263	-0.015	1.541	1911345	2.86		114	5010	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.257	6.263	-0.006	1.002	1530745	2.33	Target=7.92		218	
813.00 > 169.00	6.248	6.263	-0.015	1.000	198389		7.72(3.96-11.88)		2300	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.646	6.656	-0.010	1.064	862321	2.29	Target=10.24		155	
913.00 > 169.00	6.652	6.656	-0.004	1.065	87907		9.81(5.12-15.36)		1159	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFCIC_FULL_00036 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 10:53:12 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_012.d

Injection Date: 04-Jun-2020 13:09:51 Instrument ID: A15

Lims ID: ICV

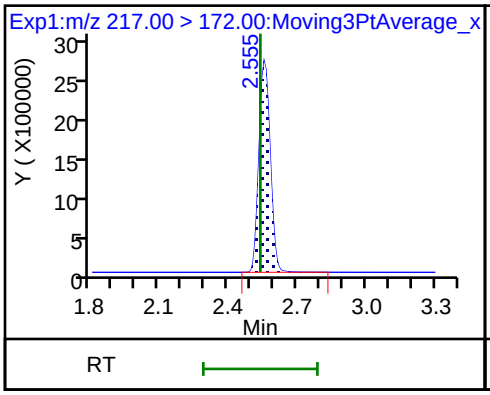
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 9 Worklist Smp#: 10

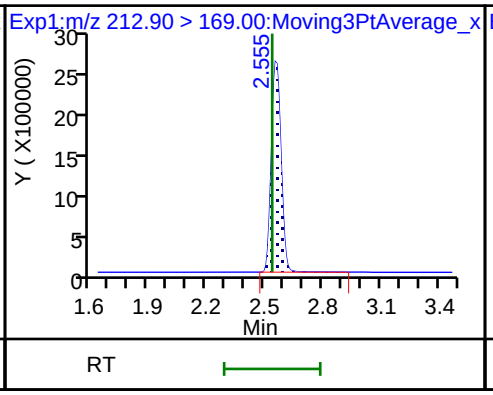
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

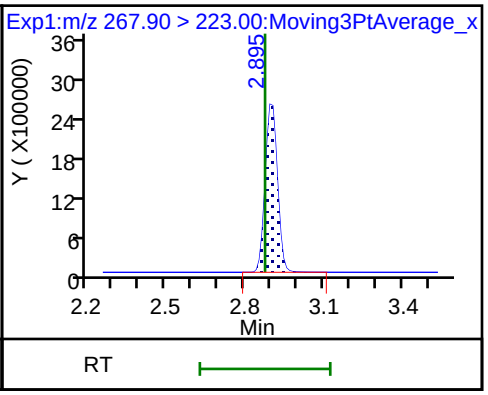
D 1 13C4 PFBA



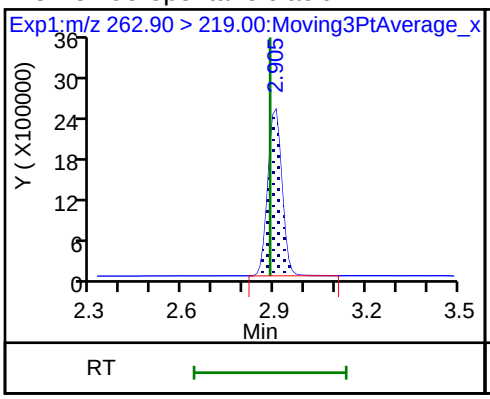
2 Perfluorobutanoic acid



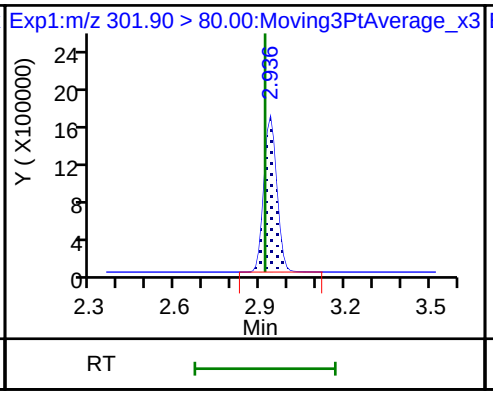
D 4 13C5 PFPeA



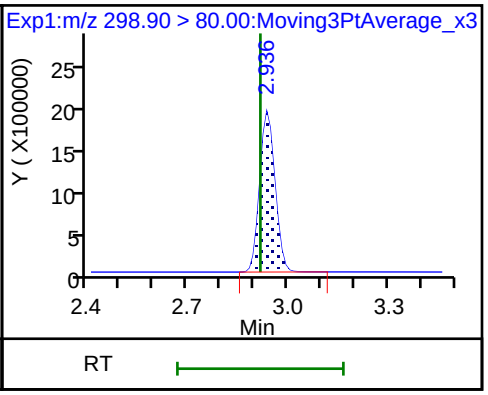
5 Perfluoropentanoic acid



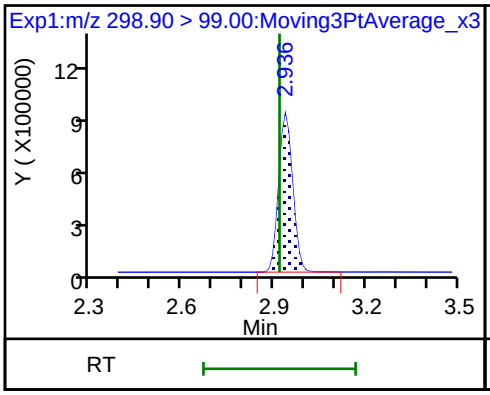
D 9 13C3 PFBS



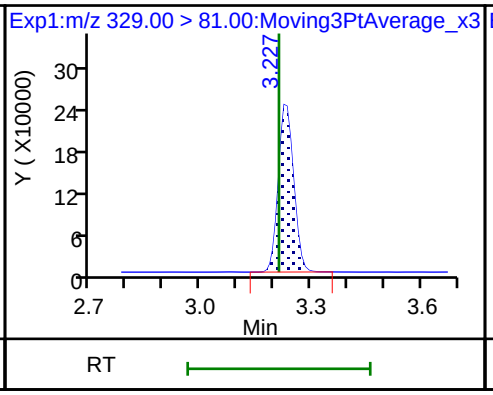
6 Perfluorobutanesulfonic acid



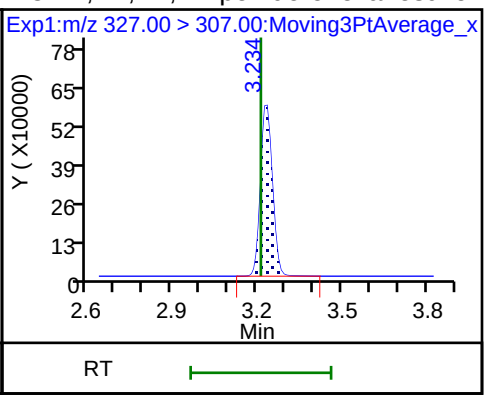
6 Perfluorobutanesulfonic acid



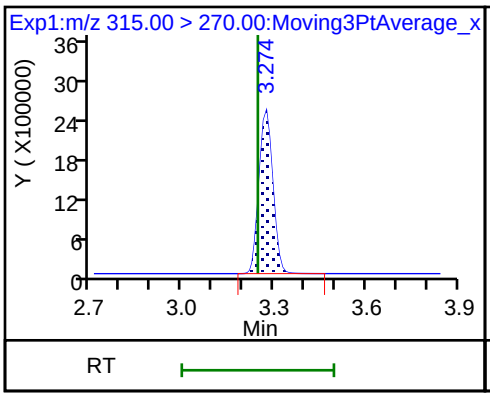
D 7 M2-4:2 FTS



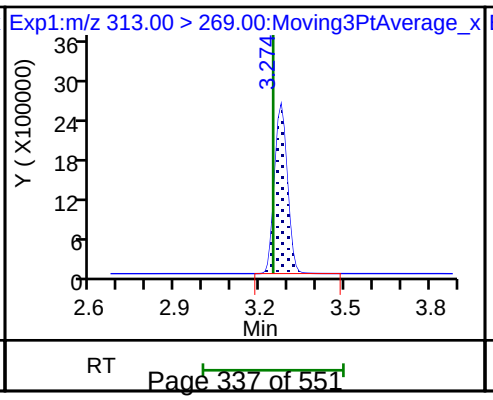
8 1H,1H,2H,2H-perfluorohexanesulfo



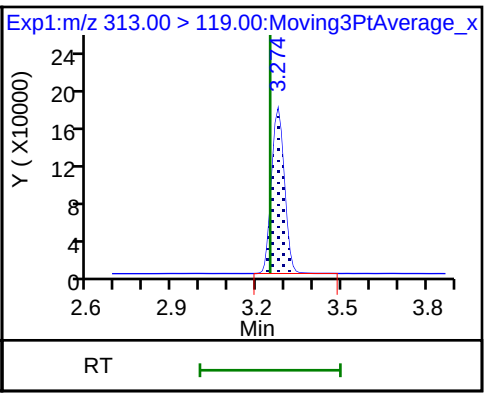
D 11 13C2 PFHxA



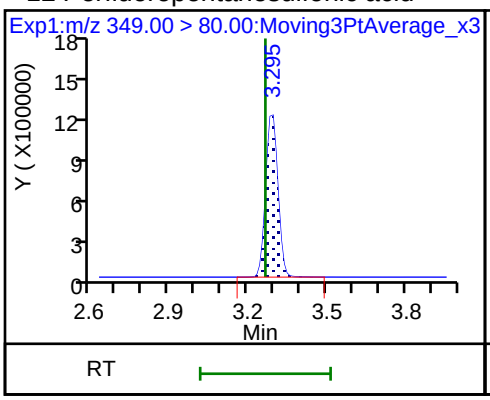
10 Perfluorohexanoic acid



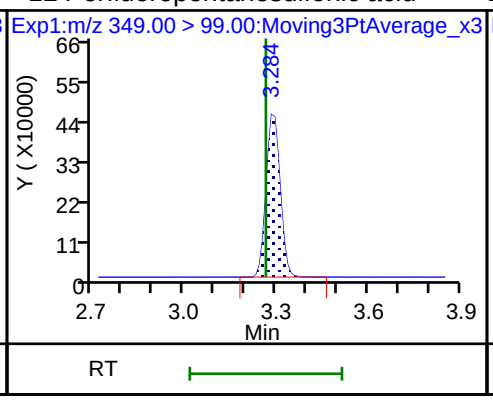
10 Perfluorohexanoic acid



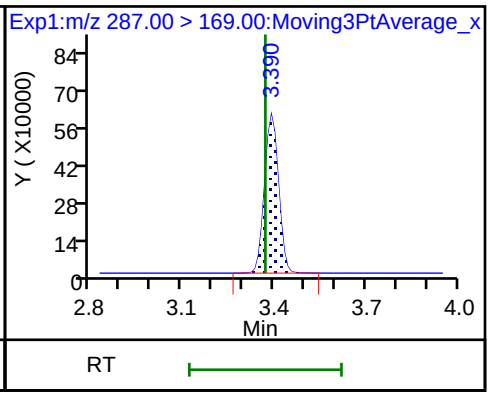
12 Perfluoropentanesulfonic acid



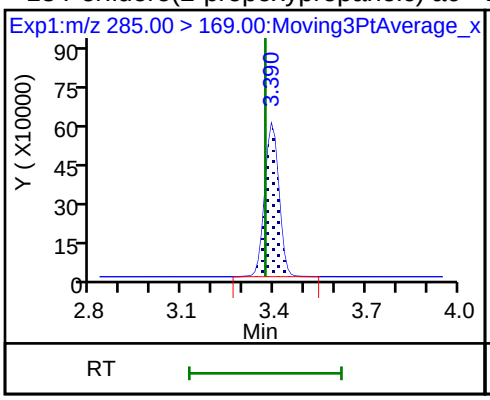
12 Perfluoropentanesulfonic acid



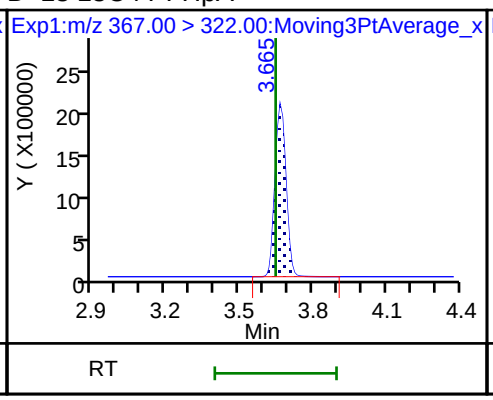
D 14 13C3 HFPO-DA



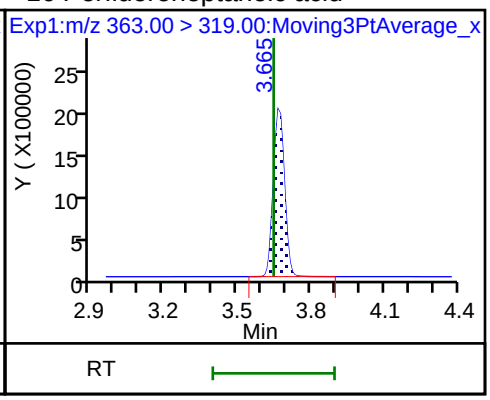
13 Perfluoro(2-propoxypropanoic) ac



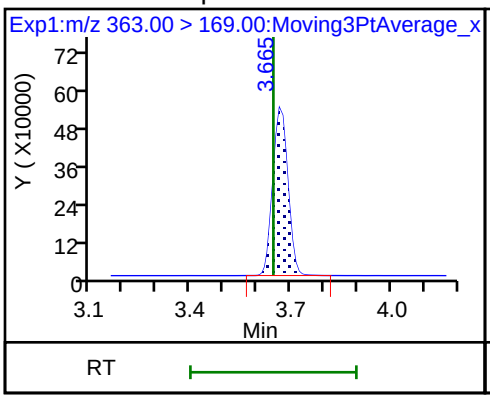
D 18 13C4 PFHpA



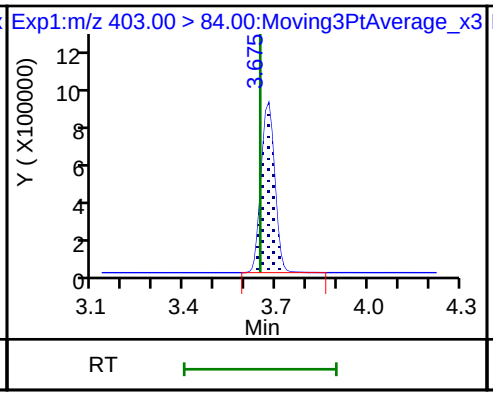
16 Perfluoroheptanoic acid



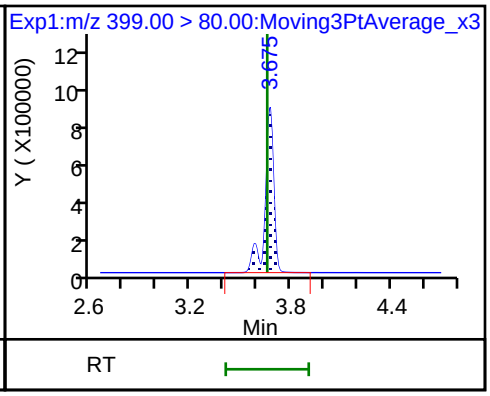
16 Perfluoroheptanoic acid



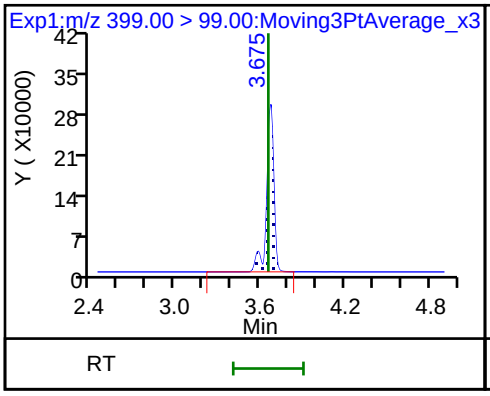
D 17 18O2 PFHxS



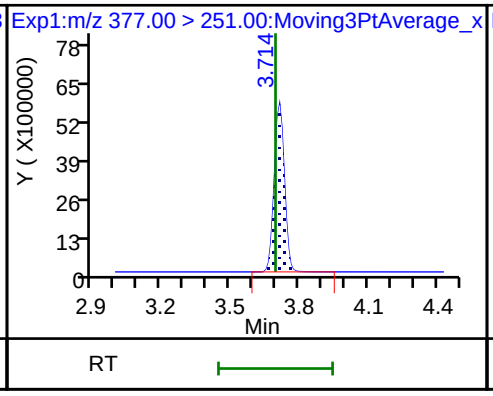
15 Perfluorohexanesulfonic acid



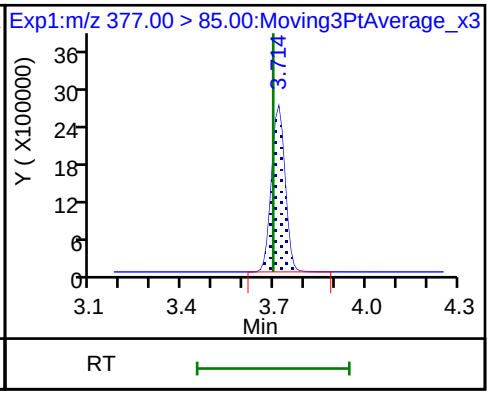
15 Perfluorohexanesulfonic acid



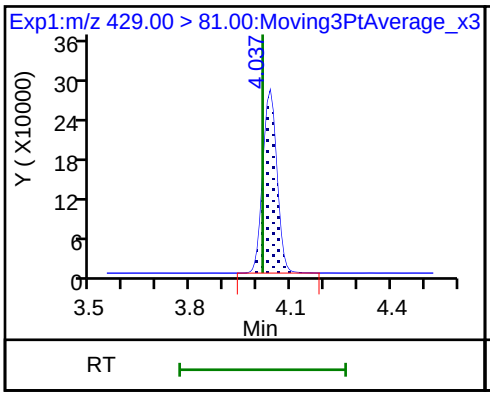
19 DONA



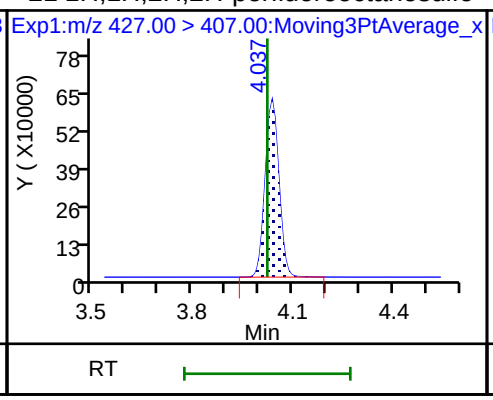
19 DONA



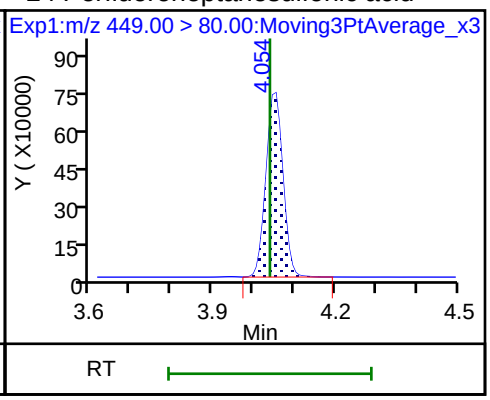
D 20 M2-6:2 FTS



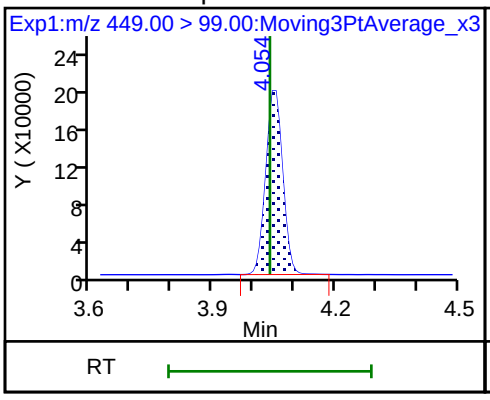
21 1H,1H,2H,2H-perfluorooctanesulfo



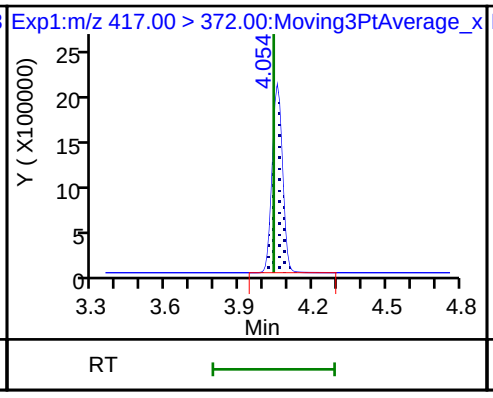
24 Perfluoroheptanesulfonic acid



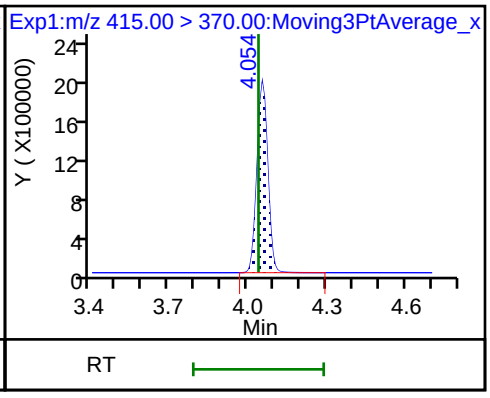
24 Perfluoroheptanesulfonic acid



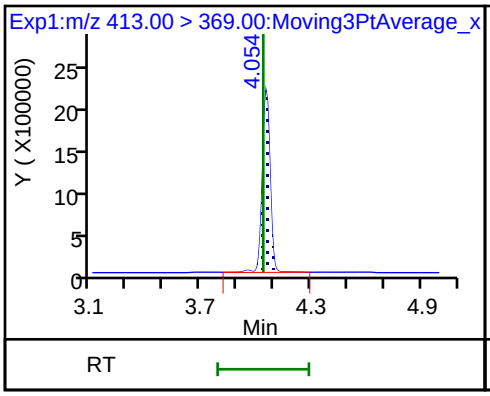
D 25 13C4 PFOA



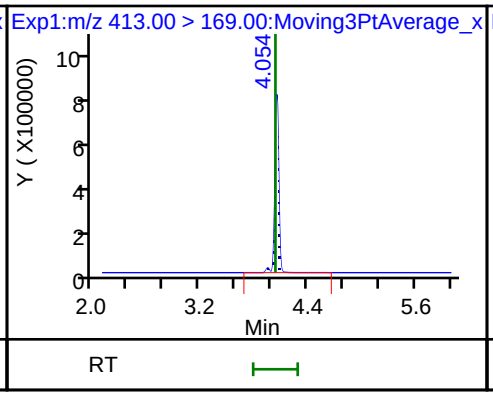
* 23 13C2 PFOA



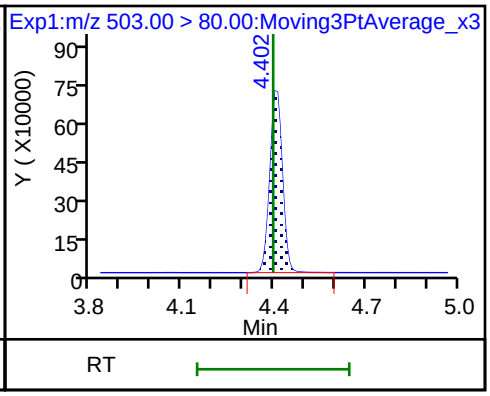
22 Perfluorooctanoic acid



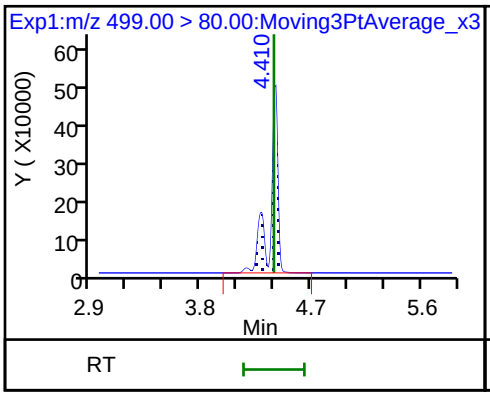
22 Perfluorooctanoic acid



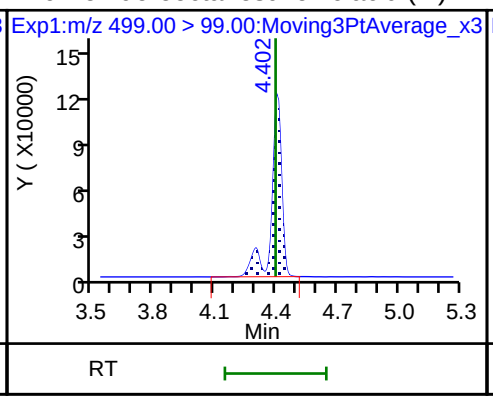
D 27 13C4 PFOS



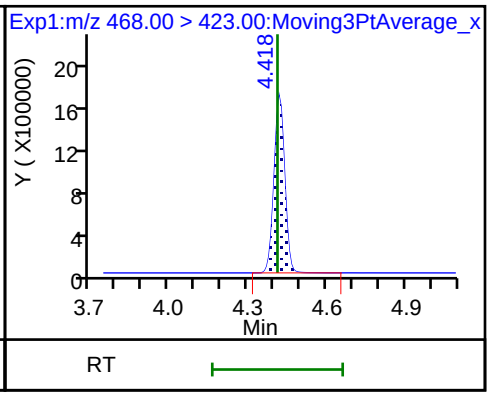
29 Perfluorooctanesulfonic acid



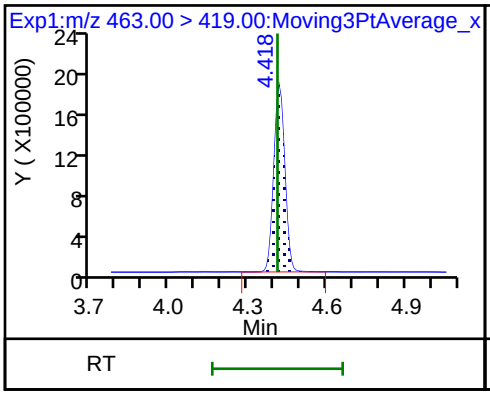
29 Perfluorooctanesulfonic acid (M)



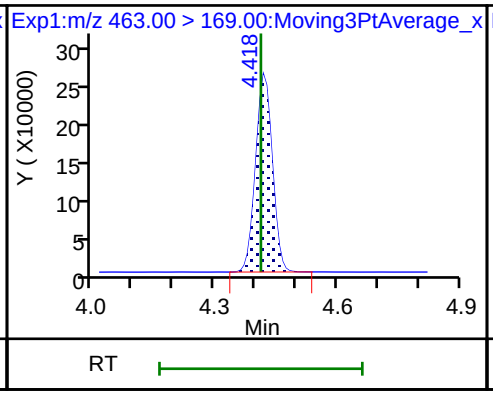
D 30 13C5 PFNA



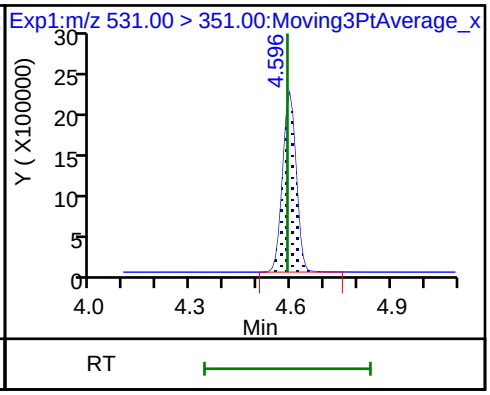
31 Perfluorononanoic acid



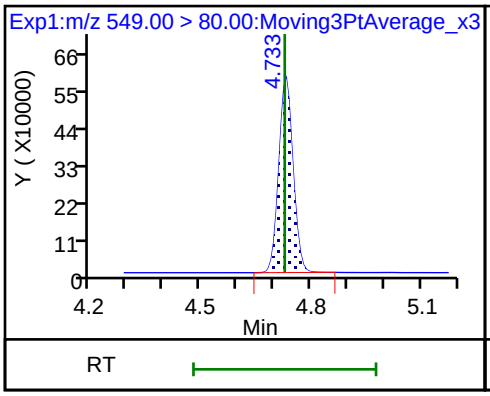
31 Perfluorononanoic acid



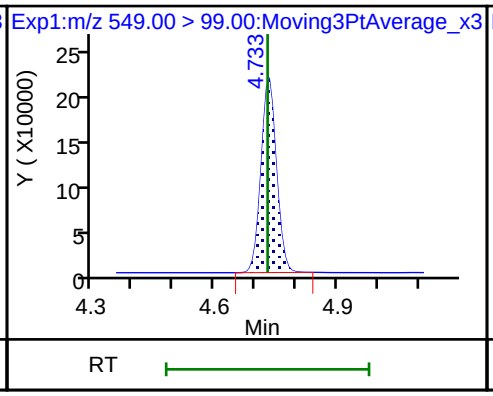
32 9-Chlorohexadecafluoro-3-oxanona



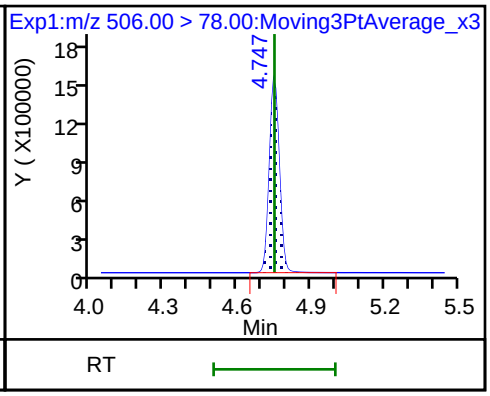
35 Perfluorononanesulfonic acid



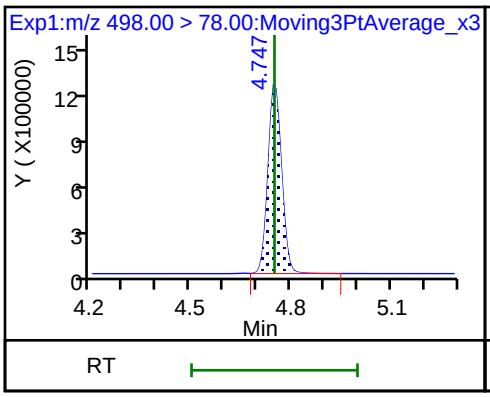
35 Perfluorononanesulfonic acid



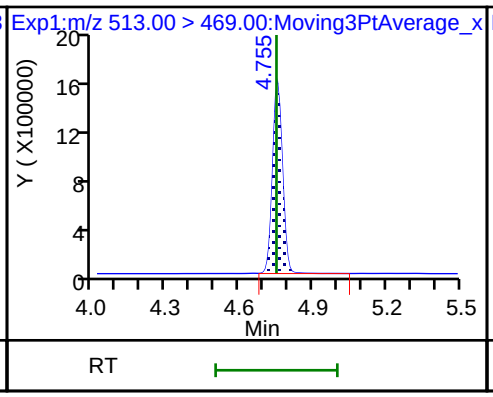
D 33 13C8 FOSA



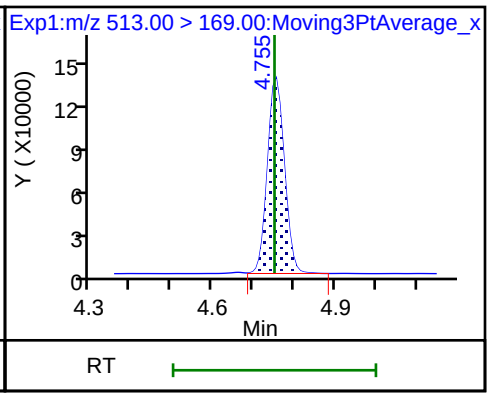
34 Perfluorooctanesulfonamide



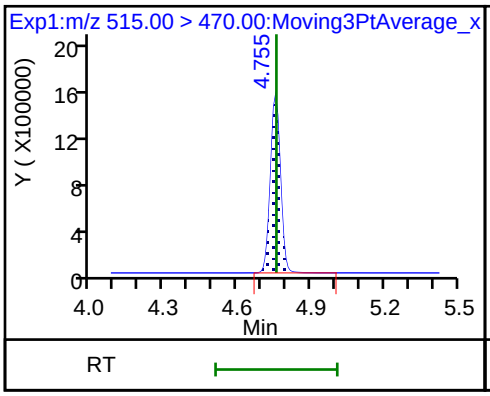
37 Perfluorodecanoic acid



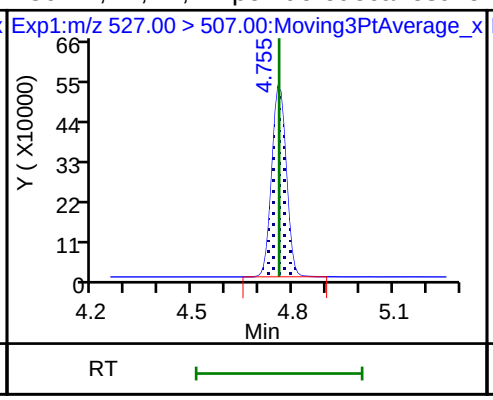
37 Perfluorodecanoic acid



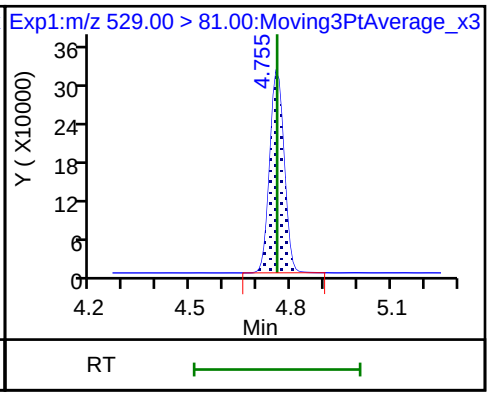
D 39 13C2 PFDA



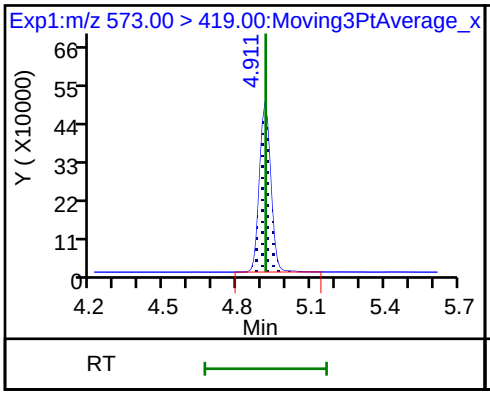
36 1H,1H,2H,2H-perfluorodecanesulfo



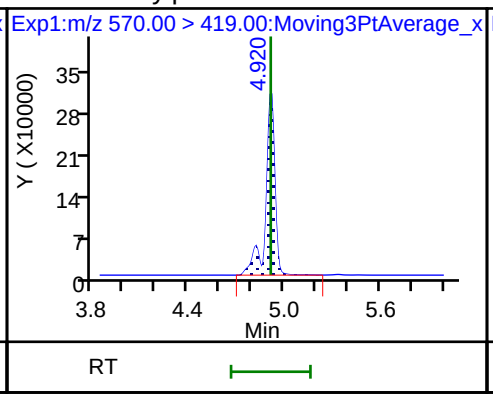
D 38 M2-8:2 FTS



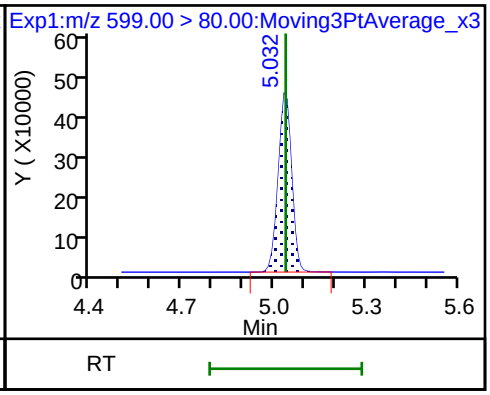
D 40 d3-NMeFOSAA



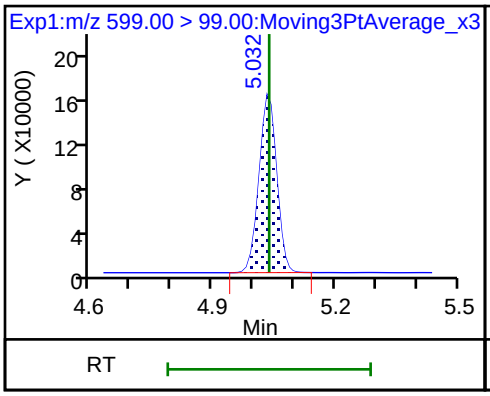
41 N-methylperfluorooctanesulfonami



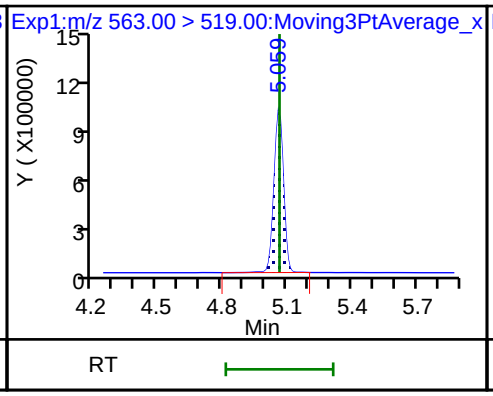
42 Perfluorodecanesulfonic acid



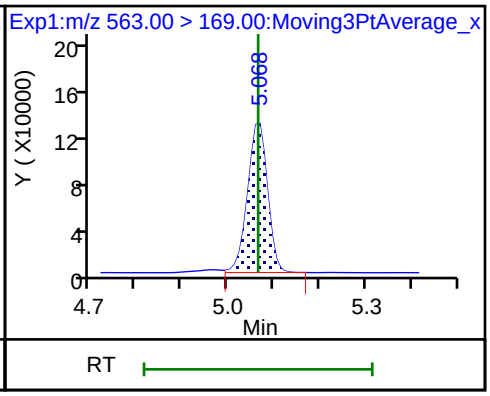
42 Perfluorodecanesulfonic acid



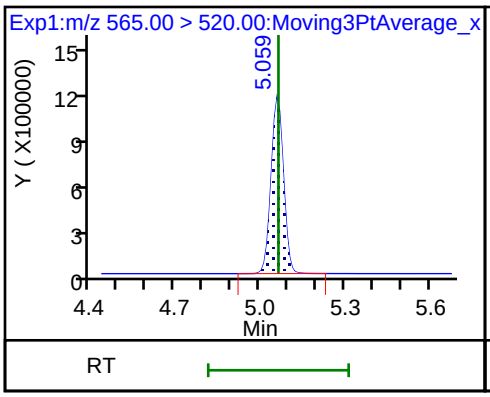
45 Perfluoroundecanoic acid



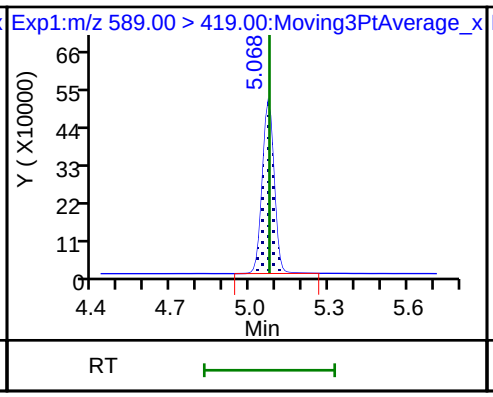
45 Perfluoroundecanoic acid



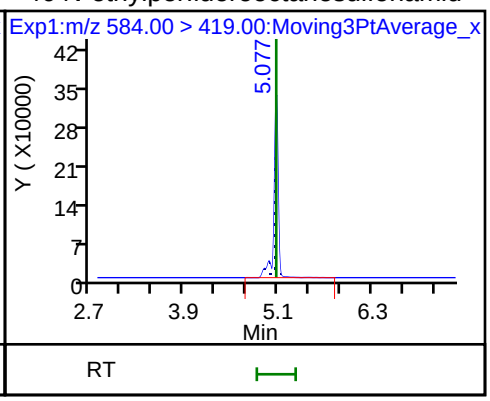
D 43 13C2 PFUnA



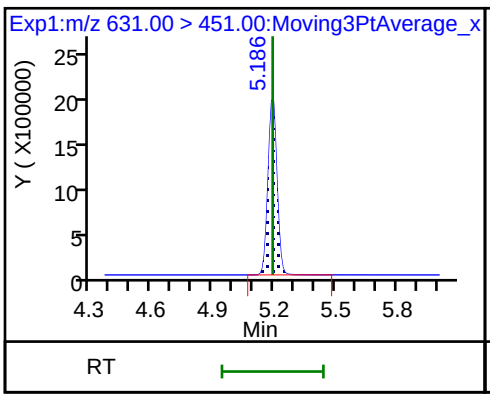
D 44 d5-NEtFOSAA



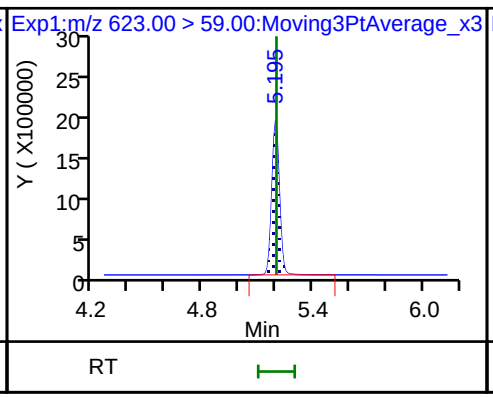
46 N-ethylperfluorooctanesulfonamid



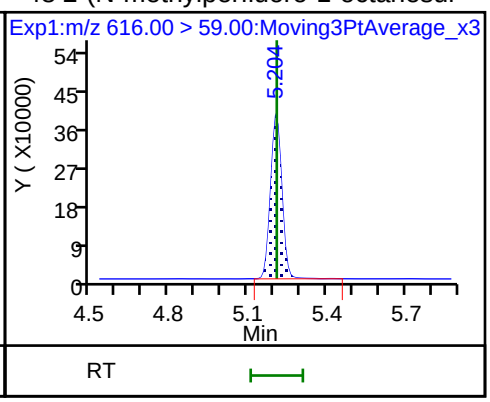
51 11-Chloroeicosafluoro-3-oxaundec



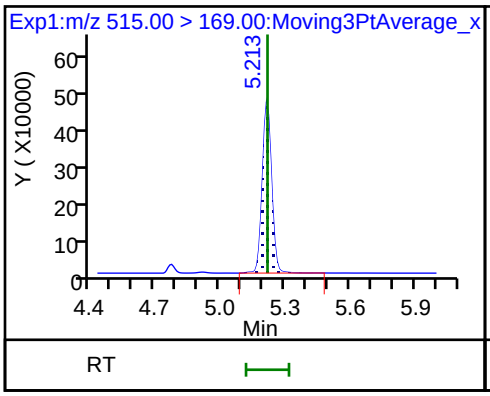
D 47 d7-N-MeFOSE-M



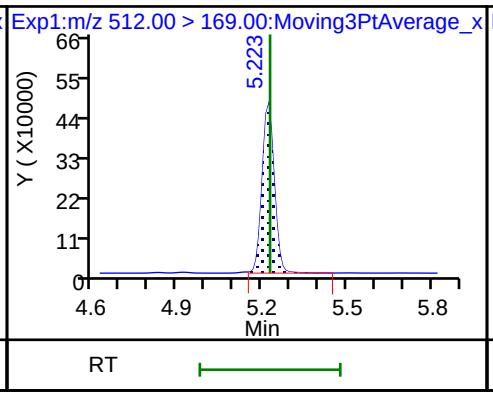
48 2-(N-methylperfluoro-1-octanesul



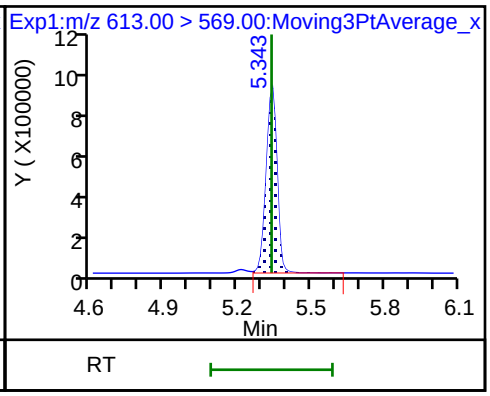
D 49 d-N-MeFOSA-M



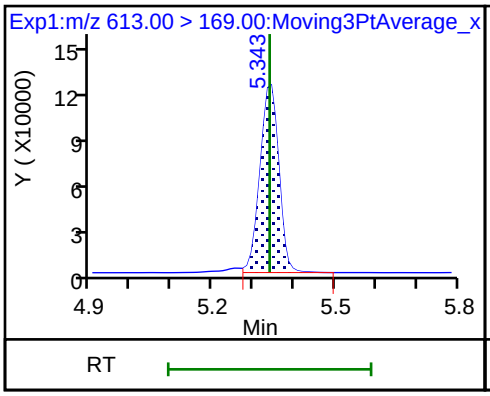
50 NMeFOSA



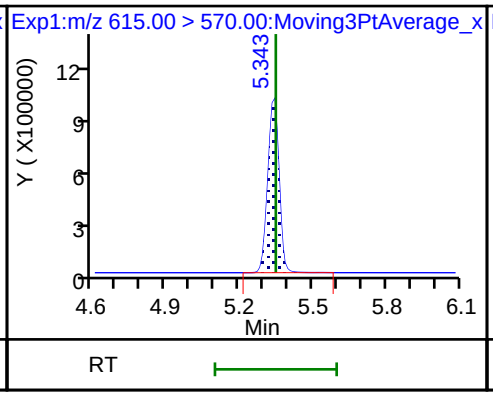
57 Perfluorododecanoic acid



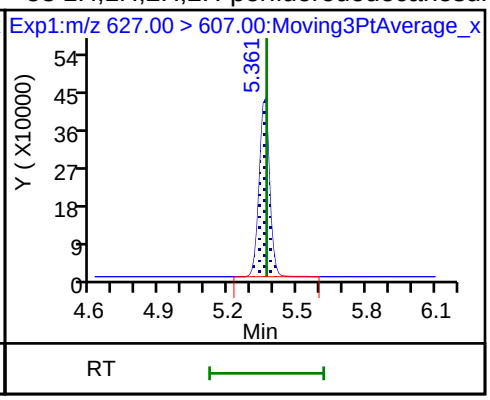
57 Perfluorododecanoic acid



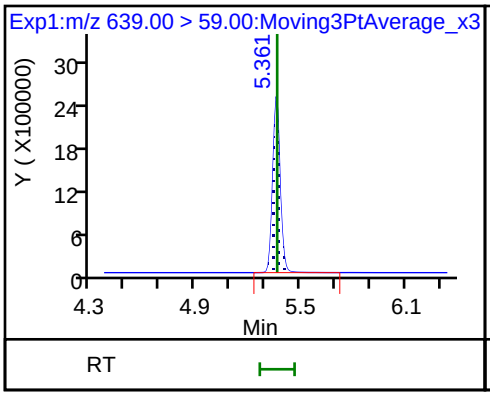
D 56 13C2 PFDoA



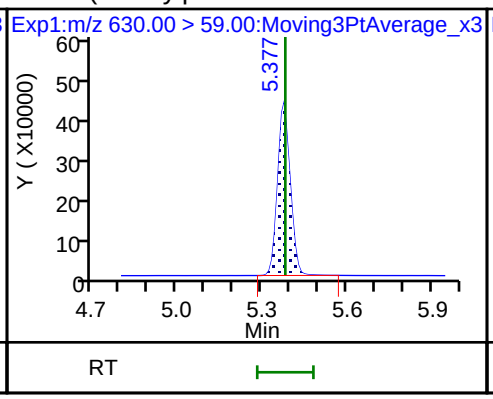
58 1H,1H,2H,2H-perfluorododecanesul



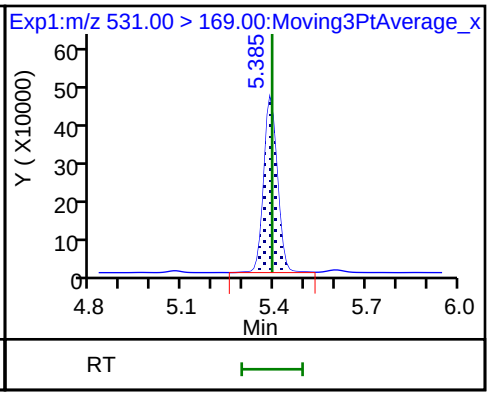
D 52 d9-N-EtFOSE-M



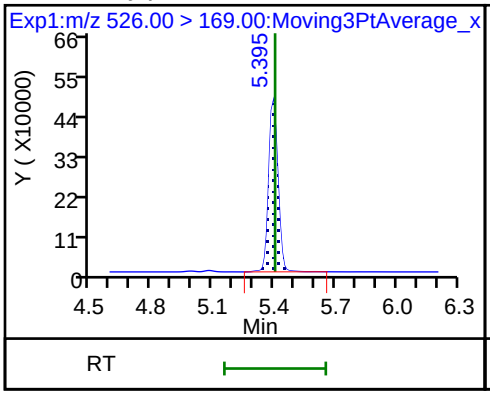
53 2-(N-ethylperfluoro-1-octanesulf



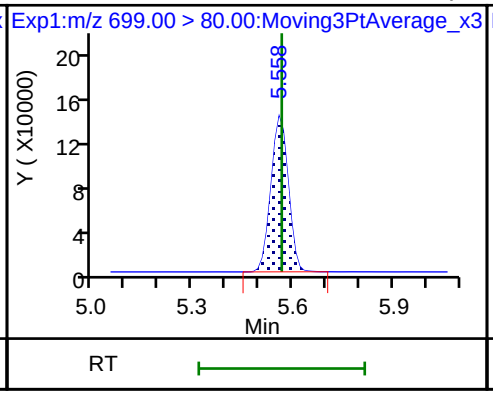
D 54 d-N-EtFOSA-M



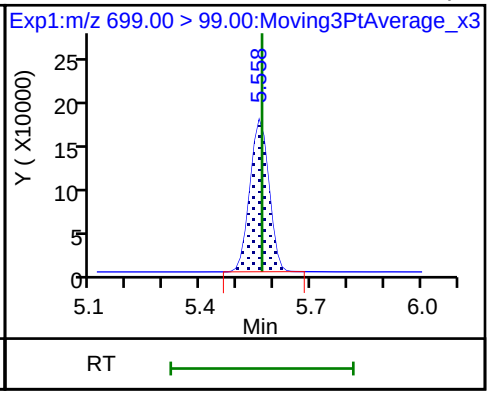
55 N-ethylperfluoro-1-octanesulfona



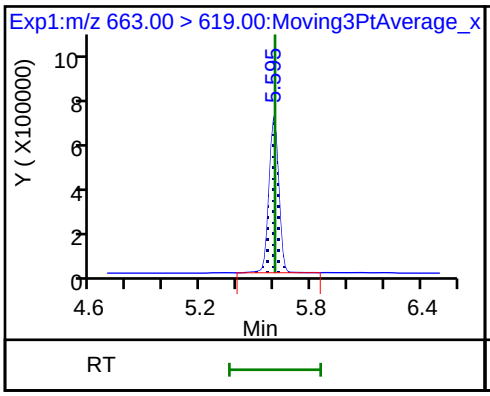
59 Perfluorododecanesulfonic acid (



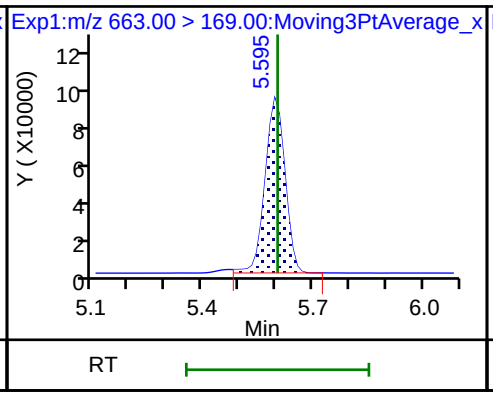
59 Perfluorododecanesulfonic acid (



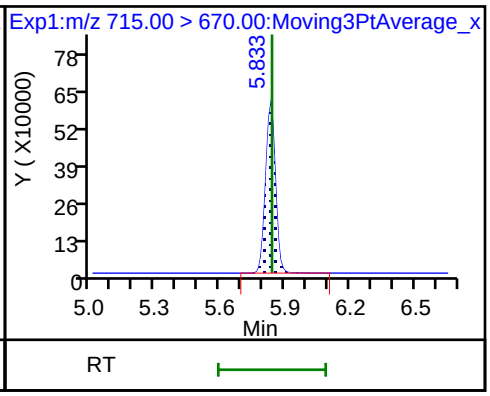
60 Perfluorotridecanoic acid



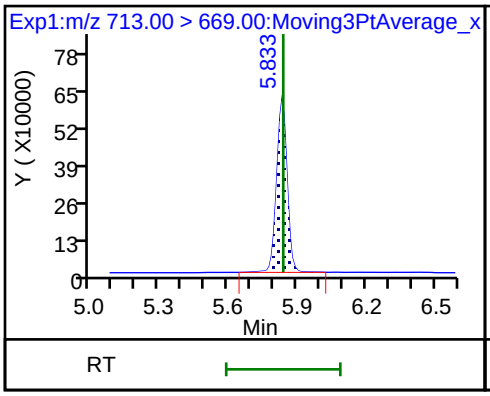
60 Perfluorotridecanoic acid



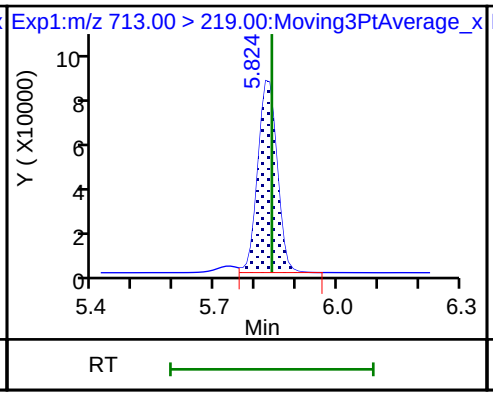
D 61 13C2 PFTeDA



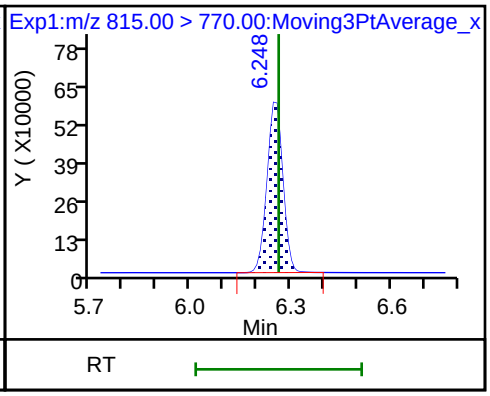
62 Perfluorotetradecanoic acid



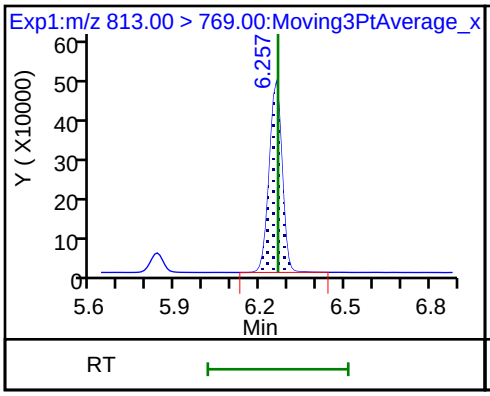
62 Perfluorotetradecanoic acid



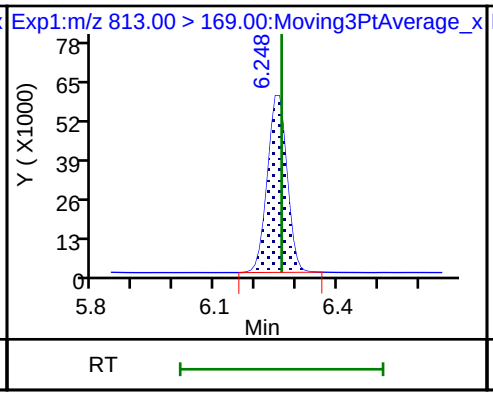
D 64 13C2 PFHxDA



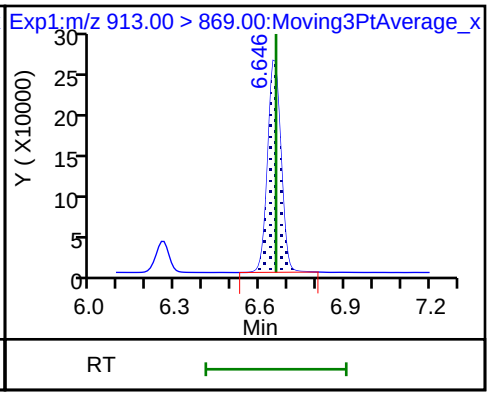
63 Perfluorohexadecanoic acid



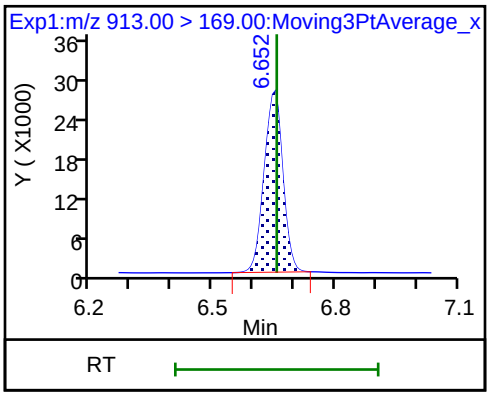
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

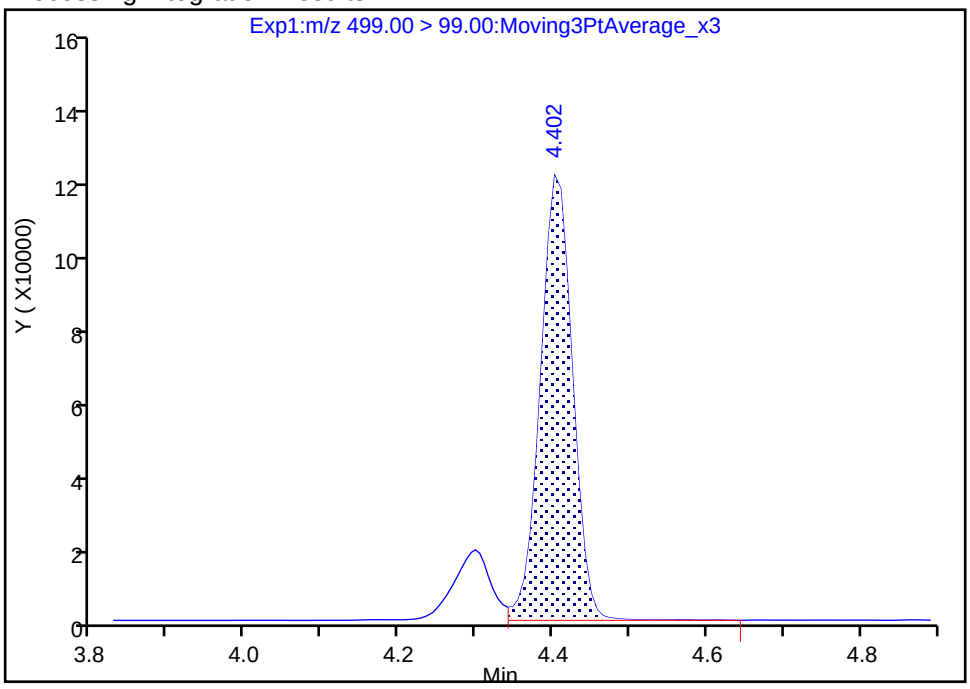
Data File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_012.d
Injection Date: 04-Jun-2020 13:09:51 Instrument ID: A15
Lims ID: ICV
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 9 Worklist Smp#: 10
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

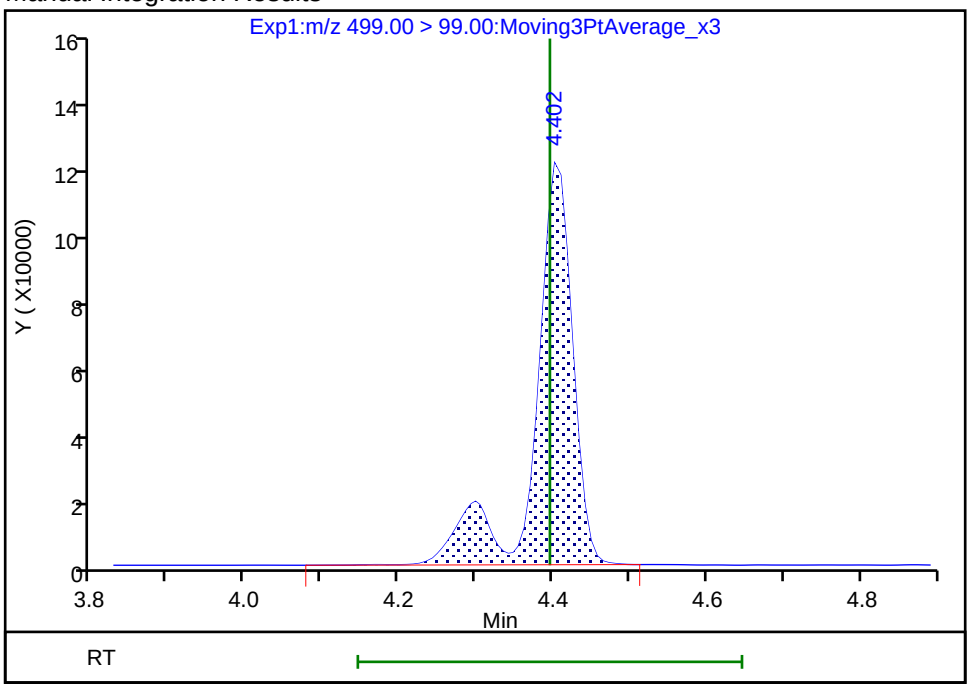
Processing Integration Results

RT: 4.40
Area: 342022
Amount: 2.466377
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 401383
Amount: 2.466377
Amount Units: ng/ml



Reviewer: maxwellm, 04-Jun-2020 14:50:28
Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCVL 320-383943/2 Calibration Date: 06/05/2020 14:19

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.05_A15_PFC_A_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	0.9260	0.9186		0.0496	0.0500	-0.8	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.007	1.067		0.0530	0.0500	6.0	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9749	0.9469		0.0429	0.0442	-2.9	50.0
4:2 FTS	AveID	2.255	2.598		0.538	0.467	15.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9375	0.9424		0.0503	0.0500	0.5	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7335	0.6780		0.0433	0.0469	-7.6	50.0
HFPO-DA (GenX)	AveID	0.9134	0.9108		0.0499	0.0500	-0.3	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.011	1.031		0.0510	0.0500	2.0	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.123	1.147		0.0465	0.0455	2.2	50.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	7.331	7.416		0.0476	0.0471	1.2	50.0
6:2 FTS	AveID	1.966	2.154		0.519	0.474	9.6	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.091	1.064		0.0464	0.0476	-2.4	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.057	1.103		0.0522	0.0500	4.4	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9894	0.9445		0.0443	0.0464	-4.5	50.0
Perfluorononanoic acid (PFNA)	AveID	1.014	0.9868		0.0487	0.0500	-2.7	50.0
F-53B Major	AveID	2.729	2.614		0.0446	0.0466	-4.2	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7987	0.7750		0.0466	0.0480	-3.0	50.0
8:2 FTS	AveID	1.631	1.731		0.508	0.479	6.1	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9658	0.9121		0.0472	0.0500	-5.6	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.8783	0.8445		0.0481	0.0500	-3.9	50.0
NMeFOSAA	AveID	0.7297	0.7451		0.511	0.500	2.1	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7009	0.6091		0.0419	0.0482	-13.1	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7214	0.5913		0.0410	0.0500	-18.0	50.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.7067	0.6713		0.475	0.500	-5.0	50.0
F-53B Minor	AveID	2.579	2.316		0.0423	0.0471	-10.2	50.0
NMeFOSE	AveID	1.047	1.162		0.0555	0.0500	11.1	50.0
NMeFOSA	AveID	0.9416	1.002			0.0500	6.4	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9816	1.045		0.0533	0.0500	6.5	50.0
10:2 FTS	AveID	1.287	1.182		0.0443	0.0482	-8.1	50.0
NEtFOSE	AveID	1.024	0.9276		0.0453	0.0500	-9.4	50.0
NEtFOSA	AveID	1.002	1.006			0.0500	0.3	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2435	0.2646		0.0526	0.0484	8.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCVL 320-383943/2 Calibration Date: 06/05/2020 14:19

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.05_A15_PFC_A_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7891	0.7598		0.0481	0.0500	-3.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.000	0.9475		0.0474	0.0500	-5.3	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.389		0.0583	0.0500	16.6	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4920	0.4580		0.0465	0.0500	-6.9	50.0
13C4 PFBA	Ave	1.583	1.363		2.15	2.50	-13.9	50.0
13C5 PFPeA	Ave	1.414	1.272		2.25	2.50	-10.1	50.0
13C3 PFBS	Ave	0.9803	0.8688		2.06	2.33	-11.4	50.0
M2-4:2 FTS	Ave	0.1305	0.1063		1.90	2.34	-18.6	50.0
13C2 PFHxA	Ave	1.374	1.261		2.29	2.50	-8.3	50.0
13C3 HFPO-DA	Ave	0.3145	0.2861		2.27	2.50	-9.0	50.0
13C4 PFHpA	Ave	1.090	0.9915		2.27	2.50	-9.0	50.0
18O2 PFHxS	Ave	0.4715	0.4187		2.10	2.37	-11.2	50.0
M2-6:2 FTS	Ave	0.1440	0.1353		2.23	2.38	-6.0	50.0
13C4 PFOA	Ave	0.9856	0.9704		2.46	2.50	-1.5	50.0
13C4 PFOS	Ave	0.3660	0.3176		2.07	2.39	-13.2	50.0
13C5 PFNA	Ave	0.7544	0.7624		2.53	2.50	1.1	50.0
13C8 FOSA	Ave	0.7278	0.6548		2.25	2.50	-10.0	50.0
13C2 PFDA	Ave	0.7192	0.7258		2.52	2.50	0.9	50.0
M2-8:2 FTS	Ave	0.1717	0.1587		2.21	2.40	-7.6	50.0
d3-NMeFOSAA	Ave	0.2685	0.2312		2.15	2.50	-13.9	50.0
13C2 PFUnA	Ave	0.6132	0.5926		2.42	2.50	-3.4	50.0
d5-NEtFOSAA	Ave	0.2733	0.2499		2.29	2.50	-8.6	50.0
d7-N-MeFOSE-M	Ave	0.1833	0.1702		11.6	12.5	-7.2	50.0
d-N-MeFOSA-M	Ave	0.2300	0.1963		2.13	2.50	-14.6	50.0
13C2 PFDoA	Ave	0.5432	0.5145		2.37	2.50	-5.3	50.0
d9-N-EtFOSE-M	Ave	0.2246	0.1912		10.6	12.5	-14.9	50.0
d-N-EtFOSA-M	Ave	0.2334	0.1875		2.01	2.50	-19.7	50.0
13C2 PFTeDA	Ave	0.3551	0.3361		2.37	2.50	-5.4	50.0
13C2 PFHxDA	Ave	0.2944	0.2710		2.30	2.50	-7.9	50.0
13C8 PFOA	Ave	0.6050	0.5408		2.19	2.45	-10.6	50.0
13C8 PFOS	Ave	0.1244	0.1078		2.07	2.39	-13.4	50.0

Eurofins TestAmerica, Sacramento

Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 05-Jun-2020 14:19:27 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCVL (19)
Misc. Info.: Plate: 5 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 08:14:49 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1027

First Level Reviewer: koucharis Date: 08-Jun-2020 08:14:49
Ratio Calibration: Average of Initial Calibration

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	2.555	2.544	0.011	0.627	9412261	2.15		86.1	18417	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.555	2.552	0.003	1.000	172914	0.0496		99.2	55.2	
D 4 13C5 PFPeA										
267.90 > 223.00	2.907	2.903	0.004	0.714	8781413	2.25		89.9	10682	
5 Perfluoropentanoic acid										M
262.90 > 219.00	2.907	2.903	0.004	1.000	187457	0.0530		106	11.8	M
D 9 13C3 PFBS										
301.90 > 80.00	2.938	2.934	0.004	0.721	5578532	2.06		88.6	6303	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.938	2.944	-0.006	1.000	100425	0.0429	Target=2.14	97.1	5.4	
298.90 > 99.00	2.948	2.944	0.004	1.004	47842		2.10(1.07-3.21)		11.3	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.236	3.229	0.008	0.795	685248	1.90		81.4	945	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.236	3.229	0.008	1.000	356015	0.5379		115	3847	
D 11 13C2 PFHxA										
315.00 > 270.00	3.276	3.276	0.0	0.804	8704341	2.29		91.7	11894	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluorohexanoic acid										M
313.00 > 269.00	3.285	3.276	0.009	1.003	164062	0.0503	Target=15.73	101	76.0	M
313.00 > 119.00	3.276	3.276	0.0	1.000	11192		14.66(7.86-23.59)		23.7	M
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.296	3.296	0.0	1.122	76290	0.0433	Target=2.69	92.4	27.4	
349.00 > 99.00	3.296	3.296	0.0	1.122	28798		2.65(1.35-4.04)		166	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.402	3.392	0.010	0.836	1975199	2.27		91.0	9523	
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.402	3.392	0.010	1.000	35980	0.0499		99.7	428	
D 18 13C4 PFHpA										
367.00 > 322.00	3.677	3.667	0.010	0.903	6845923	2.27		91.0	10494	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.677	3.667	0.010	1.000	141217	0.0510	Target=3.80	102	48.7	
363.00 > 169.00	3.677	3.667	0.010	1.000	37112		3.81(1.90-5.71)		172	
D 17 18O2 PFHxS										
403.00 > 84.00	3.686	3.677	0.009	0.905	2734816	2.10		88.8	7359	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.686	3.677	0.009	1.000	60359	0.0465	Target=2.99	102	274	M
399.00 > 99.00	3.686	3.677	0.009	1.000	22960		2.63(1.50-4.49)		106	
19 DONA										
377.00 > 251.00	3.726	3.716	0.010	0.843	306392	0.0476	Target=2.14	101	1522	
377.00 > 85.00	3.726	3.716	0.010	0.843	136724		2.24(1.07-3.21)		1029	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.048	4.032	0.016	0.994	887504	2.23		94.0	4020	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.048	4.032	0.016	1.000	381456	0.5194		110	2908	
$ 26 13C8 PFOA										
421.00 > 376.00	4.064	4.048	0.016	0.998	3655935	2.19		89.4	7166	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.064	4.048	0.016	0.919	44435	0.0464	Target=3.77	97.6	383	
449.00 > 99.00	4.064	4.048	0.016	0.919	11685		3.80(1.89-5.66)		119	
D 25 13C4 PFOA										
417.00 > 372.00	4.072	4.056	0.016	1.000	6700036	2.46		98.5	10199	
* 23 13C2 PFOA										
415.00 > 370.00	4.072	4.056	0.016		6904693	2.50			14491	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.072	4.056	0.016	1.000	147772	0.0522	Target=2.88	104	8.5	M
413.00 > 169.00	4.072	4.056	0.016	1.000	54748		2.70(1.44-4.31)		148	
$ 28 13C8 PFOS										
507.00 > 99.00	4.420	4.405	0.015	1.086	711557	2.07		86.6	3621	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 27 13C4 PFOS										
503.00 > 80.00	4.420	4.405	0.015	1.086	2096407	2.07		86.8	5102	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.420	4.405	0.015	1.000	38443	0.0443	Target=4.89	95.5	204	M
499.00 > 99.00	4.420	4.405	0.015	1.000	8377		4.59(2.44-7.33)		43.2	M
D 30 13C5 PFNA										
468.00 > 423.00	4.436	4.421	0.015	1.089	5263937	2.53		101	7209	
31 Perfluorononanoic acid										
463.00 > 419.00	4.428	4.421	0.007	0.998	103892	0.0487	Target=7.00	97.3	14.3	
463.00 > 169.00	4.436	4.421	0.015	1.000	13512		7.69(3.50-10.51)		64.9	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.607	4.599	0.009	1.042	106840	0.0446		95.8	527	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.744	4.730	0.014	1.073	32628	0.0466	Target=2.77	97.0	67.2	
549.00 > 99.00	4.744	4.730	0.014	1.073	12473		2.62(1.38-4.15)		149	
D 33 13C8 FOSA										
506.00 > 78.00	4.761	4.752	0.009	1.169	4521105	2.25		90.0	4848	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.769	4.752	0.017	1.002	76358	0.0481		96.1	459	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.769	4.752	0.017	1.000	91420	0.0472	Target=10.36	94.4	24.9	
513.00 > 169.00	4.769	4.752	0.017	1.000	9407		9.72(5.18-15.54)		61.3	
D 39 13C2 PFDA										
515.00 > 470.00	4.769	4.752	0.017	1.171	5011393	2.52		101	10785	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.769	4.752	0.017	1.000	363324	0.5082		106	2278	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.769	4.752	0.017	1.171	1049393	2.21		92.4	3773	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.927	4.907	0.020	1.210	1596538	2.15		86.1	2060	
41 N-methylperfluorooctanesulfonami										M
570.00 > 419.00	4.927	4.907	0.020	1.000	237902	0.5105		102	293	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.048	5.030	0.018	1.142	25754	0.0419	Target=2.97	86.9	139	
599.00 > 99.00	5.048	5.030	0.018	1.142	8323		3.09(1.49-4.46)		106	
D 43 13C2 PFUnA										
565.00 > 520.00	5.066	5.057	0.009	1.244	4091977	2.42		96.6	9380	
45 Perfluoroundecanoic acid										M
563.00 > 519.00	5.066	5.066	0.0	1.000	48394	0.0410	Target=7.56	82.0	26.1	M
563.00 > 169.00	5.084	5.066	0.018	1.004	7922		6.11(3.78-11.34)		43.0	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.075	5.066	0.009	1.246	1725663	2.29		91.4	1898	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.084	5.075	0.009	1.002	231703	0.4750		95.0	2429	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.202	5.184	0.018	1.177	95691	0.0423		89.8	374	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.202	5.193	0.009	1.278	5874870	11.6		92.8	3080	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.220	5.211	0.009	1.004	27317	0.0555		111	51.0	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.230	5.220	0.010	1.284	1355534	2.13		85.4	91.0	
50 NMeFOSA										
512.00 > 169.00	5.230	5.220	0.010	1.000	27168	0.0532		106	71.9	
D 56 13C2 PFDoA										
615.00 > 570.00	5.340	5.331	0.009	1.311	3552573	2.37		94.7	9319	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.349	5.340	0.009	1.002	74276	0.0533	Target=7.18	107	12.0	
613.00 > 169.00	5.349	5.340	0.009	1.002	7732		9.61(3.59-10.76)		102	
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.367	5.358	0.009	1.125	24970	0.0443		91.9	535	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.375	5.367	0.008	1.320	6600689	10.6		85.1	4898	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.383	5.375	0.008	1.001	24492	0.0453		90.6	50.7	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.394	5.383	0.011	1.325	1294536	2.01		80.3	574	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.405	5.394	0.011	1.002	26033	0.0502		100	53.6	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.567	5.555	0.012	1.260	11233	0.0526	Target=0.79	109	144	
699.00 > 99.00	5.567	5.555	0.012	1.260	11503		0.98(0.39-1.18)		295	
60 Perfluorotridecanoic acid										M
663.00 > 619.00	5.605	5.592	0.013	1.050	53983	0.0481	Target=6.63	96.3	9.4	M
663.00 > 169.00	5.605	5.592	0.013	1.050	10425		5.18(3.32-9.95)		175	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.830	5.830	0.0	1.432	2320379	2.37		94.6	5143	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.830	5.830	0.0	1.000	43972	0.0474	Target=8.46	94.7	10.8	
713.00 > 219.00	5.830	5.830	0.0	1.000	5583		7.88(4.23-12.69)		235	

Report Date: 08-Jun-2020 08:14:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d

Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C2 PFHxDA										
815.00 > 770.00	6.254	6.245	0.009	1.536	1871301	2.30		92.1	4536	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.254	6.245	0.009	1.000	51999	0.0583	Target=7.92	117	6.6	
813.00 > 169.00	6.254	6.245	0.009	1.000	5327		9.76(3.96-11.88)		90.5	
65 Perfluorooctadecanoic acid										M
913.00 > 869.00	6.643	6.636	0.007	1.062	17141	0.0465	Target=10.24	93.1	3.7	
913.00 > 169.00	6.643	6.636	0.007	1.062	1768		9.70(5.12-15.36)		52.5	M

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LLCCVL_00019 Amount Added: 1.00 Units: mL

Report Date: 08-Jun-2020 08:14:50 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d

Injection Date: 05-Jun-2020 14:19:27 Instrument ID: A15

Lims ID: CCVL

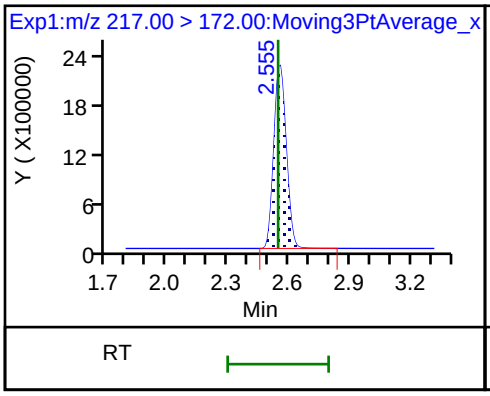
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 51 Worklist Smp#: 2

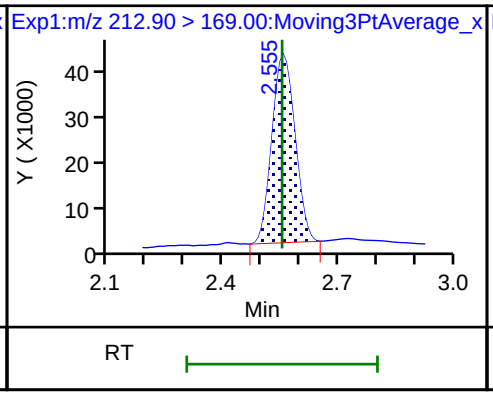
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

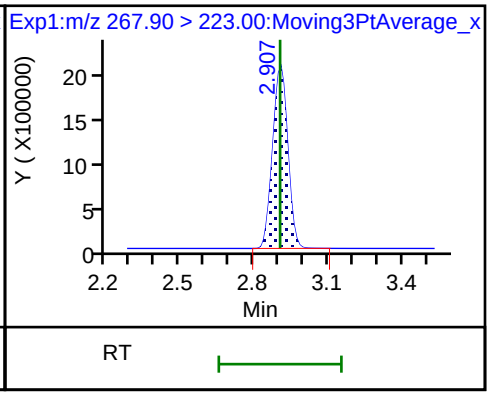
D 1 13C4 PFBA



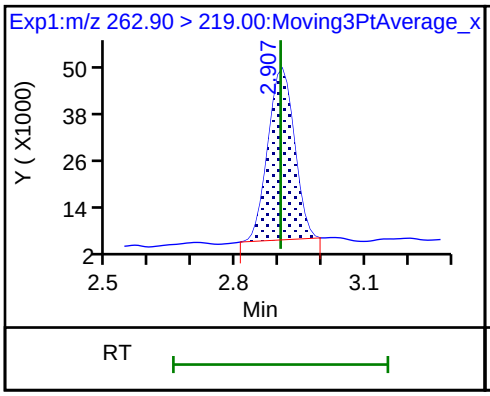
2 Perfluorobutanoic acid



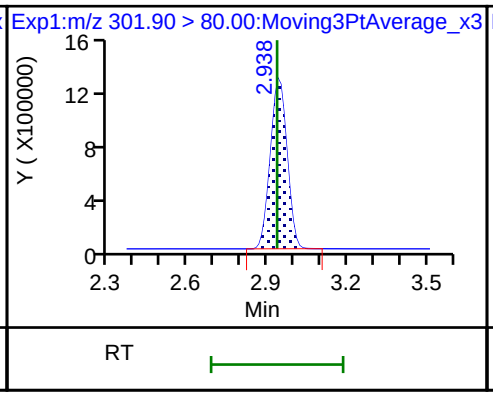
D 4 13C5 PFPeA



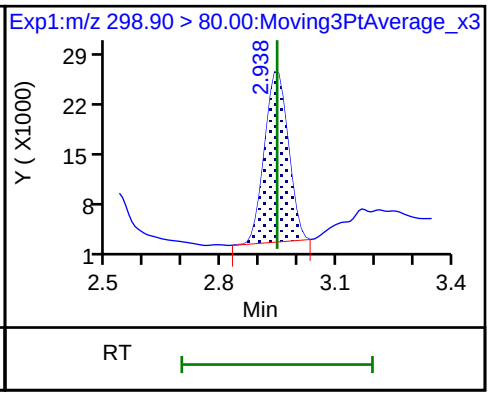
5 Perfluoropentanoic acid (M)



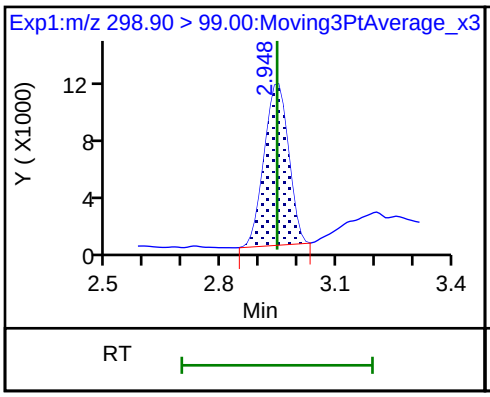
D 9 13C3 PFBS



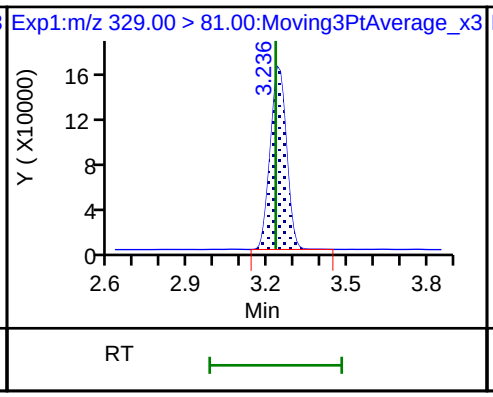
6 Perfluorobutanesulfonic acid



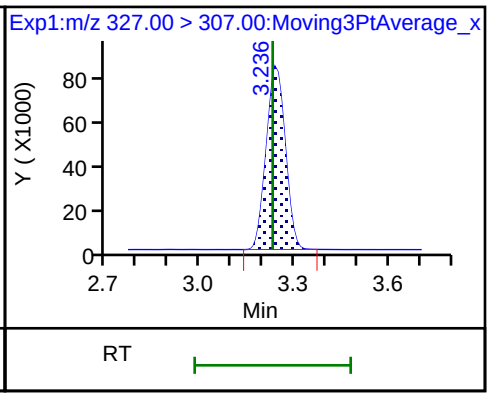
6 Perfluorobutanesulfonic acid



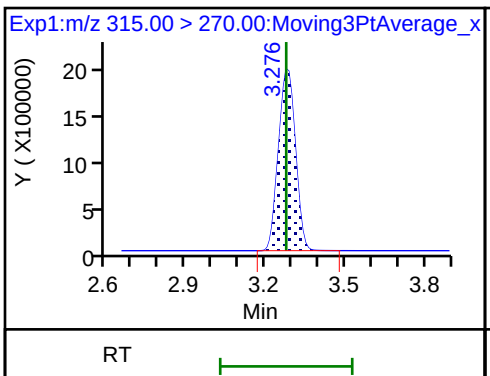
D 7 M2-4:2 FTS



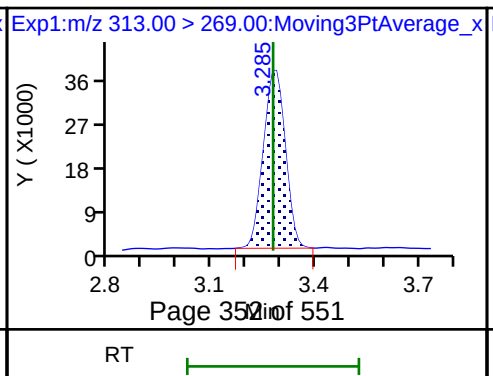
8 1H,1H,2H,2H-perfluorohexanesulfo



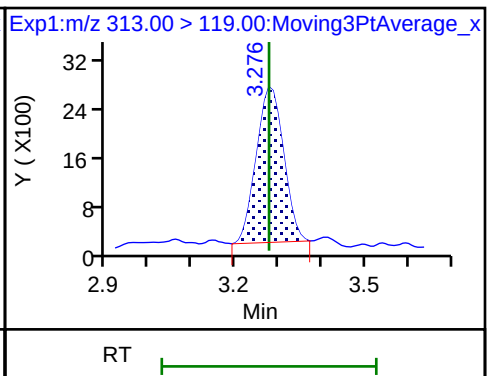
D 11 13C2 PFHxA



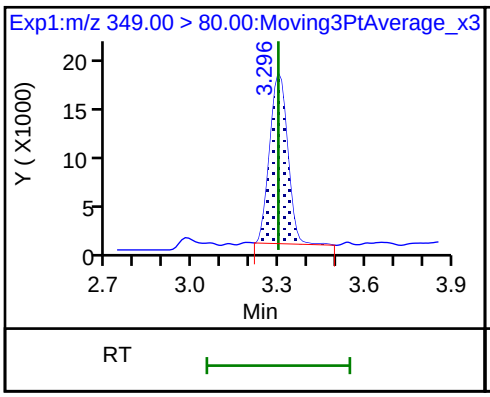
10 Perfluorohexanoic acid (M)



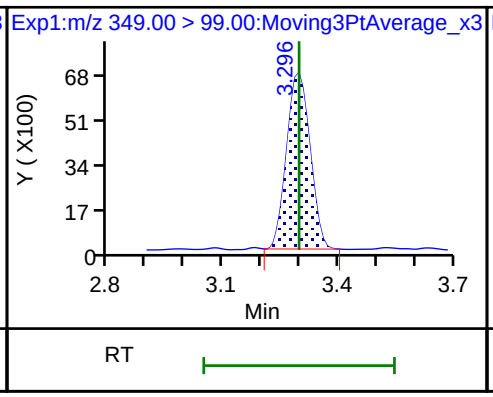
10 Perfluorohexanoic acid (M)



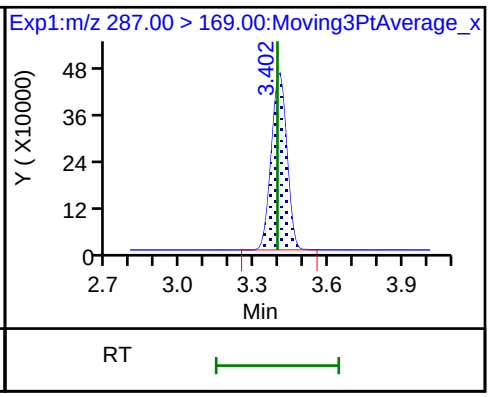
12 Perfluoropentanesulfonic acid



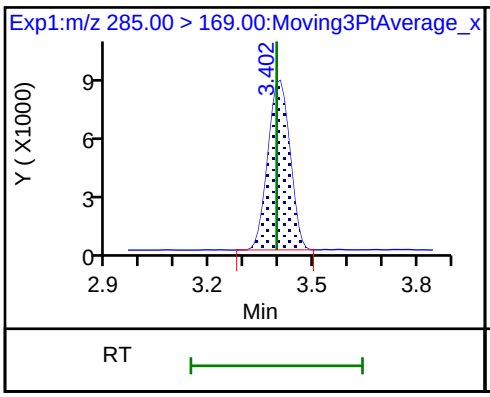
12 Perfluoropentanesulfonic acid



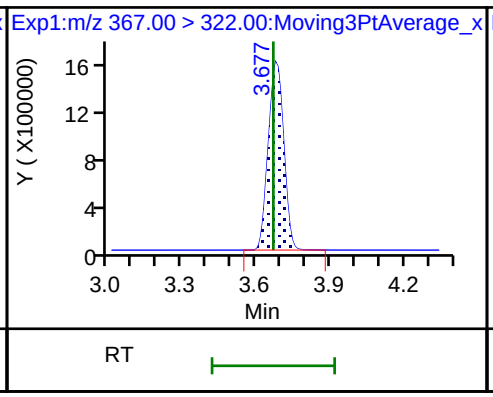
D 14 13C3 HFPO-DA



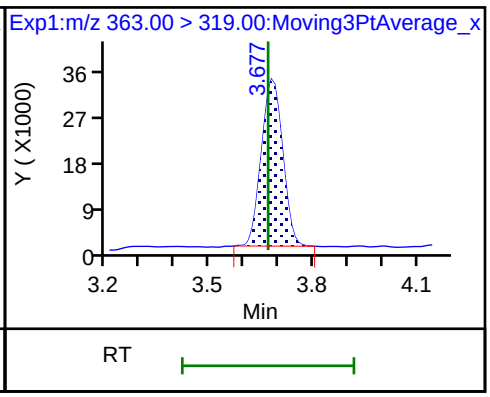
13 Perfluoro(2-propoxypropanoic) ac



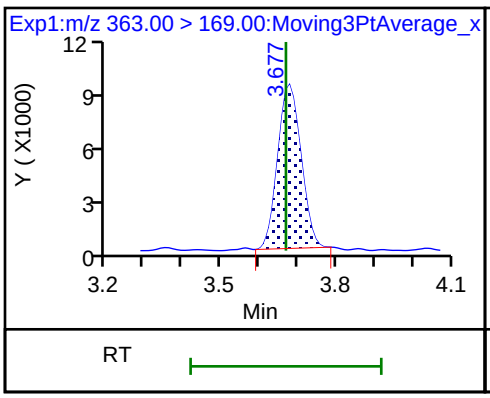
D 18 13C4 PFHpA



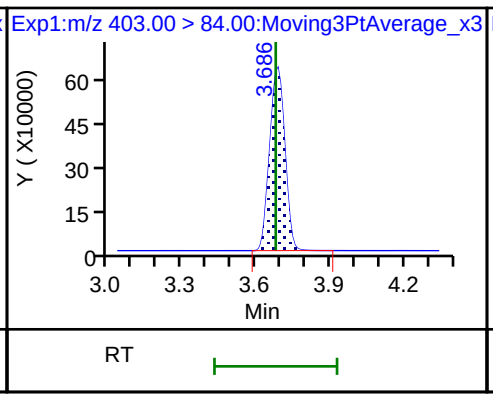
16 Perfluoroheptanoic acid



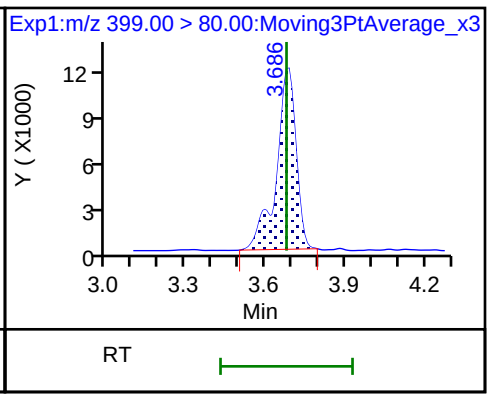
16 Perfluoroheptanoic acid



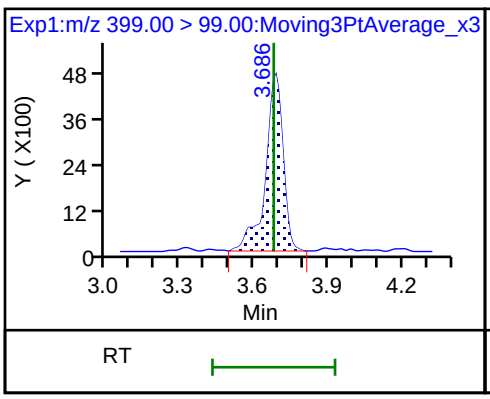
D 17 18O2 PFHxS



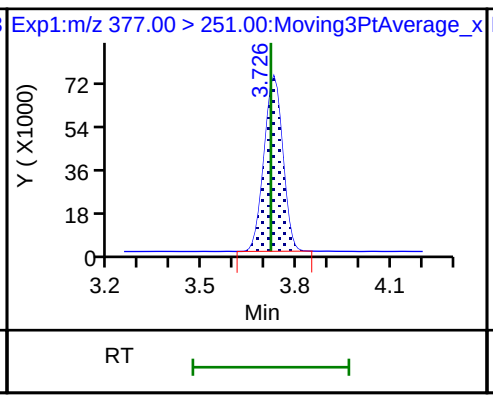
15 Perfluorohexanesulfonic acid (M)



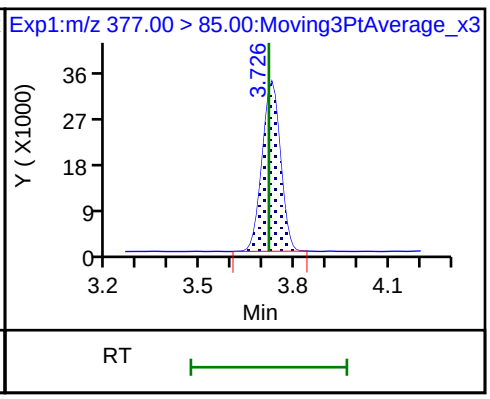
15 Perfluorohexanesulfonic acid



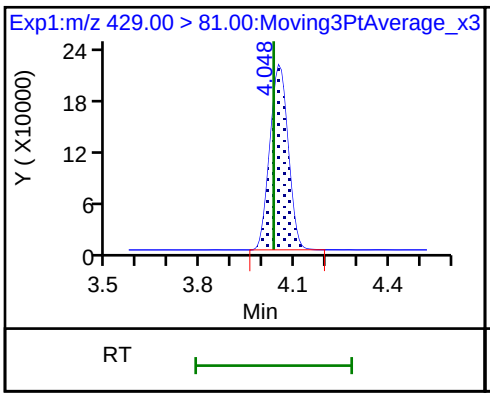
19 DONA



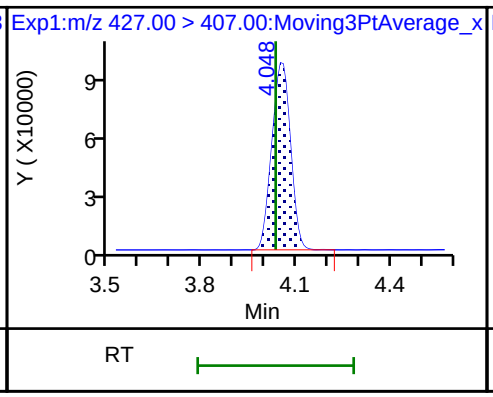
19 DONA



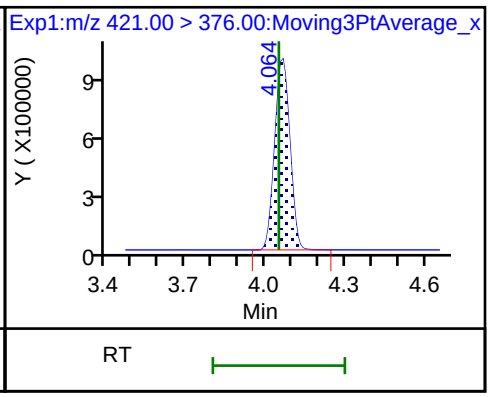
D 20 M2-6:2 FTS



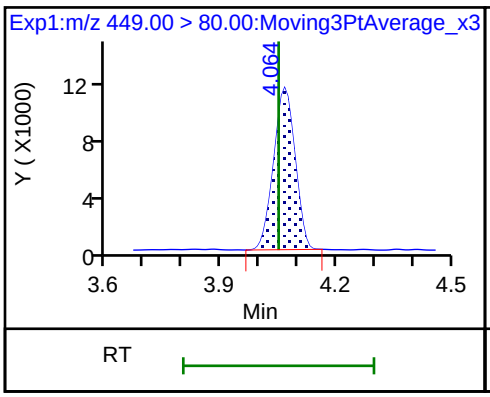
21 1H,1H,2H,2H-perfluorooctanesulfo



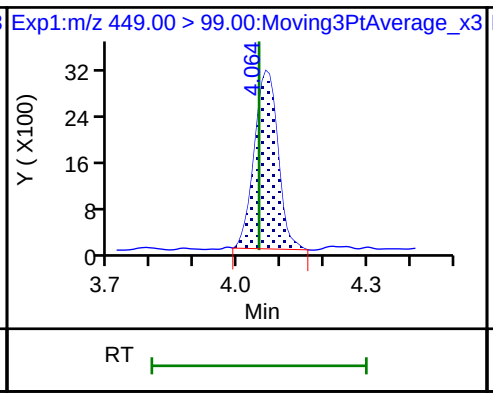
$ 26 13C8 PFOA



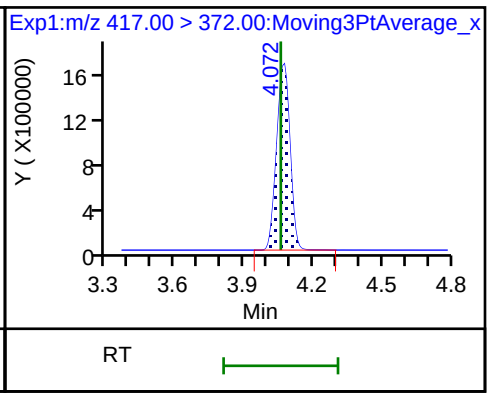
24 Perfluoroheptanesulfonic acid



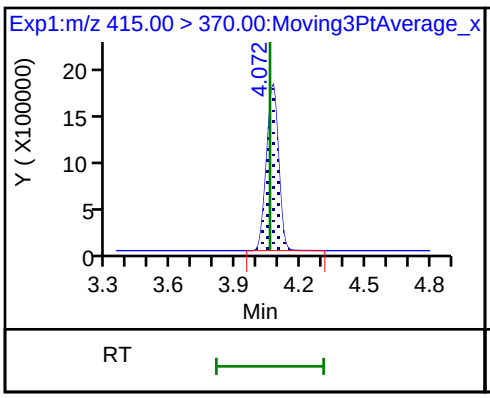
24 Perfluoroheptanesulfonic acid



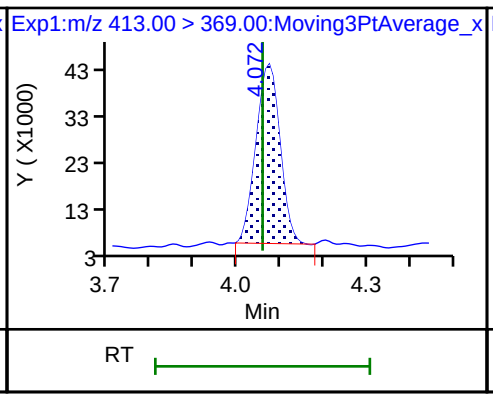
D 25 13C4 PFOA



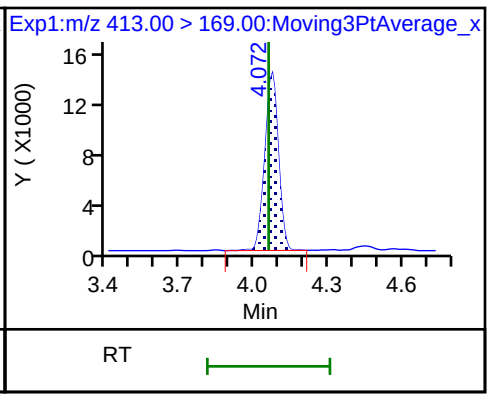
* 23 13C2 PFOA



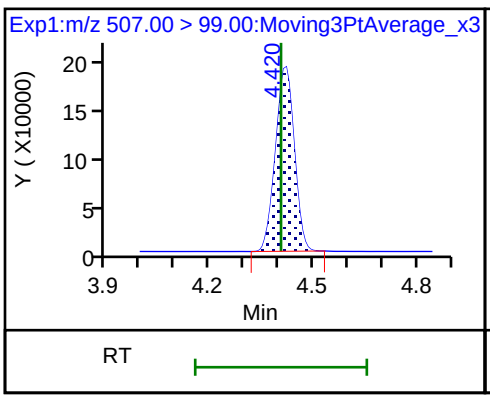
22 Perfluorooctanoic acid (M)



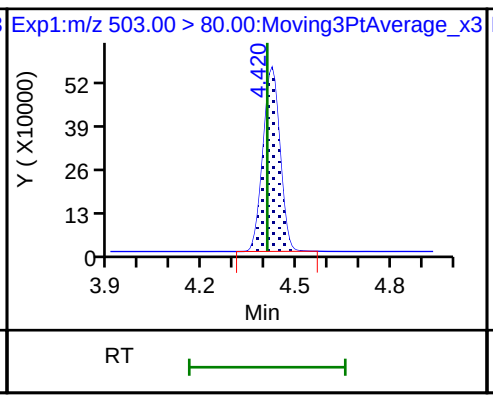
22 Perfluorooctanoic acid



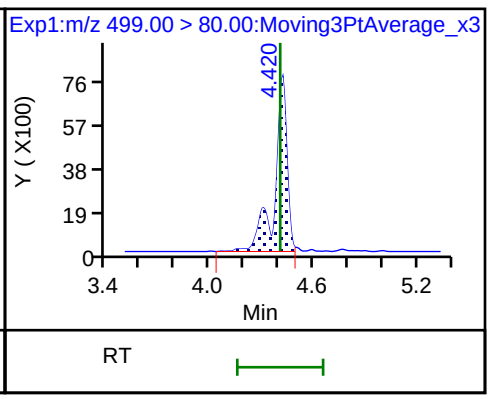
$ 28 13C8 PFOS



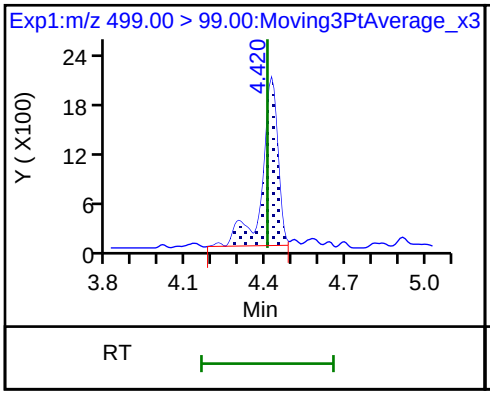
D 27 13C4 PFOS



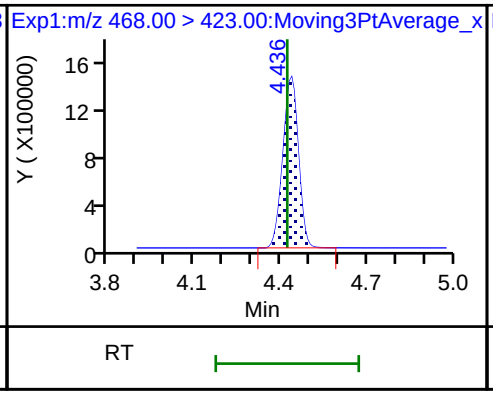
29 Perfluorooctanesulfonic acid (M)



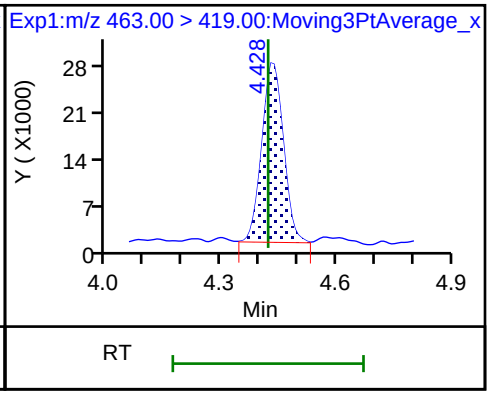
29 Perfluorooctanesulfonic acid (M)



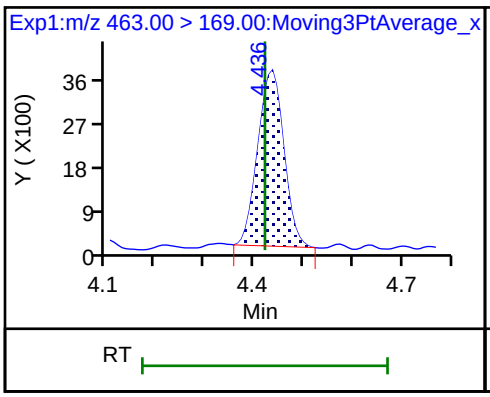
D 30 13C5 PFNA



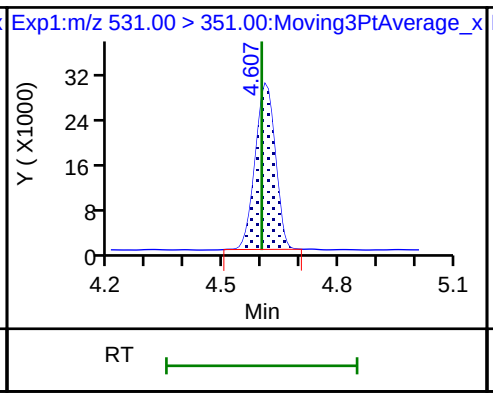
31 Perfluorononanoic acid



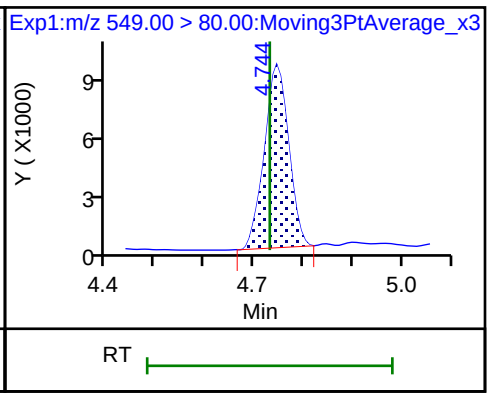
31 Perfluorononanoic acid



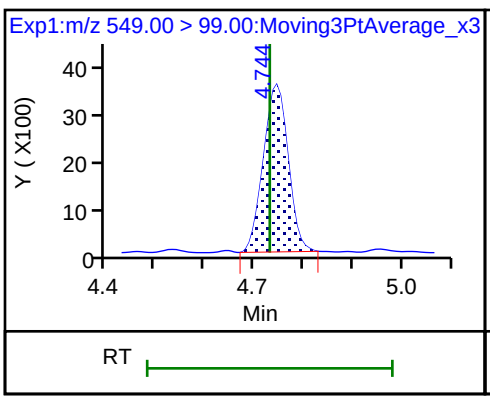
32 9-Chlorohexadecafluoro-3-oxanona



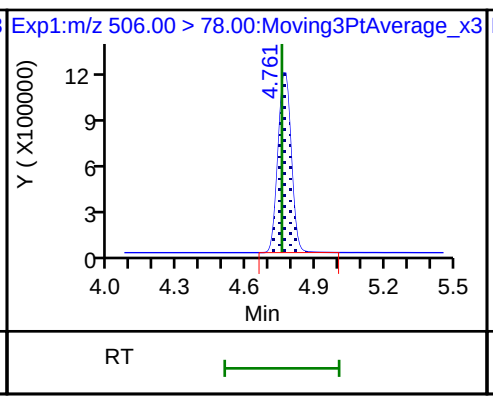
35 Perfluorononanesulfonic acid



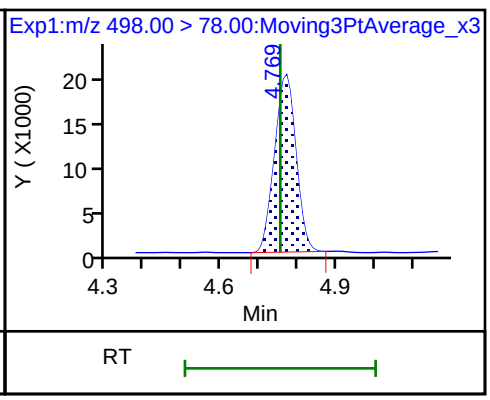
35 Perfluorononanesulfonic acid



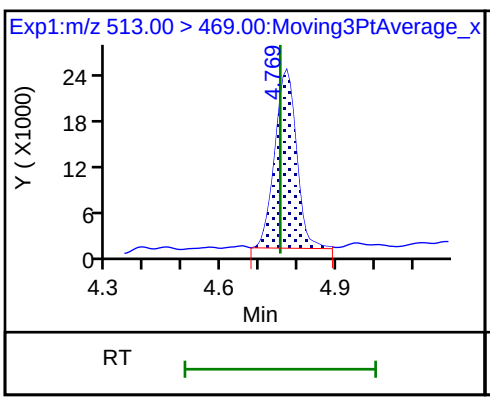
D 33 13C8 FOSA



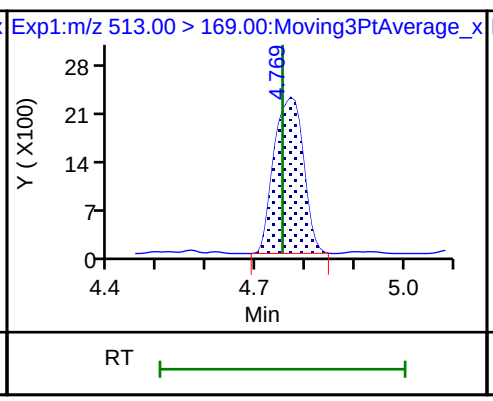
34 Perfluorooctanesulfonamide



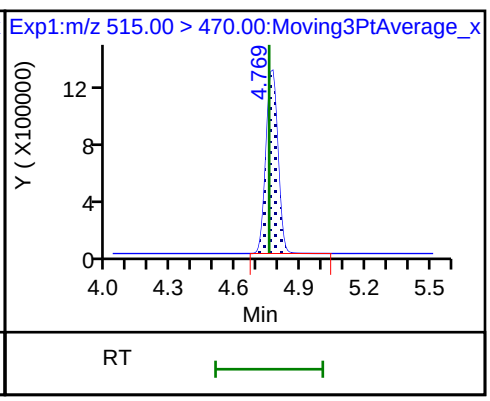
37 Perfluorodecanoic acid



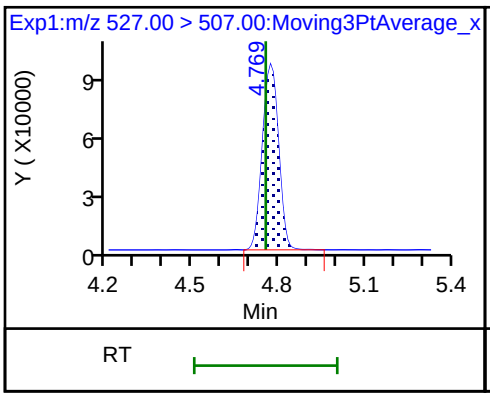
37 Perfluorodecanoic acid



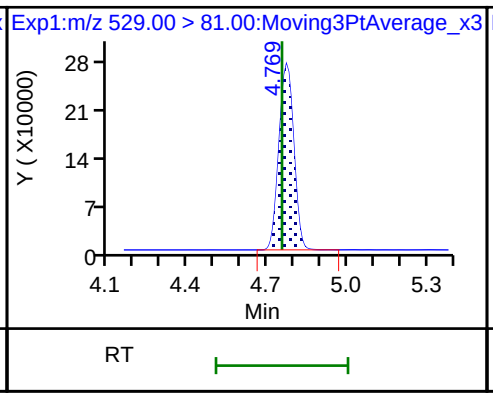
D 39 13C2 PFDA



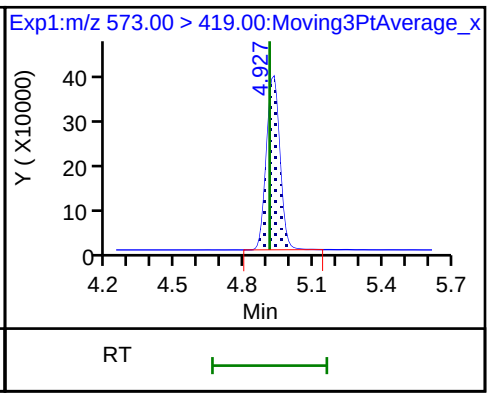
36 1H,1H,2H,2H-perfluorodecanesulfo



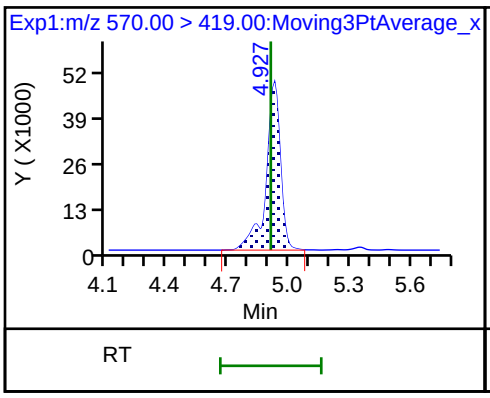
D 38 M2-8:2 FTS



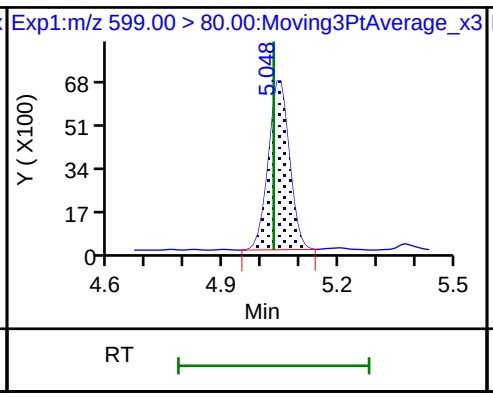
D 40 d3-NMeFOSAA



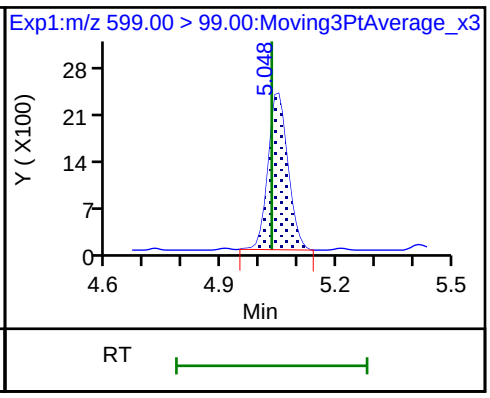
41 N-methylperfluorooctanesulfonami (M)



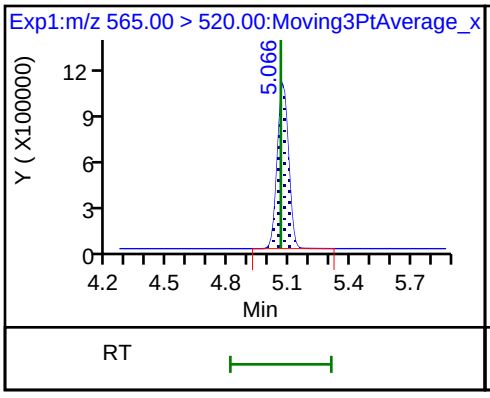
42 Perfluorodecanesulfonic acid



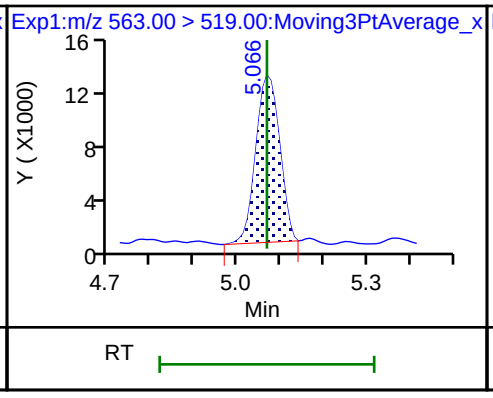
42 Perfluorodecanesulfonic acid



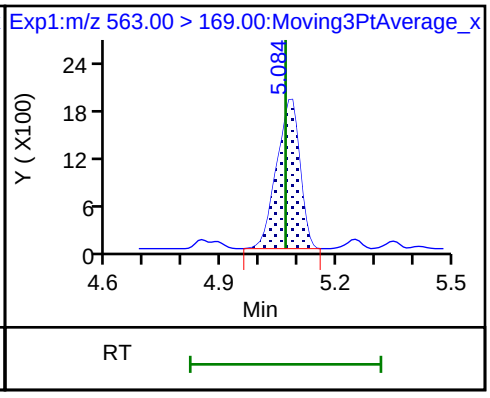
D 43 13C2 PFUnA



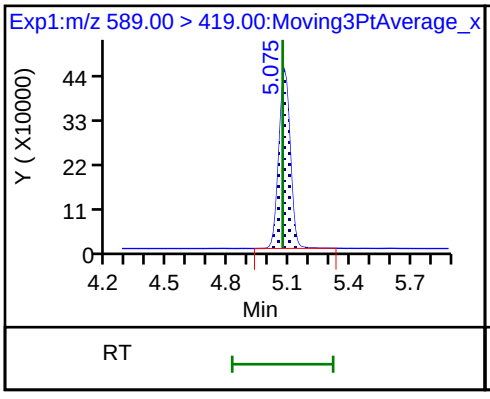
45 Perfluoroundecanoic acid (M)



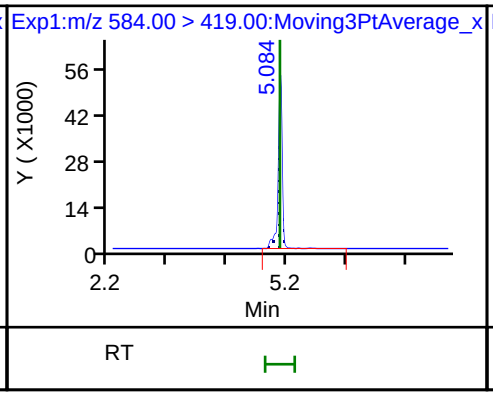
45 Perfluoroundecanoic acid



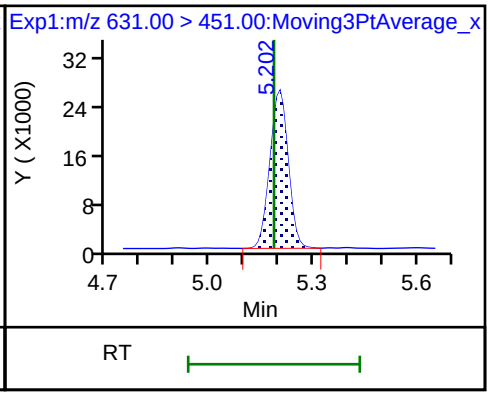
D 44 d5-NEtFOSAA



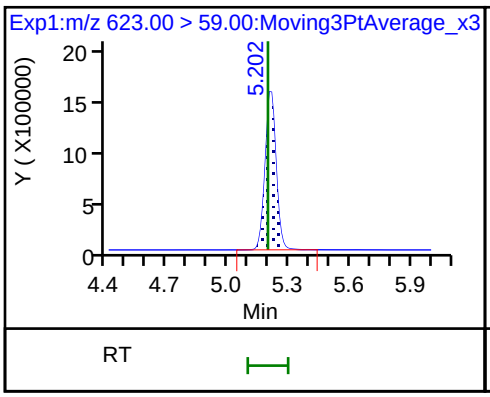
46 N-ethylperfluorooctanesulfonamid



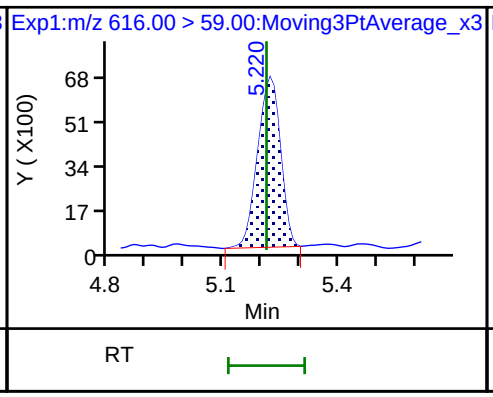
51 11-Chloroeicosafluoro-3-oxaundec



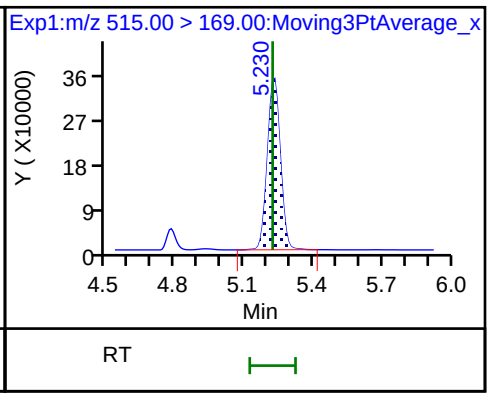
D 47 d7-N-MeFOSE-M



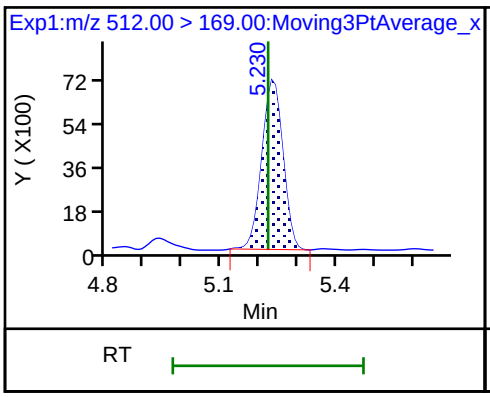
48 2-(N-methylperfluoro-1-octanesul



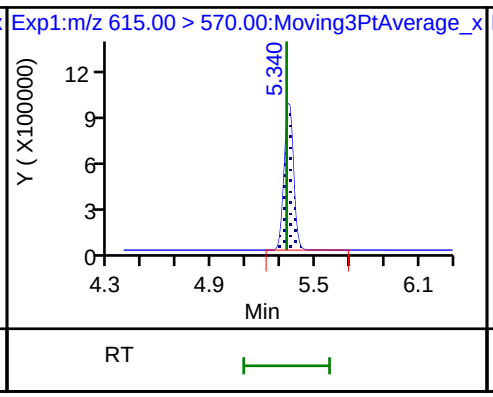
D 49 d-N-MeFOSA-M



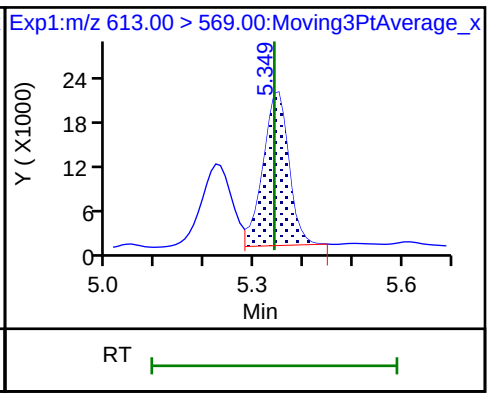
50 NMeFOSA



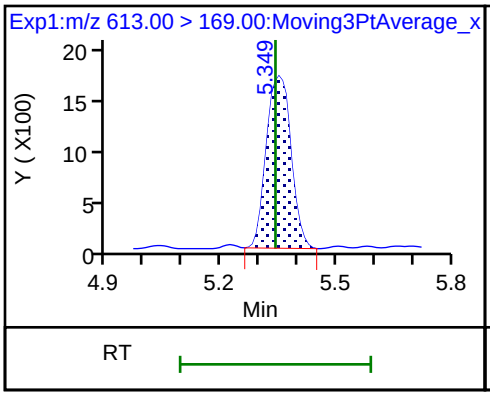
D 56 13C2 PFDoA



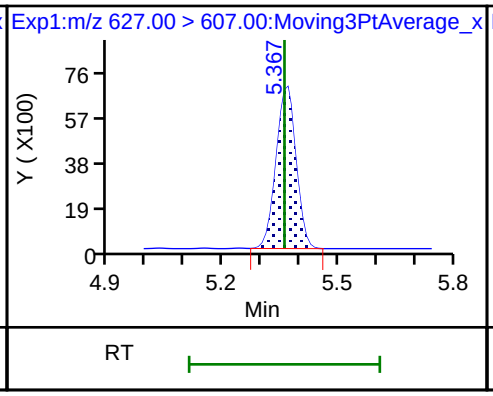
57 Perfluorododecanoic acid



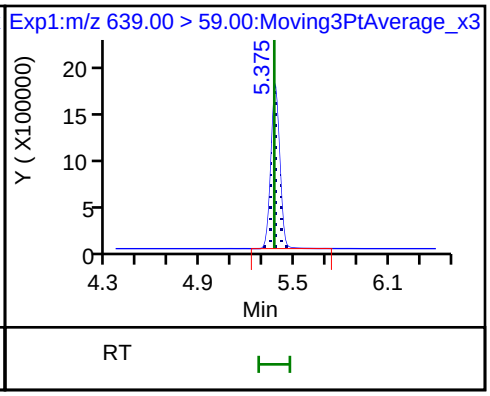
57 Perfluorododecanoic acid



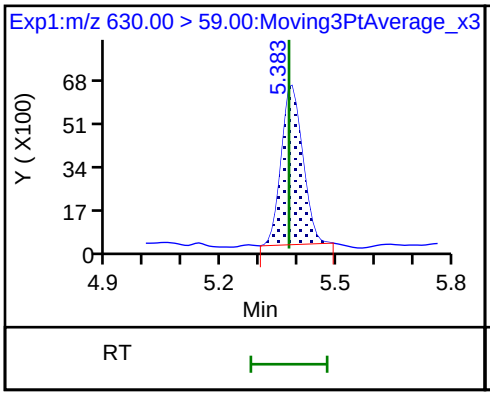
58 1H,1H,2H,2H-perfluorododecanesul



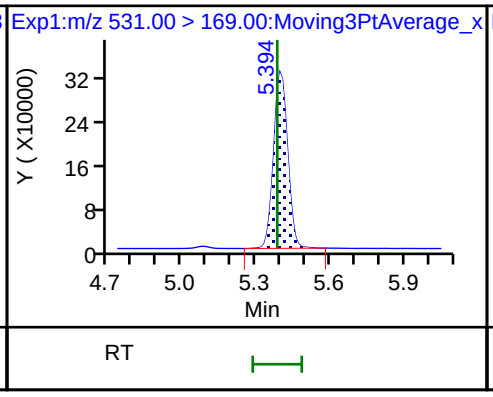
D 52 d9-N-EtFOSE-M



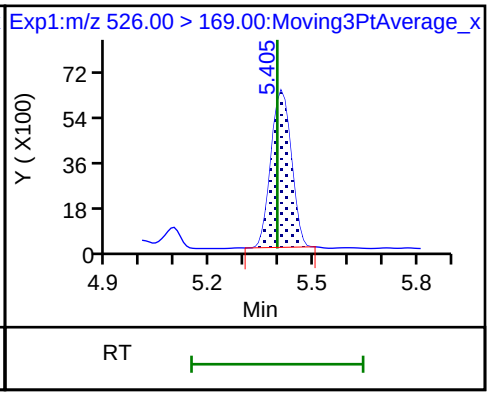
53 2-(N-ethylperfluoro-1-octanesulf



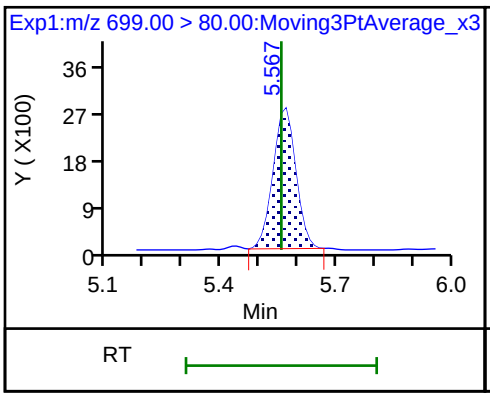
D 54 d-N-EtFOSA-M



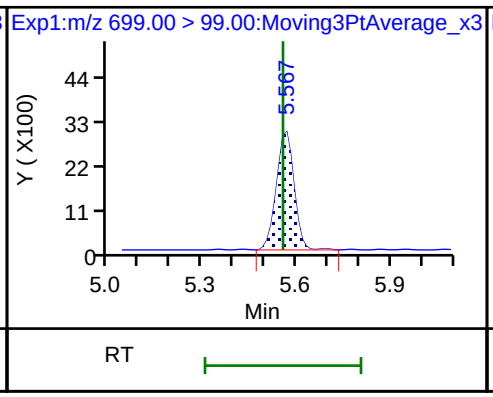
55 N-ethylperfluoro-1-octanesulfona



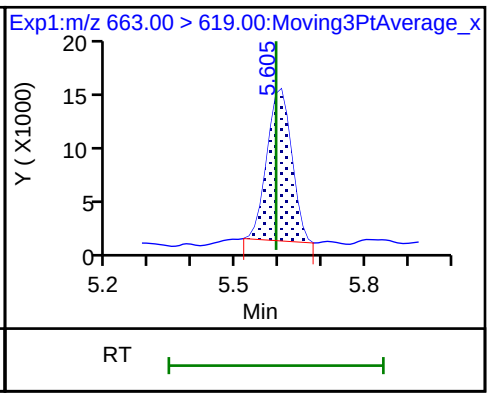
59 Perfluorododecanesulfonic acid (



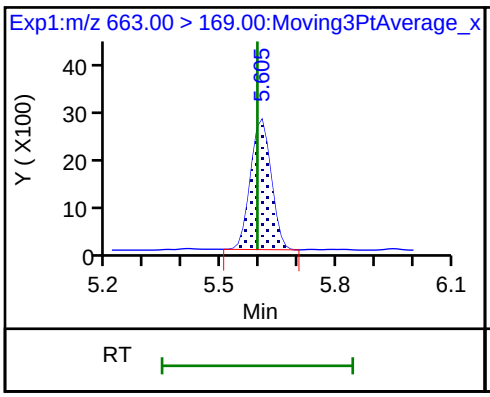
59 Perfluorododecanesulfonic acid (



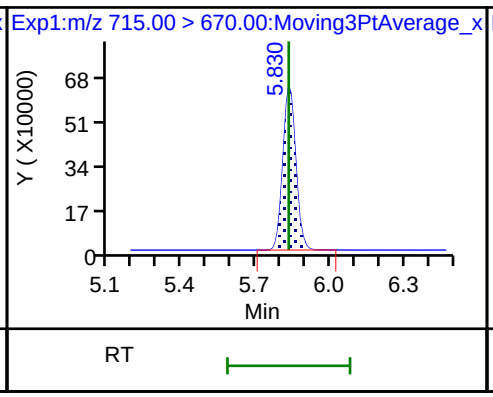
60 Perfluorotridecanoic acid (M)



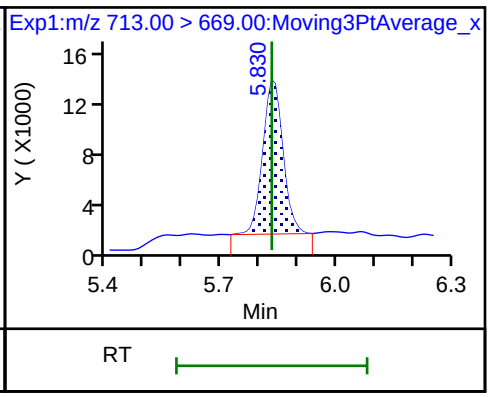
60 Perfluorotridecanoic acid



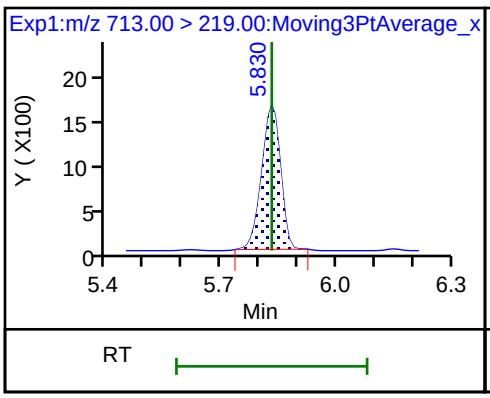
D 61 13C2 PFTeDA



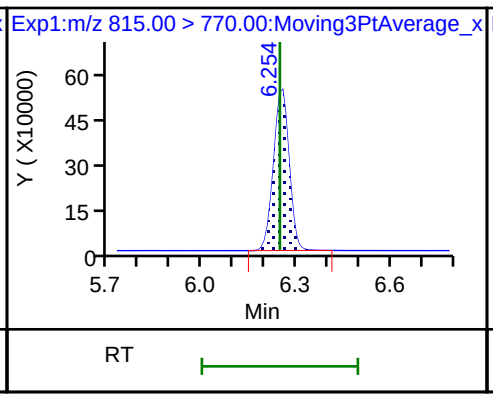
62 Perfluorotetradecanoic acid



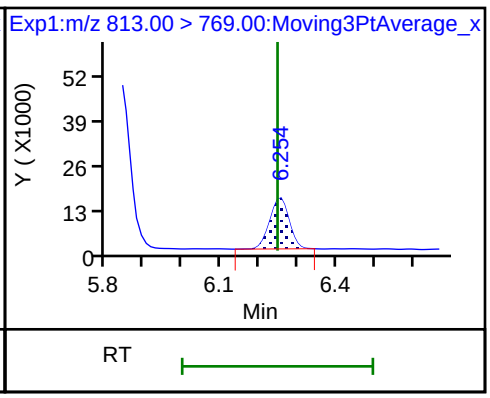
62 Perfluorotetradecanoic acid



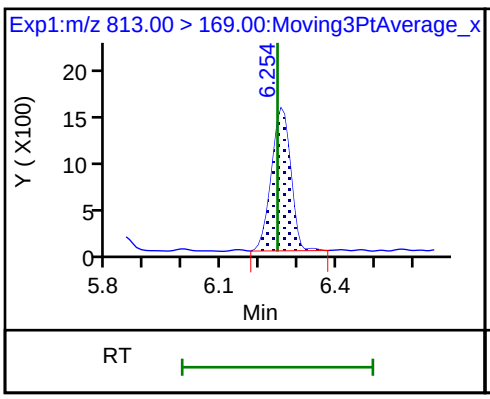
D 64 13C2 PFHxDA



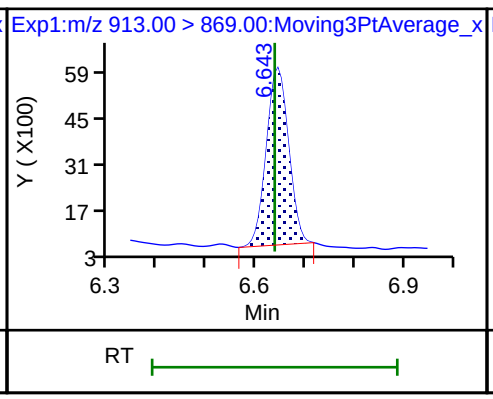
63 Perfluorohexadecanoic acid



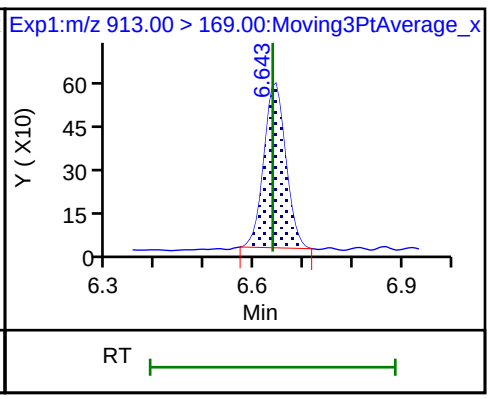
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid (M)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

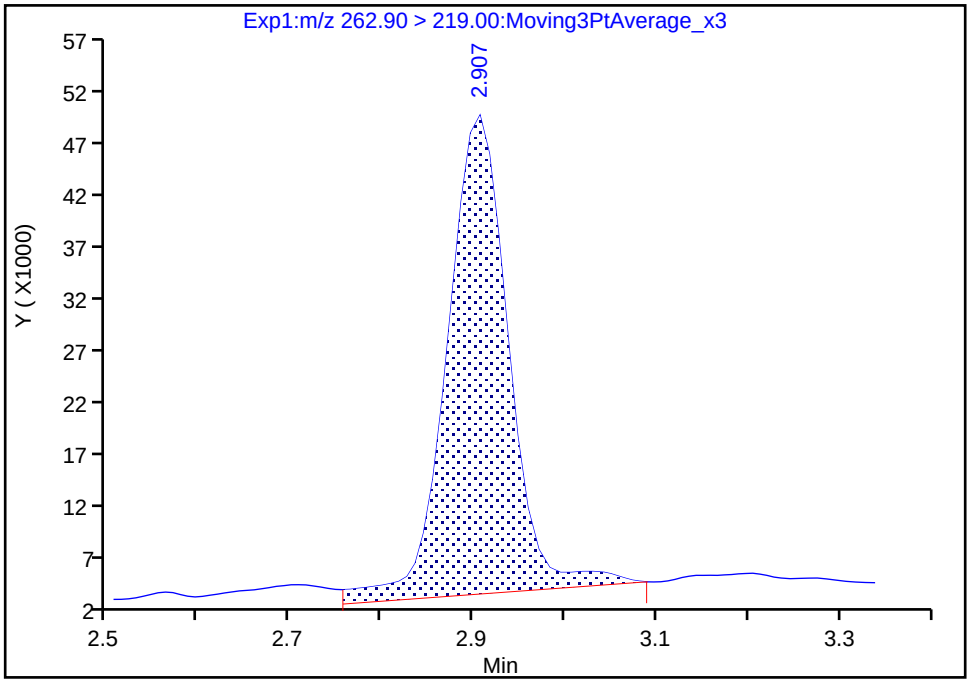
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d				
Injection Date:	05-Jun-2020 14:19:27	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00 mm)	Detector	EXP1		

5 Perfluoropentanoic acid, CAS: 2706-90-3

Signal: 1

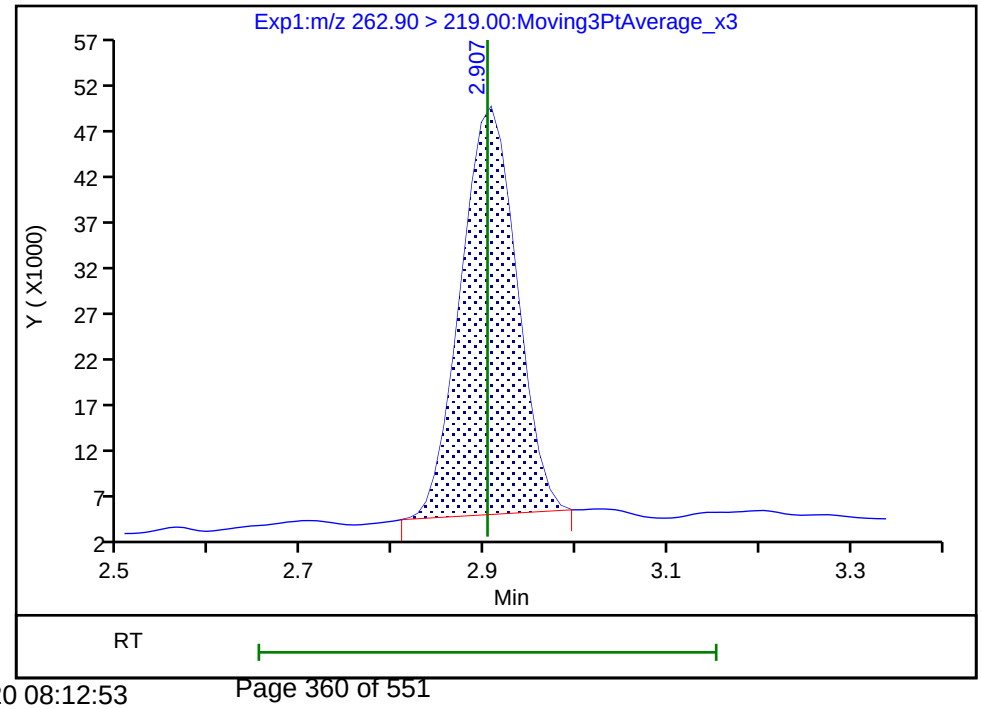
Processing Integration Results

RT: 2.91
Area: 214796
Amount: 0.060702
Amount Units: ng/ml



Manual Integration Results

RT: 2.91
Area: 187457
Amount: 0.052976
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:12:53

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

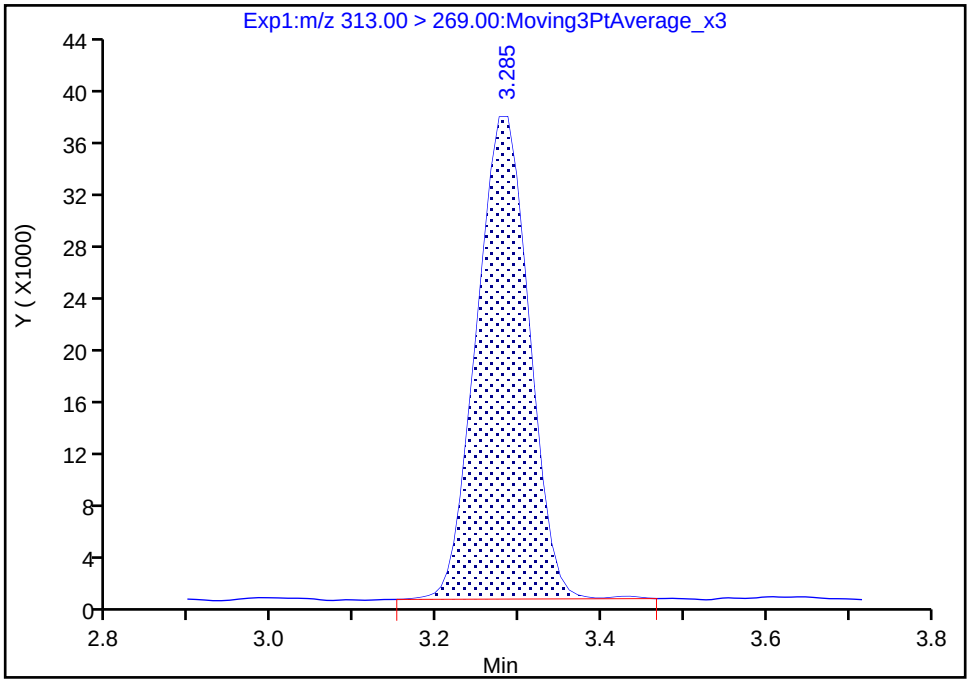
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d				
Injection Date:	05-Jun-2020 14:19:27	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 1

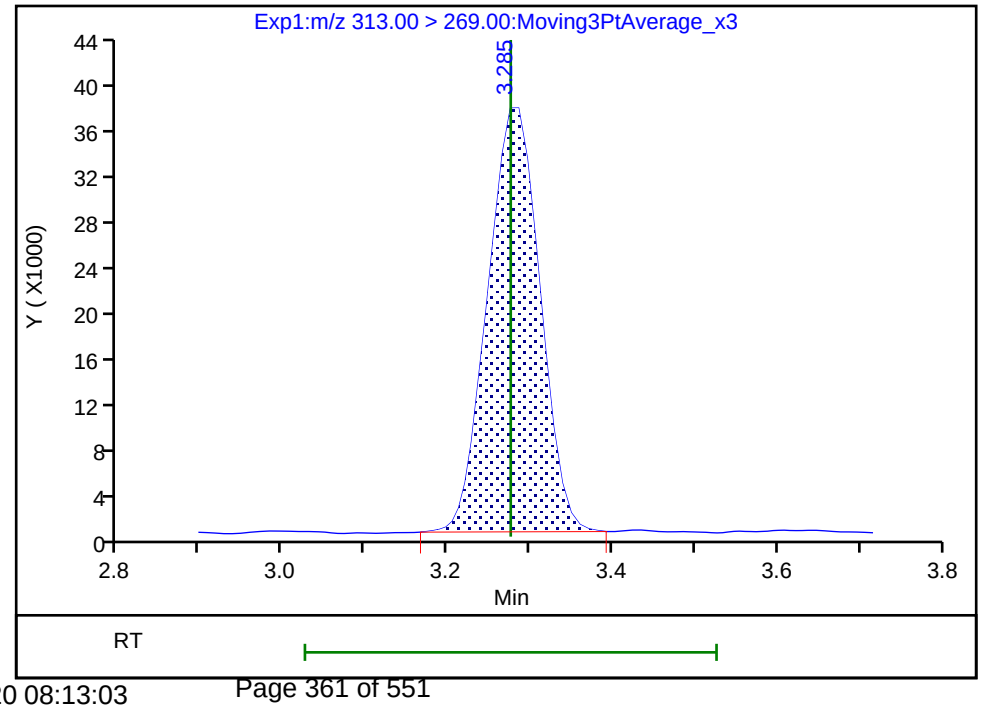
Processing Integration Results

RT: 3.29
Area: 164981
Amount: 0.050544
Amount Units: ng/ml



Manual Integration Results

RT: 3.29
Area: 164062
Amount: 0.050262
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:13:03

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

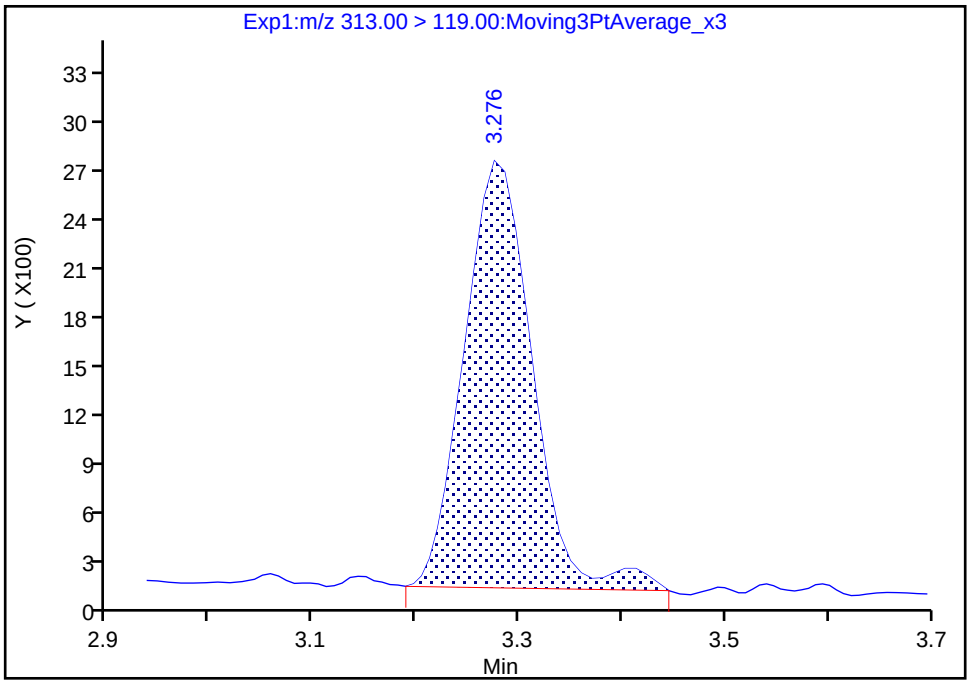
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d				
Injection Date:	05-Jun-2020 14:19:27	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

10 Perfluorohexanoic acid, CAS: 307-24-4

Signal: 2

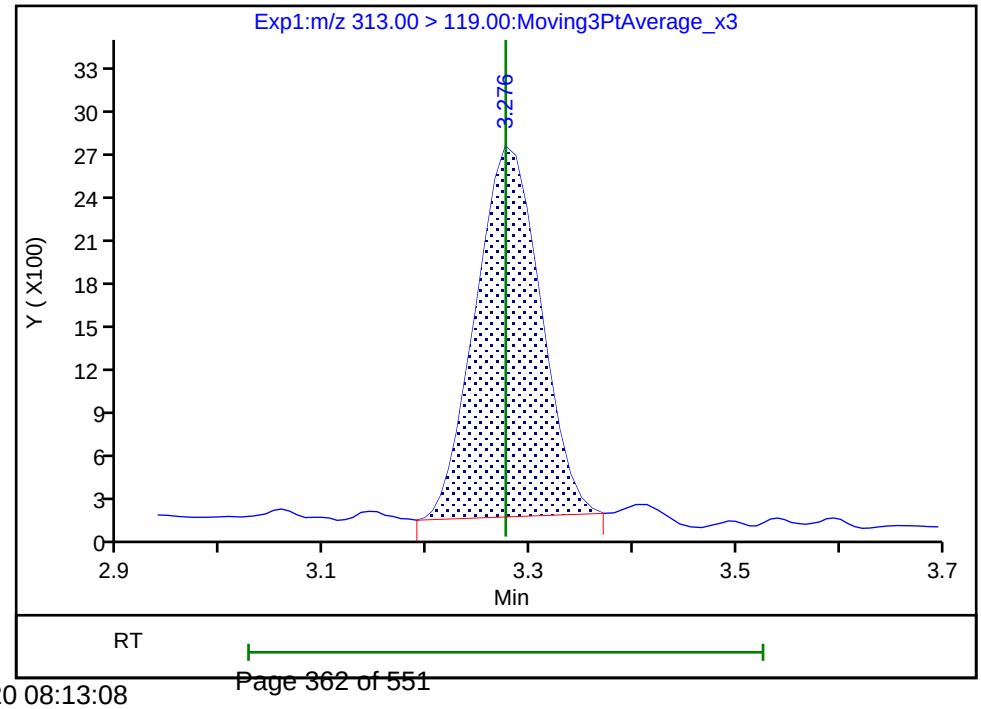
Processing Integration Results

RT: 3.28
Area: 11933
Amount: 0.050544
Amount Units: ng/ml



Manual Integration Results

RT: 3.28
Area: 11192
Amount: 0.050262
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:13:08

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

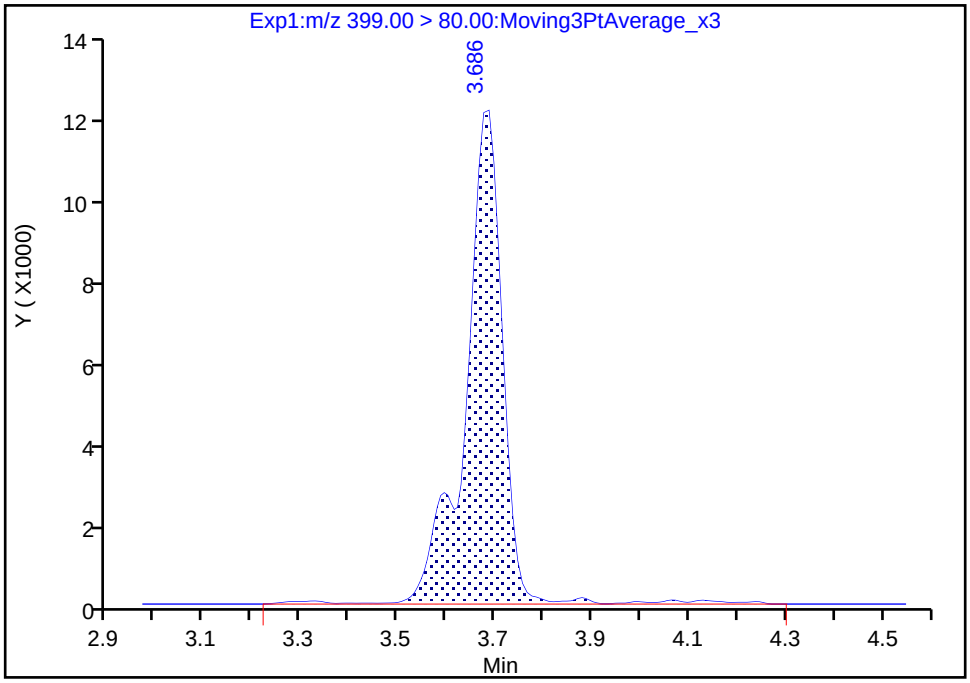
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d
Injection Date: 05-Jun-2020 14:19:27 Instrument ID: A15
Lims ID: CCVL
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

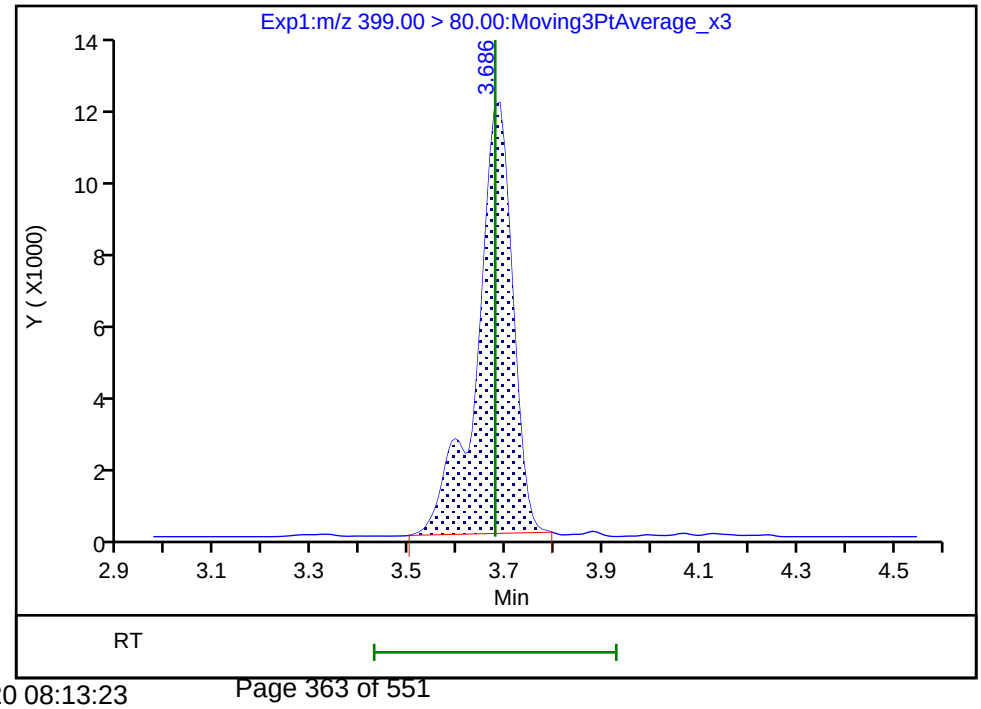
Processing Integration Results

RT: 3.69
Area: 63677
Amount: 0.049036
Amount Units: ng/ml



Manual Integration Results

RT: 3.69
Area: 60359
Amount: 0.046481
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:13:23

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

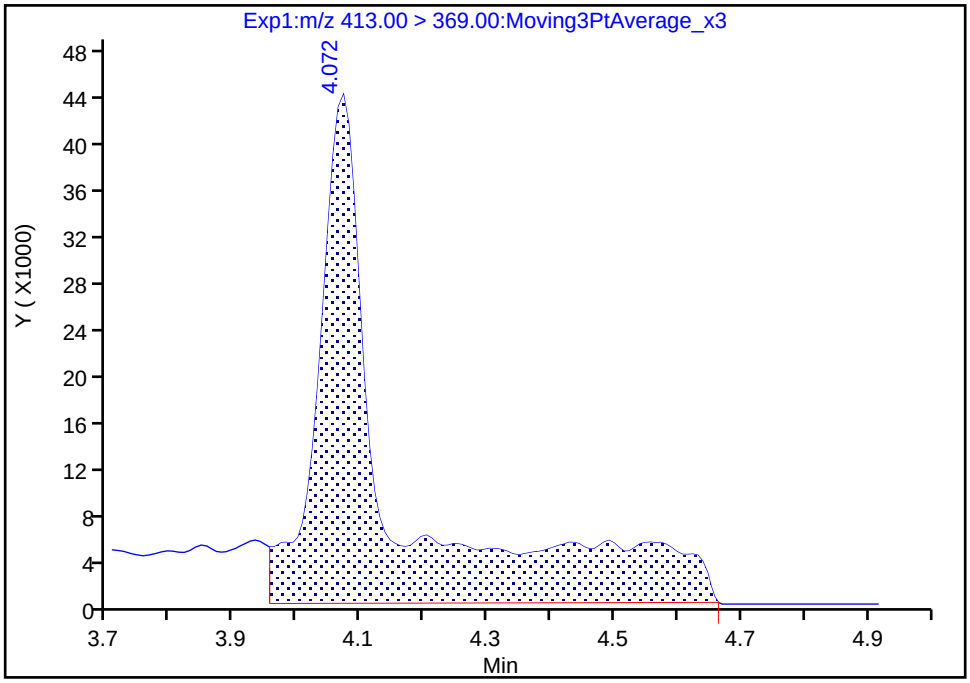
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d				
Injection Date:	05-Jun-2020 14:19:27	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

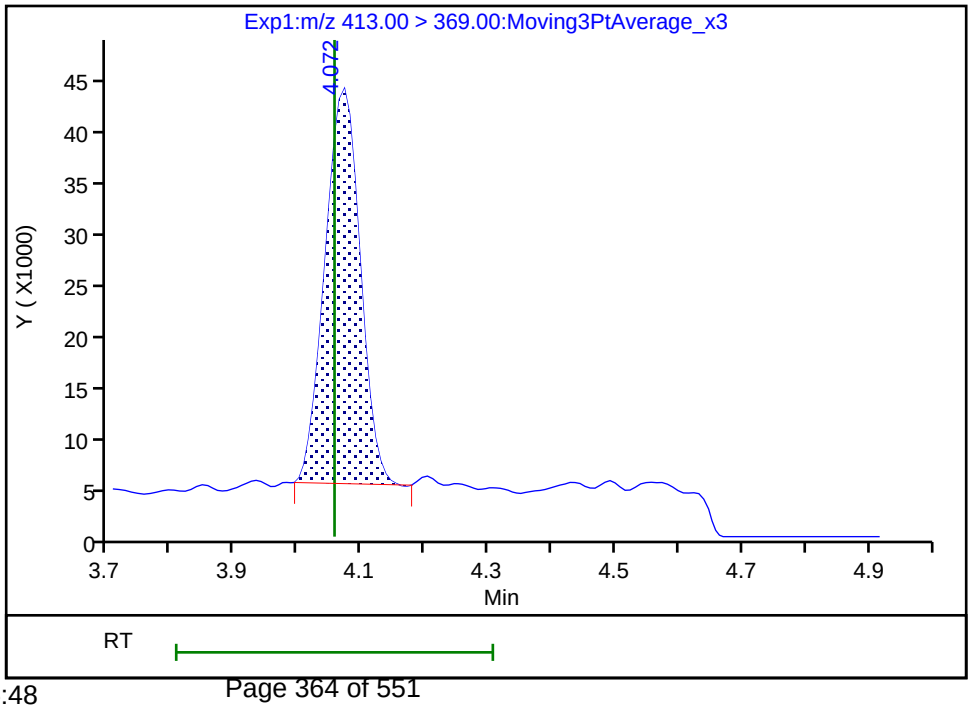
Processing Integration Results

RT: 4.07
Area: 349308
Amount: 0.123362
Amount Units: ng/ml



Manual Integration Results

RT: 4.07
Area: 147772
Amount: 0.052187
Amount Units: ng/ml



Reviewer: yuj, 06-Jun-2020 11:45:48

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

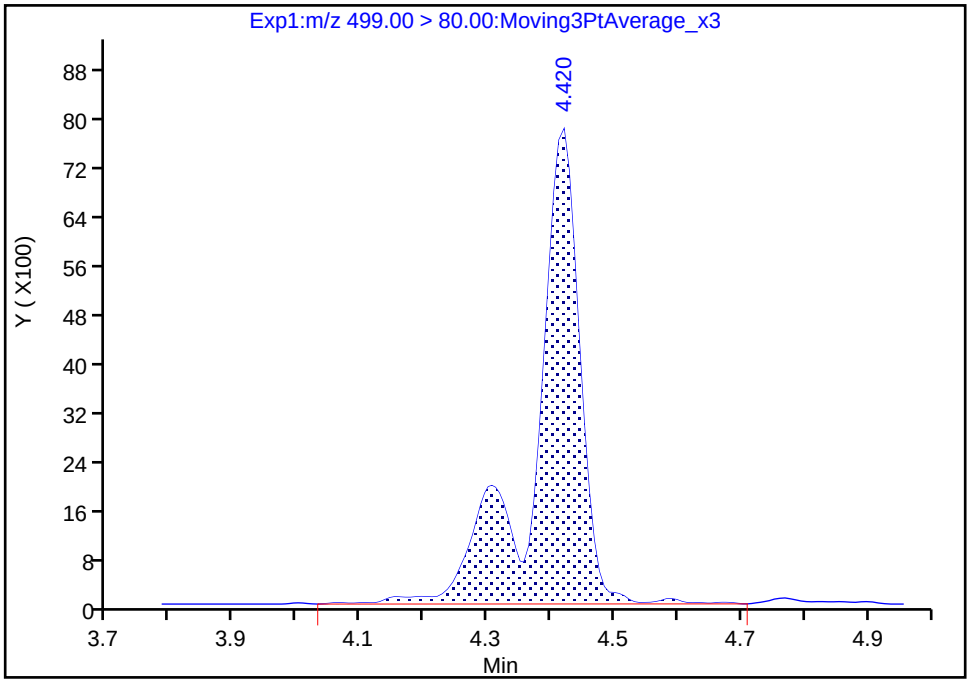
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d				
Injection Date:	05-Jun-2020 14:19:27	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00 mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

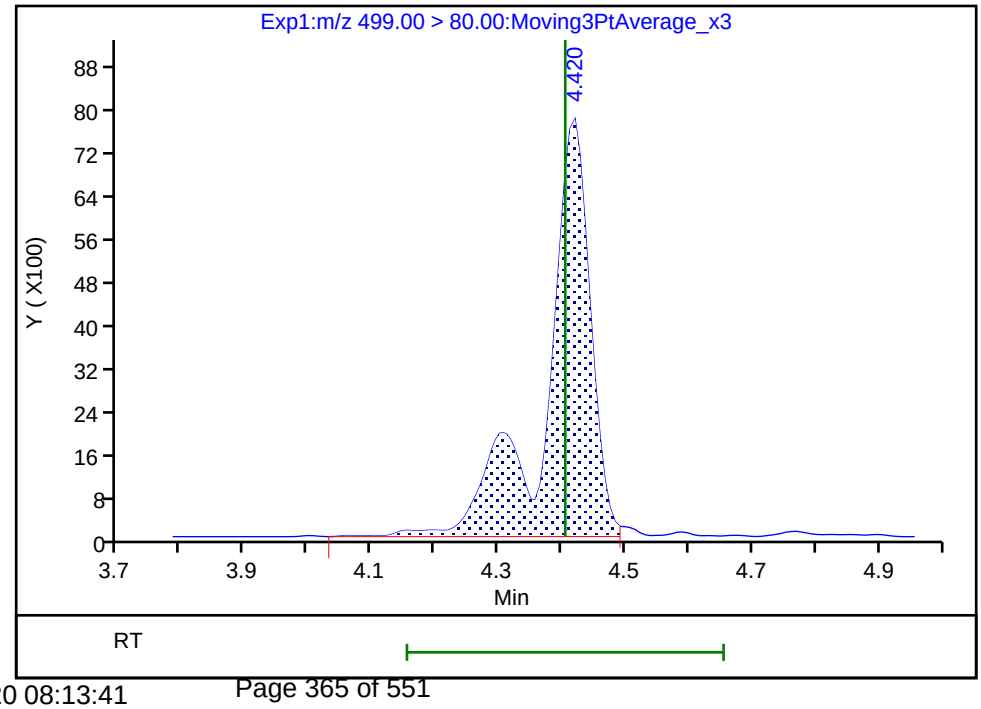
Processing Integration Results

RT: 4.42
Area: 39057
Amount: 0.045003
Amount Units: ng/ml



Manual Integration Results

RT: 4.42
Area: 38443
Amount: 0.044296
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:13:41

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

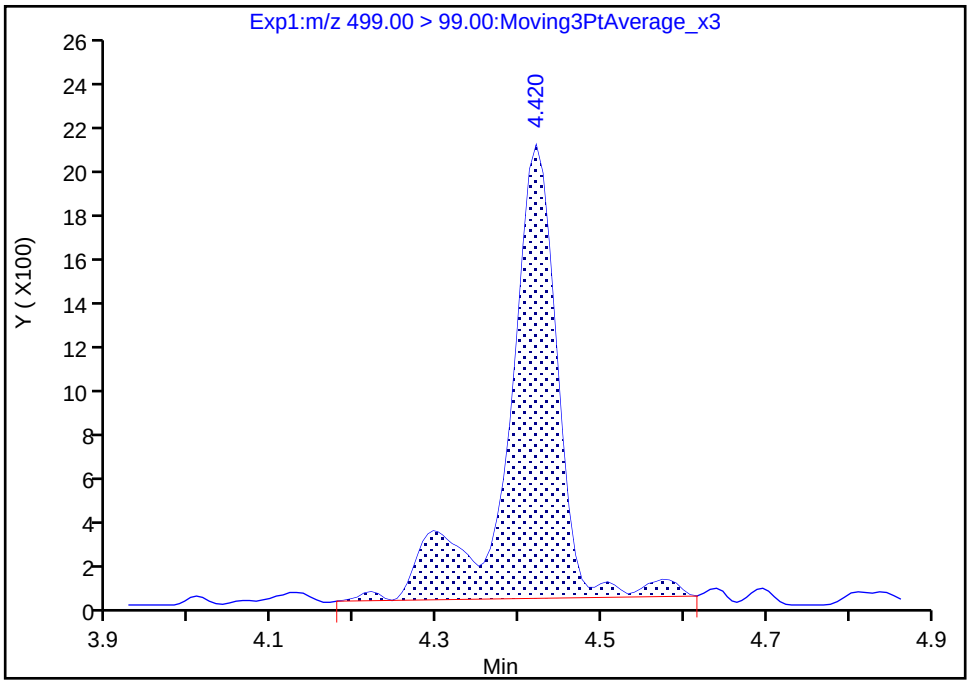
Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d
Injection Date: 05-Jun-2020 14:19:27 Instrument ID: A15
Lims ID: CCVL
Client ID:
Operator ID: SACINSTA15 ALS Bottle#: 51 Worklist Smp#: 2
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A15 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

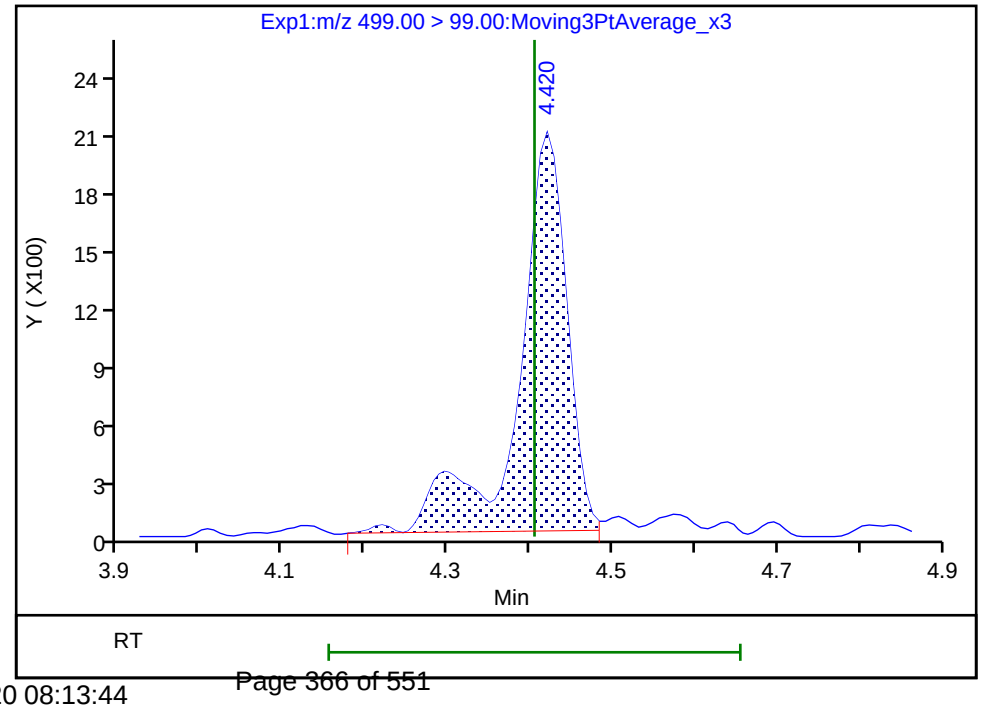
Processing Integration Results

RT: 4.42
Area: 8720
Amount: 0.045003
Amount Units: ng/ml



Manual Integration Results

RT: 4.42
Area: 8377
Amount: 0.044296
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:13:44

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

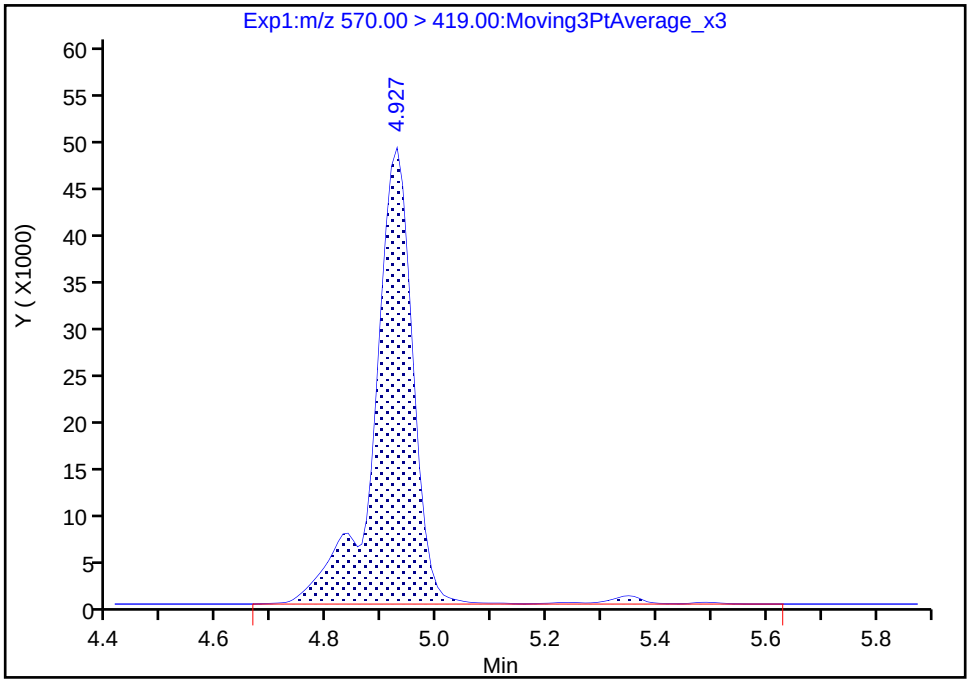
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d				
Injection Date:	05-Jun-2020 14:19:27	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 N-methylperfluorooctanesulfonami, CAS: 2355-31-9

Signal: 1

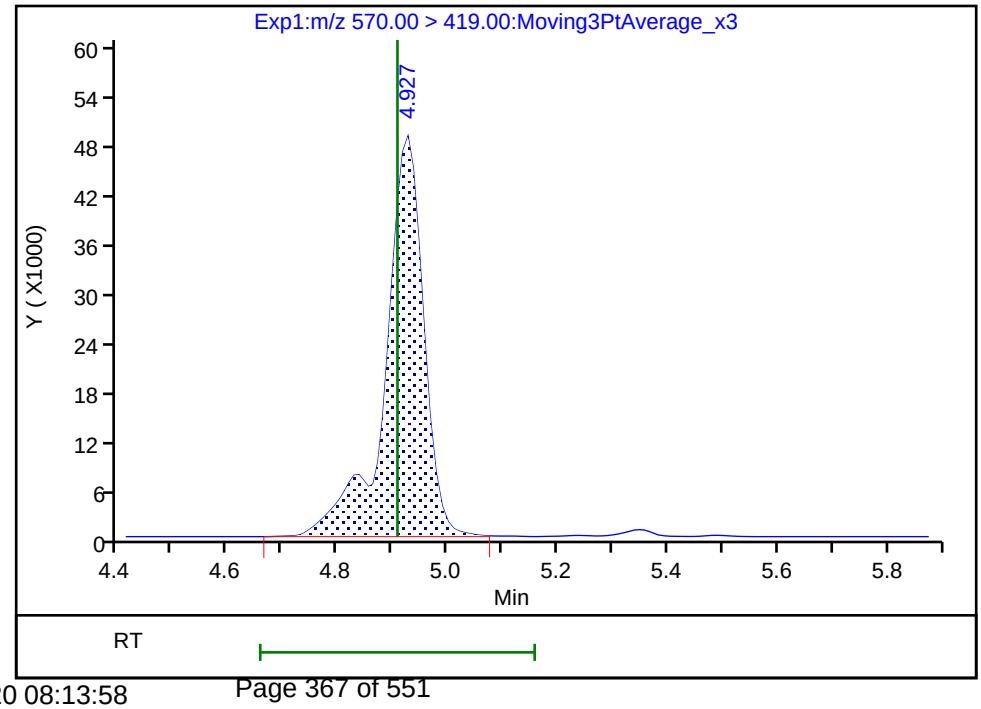
Processing Integration Results

RT: 4.93
Area: 242527
Amount: 0.520440
Amount Units: ng/ml



Manual Integration Results

RT: 4.93
Area: 237902
Amount: 0.510515
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:13:58

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

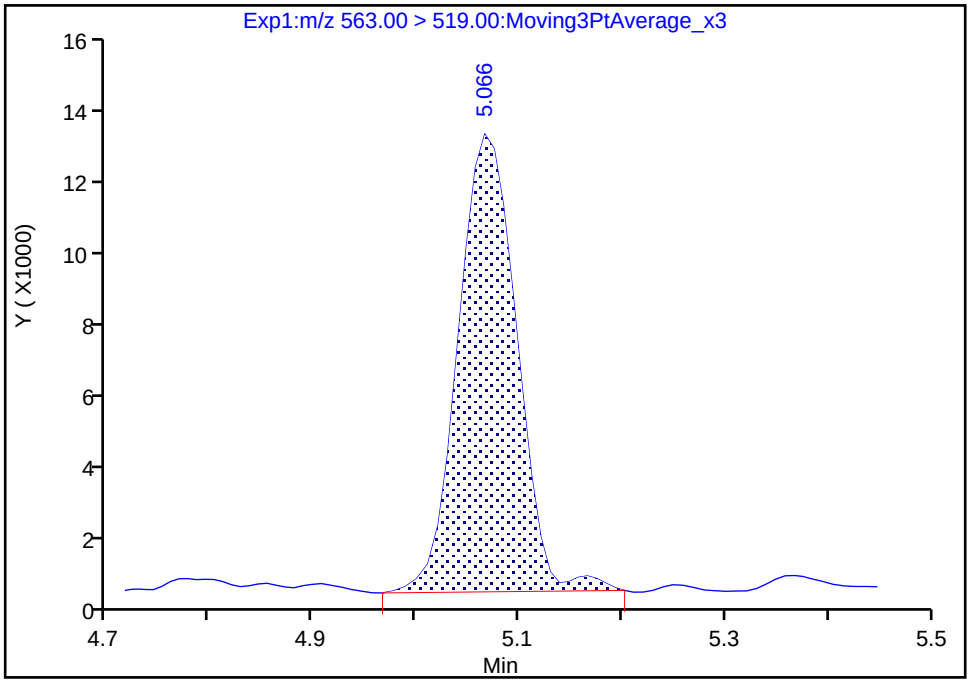
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d				
Injection Date:	05-Jun-2020 14:19:27	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00 mm)	Detector	EXP1		

45 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

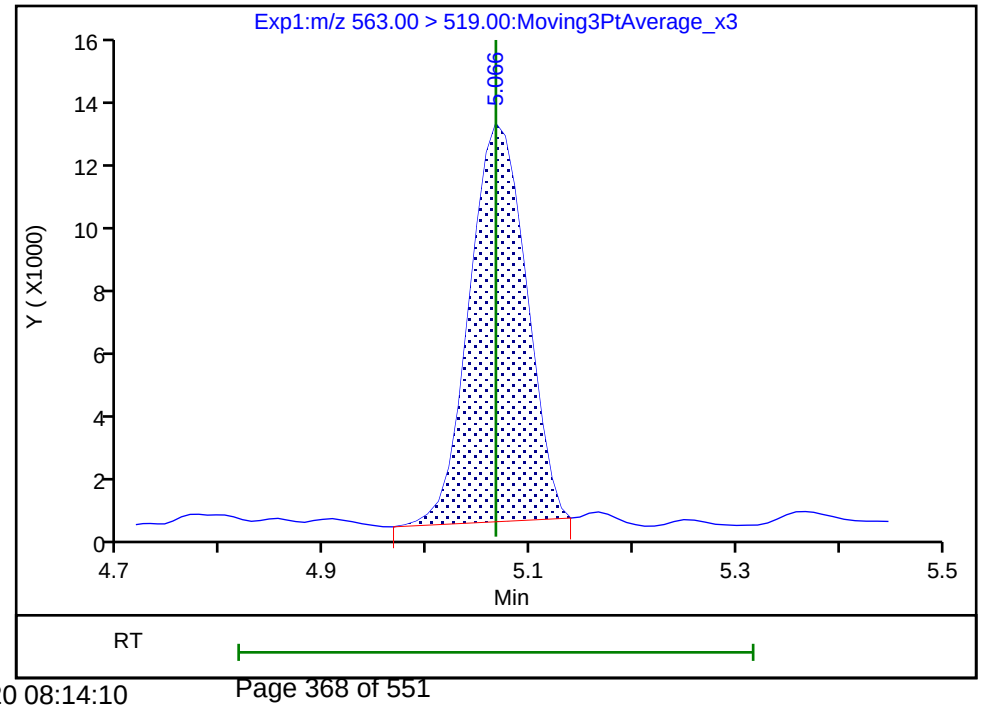
Processing Integration Results

RT: 5.07
Area: 50536
Amount: 0.042798
Amount Units: ng/ml



Manual Integration Results

RT: 5.07
Area: 48394
Amount: 0.040984
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:14:10

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d

Injection Date: 05-Jun-2020 14:19:27 Instrument ID: A15

Lims ID: CCVL

Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 51 Worklist Smp#: 2

Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

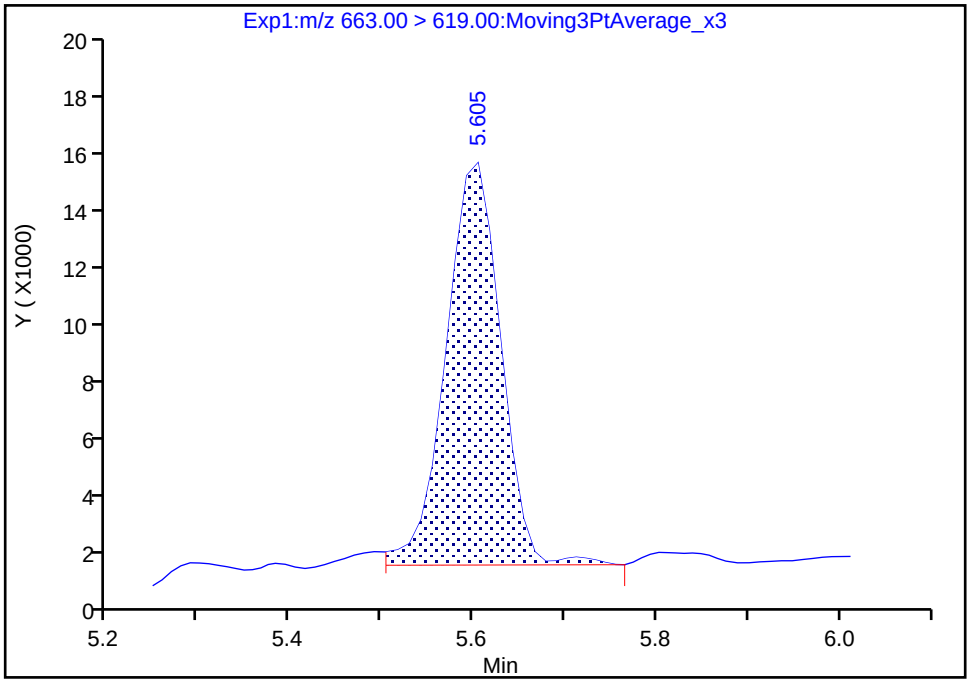
Column: Gemini C18 3um 3mm x 50 mm (3.00 mm) Detector EXP1

60 Perfluorotridecanoic acid, CAS: 72629-94-8

Signal: 1

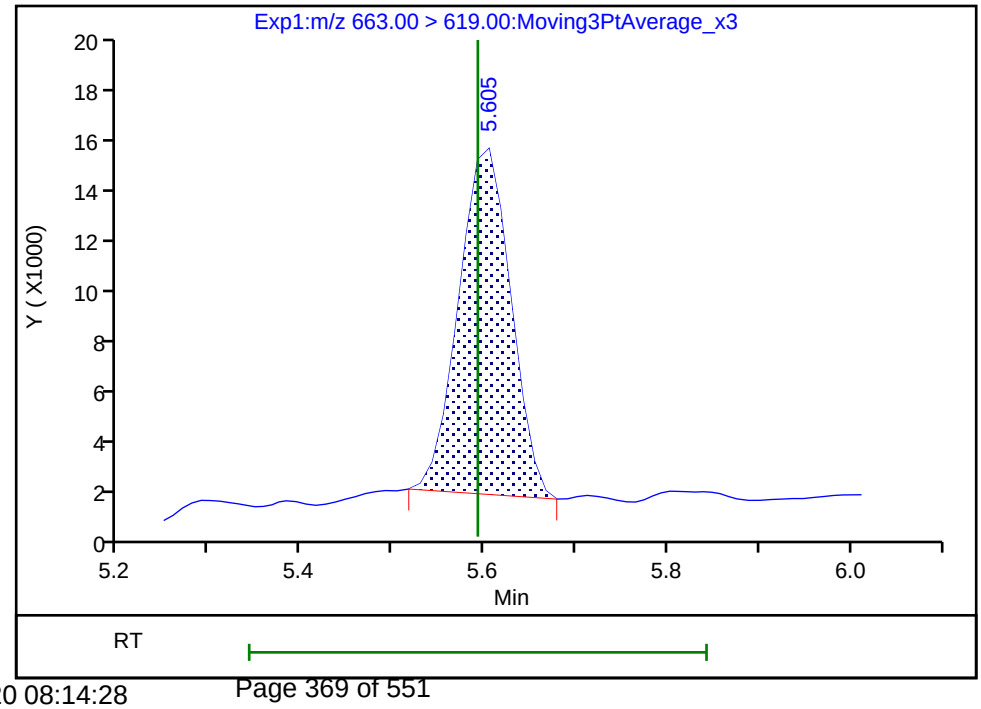
Processing Integration Results

RT: 5.60
Area: 58302
Amount: 0.051994
Amount Units: ng/ml



Manual Integration Results

RT: 5.60
Area: 53983
Amount: 0.048142
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:14:28

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

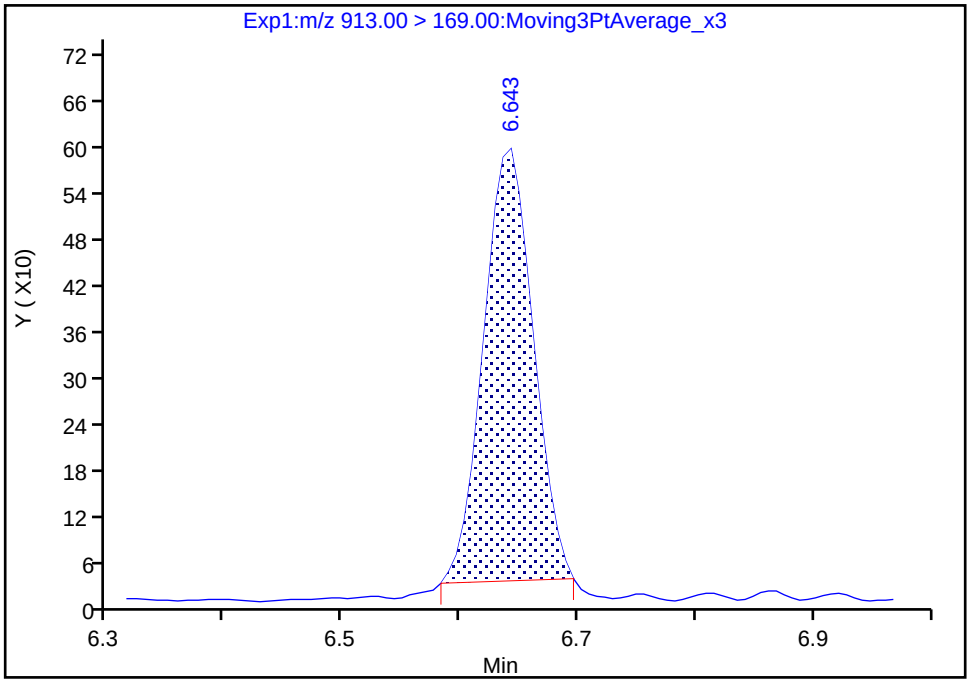
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_005.d				
Injection Date:	05-Jun-2020 14:19:27	Instrument ID:	A15		
Lims ID:	CCVL				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	51	Worklist Smp#:	2
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00 mm)	Detector	EXP1		

65 Perfluorooctadecanoic acid, CAS: 16517-11-6

Signal: 2

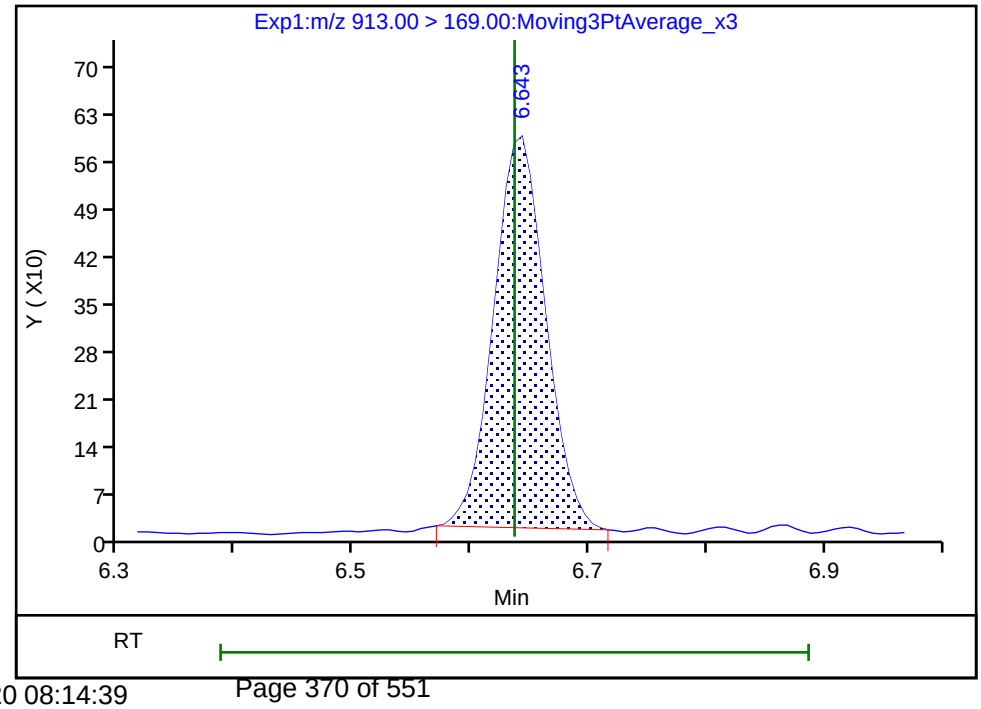
Processing Integration Results

RT: 6.64
Area: 1641
Amount: 0.046545
Amount Units: ng/ml



Manual Integration Results

RT: 6.64
Area: 1768
Amount: 0.046545
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:14:39

Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383943/3 Calibration Date: 06/05/2020 14:28

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.05_A15_PFC_A_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	0.9260	0.9438		1.02	1.00	1.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.007	0.9811		0.974	1.00	-2.6	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9749	0.9401		0.852	0.884	-3.6	50.0
4:2 FTS	AveID	2.255	2.335		0.967	0.934	3.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9375	0.9341		0.996	1.00	-0.4	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7335	0.7084		0.906	0.938	-3.4	50.0
HFPO-DA (GenX)	AveID	0.9134	0.9603		1.05	1.00	5.1	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.011	1.063		1.05	1.00	5.2	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.123	1.043		0.845	0.910	-7.1	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	7.331	7.822		1.01	0.942	6.7	50.0
6:2 FTS	AveID	1.966	1.989		0.959	0.948	1.2	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.091	1.134		0.990	0.952	3.9	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.057	1.110		1.05	1.00	5.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9894	0.9829		0.922	0.928	-0.7	40.0
Perfluorononanoic acid (PFNA)	AveID	1.014	0.9628		0.949	1.00	-5.1	40.0
F-53B Major	AveID	2.729	2.777		0.948	0.932	1.7	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7987	0.8026		0.965	0.960	0.5	50.0
8:2 FTS	AveID	1.631	1.723		1.01	0.958	5.6	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.9658	0.9551		0.989	1.00	-1.1	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.8783	0.8933		1.02	1.00	1.7	40.0
NMeFOSAA	AveID	0.7297	0.7505		1.03	1.00	2.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7009	0.7067		0.972	0.964	0.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7214	0.6672		0.925	1.00	-7.5	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.7067	0.6414		0.908	1.00	-9.2	40.0
F-53B Minor	AveID	2.579	2.586		0.944	0.942	0.3	50.0
NMeFOSE	AveID	1.047	1.099		1.05	1.00	5.0	40.0
NMeFOSA	AveID	0.9416	1.094		1.16	1.00	16.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9816	0.9651		0.983	1.00	-1.7	40.0
10:2 FTS	AveID	1.287	1.295		0.970	0.964	0.7	50.0
NEtFOSE	AveID	1.024	1.058		1.03	1.00	3.3	40.0
NEtFOSA	AveID	1.002	1.132		1.13	1.00	13.0	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2435	0.2549		1.01	0.968	4.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383943/3 Calibration Date: 06/05/2020 14:28

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.05_A15_PFC_A_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7891	0.7647		0.969	1.00	-3.1	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.000	0.9586		0.959	1.00	-4.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8539		0.979	1.00	-2.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4920	0.4679		0.951	1.00	-4.9	50.0
13C4 PFBA	Ave	1.583	1.457		2.30	2.50	-8.0	50.0
13C5 PFPeA	Ave	1.414	1.371		2.42	2.50	-3.1	50.0
13C3 PFBS	Ave	0.9803	0.9215		2.19	2.33	-6.0	50.0
M2-4:2 FTS	Ave	0.1305	0.1110		1.99	2.34	-14.9	50.0
13C2 PFHxA	Ave	1.374	1.349		2.46	2.50	-1.8	50.0
13C3 HFPO-DA	Ave	0.3145	0.3023		2.40	2.50	-3.9	50.0
13C4 PFHpA	Ave	1.090	1.063		2.44	2.50	-2.5	50.0
18O2 PFHxS	Ave	0.4715	0.4350		2.18	2.37	-7.7	50.0
M2-6:2 FTS	Ave	0.1440	0.1449		2.39	2.38	0.6	50.0
13C4 PFOA	Ave	0.9856	0.9927		2.52	2.50	0.7	50.0
13C4 PFOS	Ave	0.3660	0.3291		2.15	2.39	-10.1	50.0
13C5 PFNA	Ave	0.7544	0.8188		2.71	2.50	8.5	50.0
13C2 PFDA	Ave	0.7192	0.7089		2.46	2.50	-1.4	50.0
13C8 FOSA	Ave	0.7278	0.6700		2.30	2.50	-8.0	50.0
M2-8:2 FTS	Ave	0.1717	0.1590		2.22	2.40	-7.4	50.0
d3-NMeFOSAA	Ave	0.2685	0.2484		2.31	2.50	-7.5	50.0
13C2 PFUnA	Ave	0.6132	0.6053		2.47	2.50	-1.3	50.0
d5-NEtFOSAA	Ave	0.2733	0.2604		2.38	2.50	-4.7	50.0
d7-N-MeFOSE-M	Ave	0.1833	0.1719		11.7	12.5	-6.2	50.0
d-N-MeFOSA-M	Ave	0.2300	0.1820		1.98	2.50	-20.9	50.0
13C2 PFDoA	Ave	0.5432	0.5577		2.57	2.50	2.7	50.0
d9-N-EtFOSE-M	Ave	0.2246	0.2144		11.9	12.5	-4.5	50.0
d-N-EtFOSA-M	Ave	0.2334	0.1860		1.99	2.50	-20.3	50.0
13C2 PFTeDA	Ave	0.3551	0.3175		2.23	2.50	-10.6	50.0
13C2 PFHxDA	Ave	0.2944	0.2645		2.25	2.50	-10.2	50.0
13C8 PFOA	Ave	0.6050	0.5689		2.30	2.45	-6.0	50.0
13C8 PFOS	Ave	0.1244	0.1103		2.12	2.39	-11.3	50.0

Eurofins TestAmerica, Sacramento

Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 05-Jun-2020 14:28:33 ALS Bottle#: 52 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4 (26)
Misc. Info.: Plate: 5 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 08:16:45 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1027

First Level Reviewer: koucharis Date: 08-Jun-2020 08:16:45
Ratio Calibration: Average of Initial Calibration

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	2.544	2.544	0.0	0.627	9922077	2.30		92.0	12978	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.552	2.552	0.0	1.003	3745703	1.02		102	1107	
D 4 13C5 PFPeA										
267.90 > 223.00	2.903	2.903	0.0	0.716	9336261	2.42		96.9	12762	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.903	2.903	0.0	1.000	3663898	0.9739		97.4	217	
D 9 13C3 PFBS										
301.90 > 80.00	2.934	2.934	0.0	0.723	5836923	2.19		94.0	8135	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.944	2.944	0.0	1.004	2086297	0.8524	Target=2.14	96.4	110	
298.90 > 99.00	2.934	2.944	-0.010	1.000	994951		2.10(1.07-3.21)		232	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.229	3.229	0.0	0.796	706327	1.99		85.1	1061	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.229	3.229	0.0	1.000	659740	0.9671		104	4451	
D 11 13C2 PFHxA										
315.00 > 270.00	3.276	3.276	0.0	0.808	9191137	2.46		98.2	12301	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluorohexanoic acid										
313.00 > 269.00	3.276	3.276	0.0	1.000	3434023	1.00	Target=15.73	99.6	1581	
313.00 > 119.00	3.276	3.276	0.0	1.000	221356		15.51(7.86-23.59)		486	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.296	3.296	0.0	1.124	1668215	0.9059	Target=2.69	96.6	540	
349.00 > 99.00	3.296	3.296	0.0	1.124	609375		2.74(1.35-4.04)		2713	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.392	3.392	0.0	0.836	2059154	2.40		96.1	5196	
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.392	3.392	0.0	1.000	790970	1.05		105	5532	
D 18 13C4 PFHpA										
367.00 > 322.00	3.667	3.667	0.0	0.904	7241162	2.44		97.5	14148	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.667	3.667	0.0	1.000	3079218	1.05	Target=3.80	105	941	
363.00 > 169.00	3.667	3.667	0.0	1.000	770360		4.00(1.90-5.71)		3076	
D 17 18O2 PFHxS										
403.00 > 84.00	3.677	3.677	0.0	0.907	2802700	2.18		92.3	6170	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.677	3.677	0.0	1.000	1124715	0.8451	Target=2.99	92.9	2962	
399.00 > 99.00	3.677	3.677	0.0	1.000	397914		2.83(1.50-4.49)		980	
19 DONA										
377.00 > 251.00	3.716	3.716	0.0	0.844	6606288	1.01	Target=2.14	107	9418	
377.00 > 85.00	3.716	3.716	0.0	0.844	3070289		2.15(1.07-3.21)		8978	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.032	4.032	0.0	0.994	937357	2.39		101	3574	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.032	4.032	0.0	1.000	744213	0.9594		101	4424	
$ 26 13C8 PFOA										
421.00 > 376.00	4.048	4.048	0.0	0.998	3793307	2.30		94.0	6273	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.048	4.048	0.0	0.919	967788	0.9895	Target=3.77	104	2996	
449.00 > 99.00	4.048	4.048	0.0	0.919	253984		3.81(1.89-5.66)		1789	
D 25 13C4 PFOA										
417.00 > 372.00	4.056	4.056	0.0	1.000	6761160	2.52		101	11121	
* 23 13C2 PFOA										
415.00 > 370.00	4.056	4.056	0.0		6810881	2.50			7916	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.056	4.056	0.0	1.000	3000847	1.05	Target=2.88	105	168	
413.00 > 169.00	4.056	4.056	0.0	1.000	1003248		2.99(1.44-4.31)		7744	
$ 28 13C8 PFOS										
507.00 > 99.00	4.405	4.405	0.0	1.086	718478	2.12		88.7	3024	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 27 13C4 PFOS										
503.00 > 80.00	4.405	4.405	0.0	1.086	2142850	2.15		89.9	5862	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.405	4.405	0.0	1.000	817785	0.9219	Target=4.89	99.3	1865	M
499.00 > 99.00	4.405	4.405	0.0	1.000	157080		5.21(2.44-7.33)		1139	M
D 30 13C5 PFNA										
468.00 > 423.00	4.421	4.421	0.0	1.090	5576510	2.71		109	10076	
31 Perfluorononanoic acid										
463.00 > 419.00	4.421	4.421	0.0	1.000	2147673	0.9494	Target=7.00	94.9	282	
463.00 > 169.00	4.421	4.421	0.0	1.000	287931		7.46(3.50-10.51)		1472	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.599	4.599	0.0	1.044	2320662	0.9483		102	4754	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.730	4.730	0.0	1.074	690846	0.9647	Target=2.77	100	1363	
549.00 > 99.00	4.730	4.730	0.0	1.074	245068		2.82(1.38-4.15)		2065	
D 33 13C8 FOSA										
506.00 > 78.00	4.752	4.752	0.0	1.172	4562948	2.30		92.0	5070	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.752	4.752	0.0	1.000	1630486	1.02		102	3045	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.752	4.752	0.0	1.000	1844627	0.9890	Target=10.36	98.9	463	
513.00 > 169.00	4.752	4.752	0.0	1.000	206294		8.94(5.18-15.54)		179	
D 39 13C2 PFDA										
515.00 > 470.00	4.752	4.752	0.0	1.172	4828202	2.46		98.6	10094	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.752	4.752	0.0	1.000	715260	1.01		106	2798	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.752	4.752	0.0	1.172	1037616	2.22		92.6	4787	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.907	4.907	0.0	1.210	1691531	2.31		92.5	2109	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.907	4.907	0.0	1.000	507793	1.03		103	471	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.030	5.030	0.0	1.142	610777	0.9719	Target=2.97	101	2310	
599.00 > 99.00	5.030	5.030	0.0	1.142	201291		3.03(1.49-4.46)		1350	
D 43 13C2 PFUnA										
565.00 > 520.00	5.057	5.057	0.0	1.247	4122602	2.47		98.7	9797	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.066	5.066	0.0	1.002	1100253	0.9249	Target=7.56	92.5	504	
563.00 > 169.00	5.057	5.066	-0.009	1.000	158513		6.94(3.78-11.34)		914	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.066	5.066	0.0	1.249	1773841	2.38		95.3	1450	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.075	5.075	0.0	1.002	455078	0.9076		90.8	881	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.184	5.184	0.0	1.177	2184064	0.9444		100	5741	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.193	5.193	0.0	1.280	5855270	11.7		93.8	4516	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.211	5.211	0.0	1.003	514898	1.05		105	906	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.220	5.220	0.0	1.287	1239665	1.98		79.1	125	
50 NMeFOSA										
512.00 > 169.00	5.220	5.220	0.0	1.000	542600	1.16		116	647	
D 56 13C2 PFDoA										
615.00 > 570.00	5.331	5.331	0.0	1.314	3798683	2.57		103	7435	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.340	5.340	0.0	1.002	1466508	0.9833	Target=7.18	98.3	213	
613.00 > 169.00	5.331	5.340	-0.009	1.000	194820		7.53(3.59-10.76)		1285	
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.358	5.358	0.0	1.127	540983	0.9705		101	5072	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.367	5.367	0.0	1.323	7302168	11.9		95.5	4699	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.375	5.375	0.0	1.001	617799	1.03		103	1094	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.383	5.383	0.0	1.327	1266628	1.99		79.7	379	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.394	5.394	0.0	1.002	573756	1.13		113	571	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.555	5.555	0.0	1.261	221198	1.01	Target=0.79	105	3064	
699.00 > 99.00	5.555	5.555	0.0	1.261	253513		0.87(0.39-1.18)		2399	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.592	5.592	0.0	1.049	1161883	0.9690	Target=6.63	96.9	203	
663.00 > 169.00	5.592	5.592	0.0	1.049	175293		6.63(3.32-9.95)		2329	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.830	5.830	0.0	1.437	2162168	2.23		89.4	6110	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.830	5.830	0.0	1.000	829086	0.9586	Target=8.46	95.9	200	
713.00 > 219.00	5.821	5.830	-0.009	0.998	108500		7.64(4.23-12.69)		2282	

Report Date: 08-Jun-2020 08:16:46 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_006.d

Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C2 PFHxDA										
815.00 > 770.00	6.245	6.245	0.0	1.540	1801171	2.25		89.8	5643	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.245	6.245	0.0	1.000	615211	0.9794	Target=7.92	97.9	75.6	
813.00 > 169.00	6.245	6.245	0.0	1.000	86656		7.10(3.96-11.88)		1271	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.636	6.636	0.0	1.063	337072	0.9509	Target=10.24	95.1	66.0	
913.00 > 169.00	6.636	6.636	0.0	1.063	31759		10.61(5.12-15.36)		706	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 08-Jun-2020 08:16:46 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_006.d

Injection Date: 05-Jun-2020 14:28:33 Instrument ID: A15

Lims ID: CCV L4

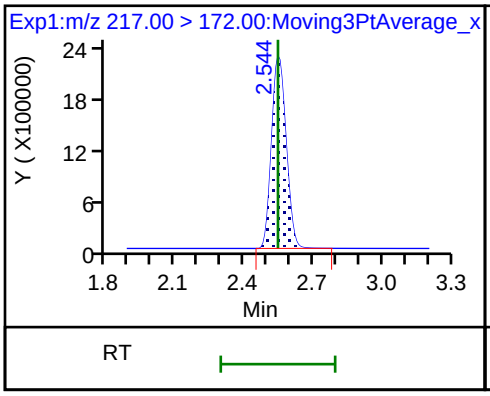
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 52 Worklist Smp#: 3

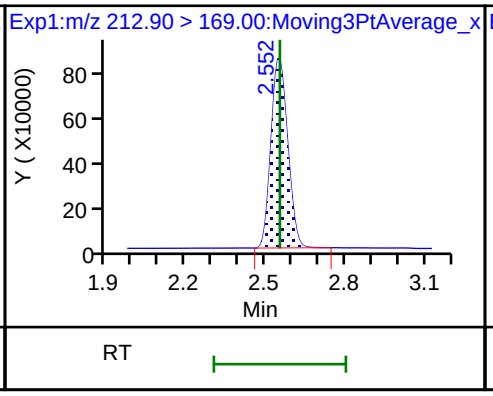
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

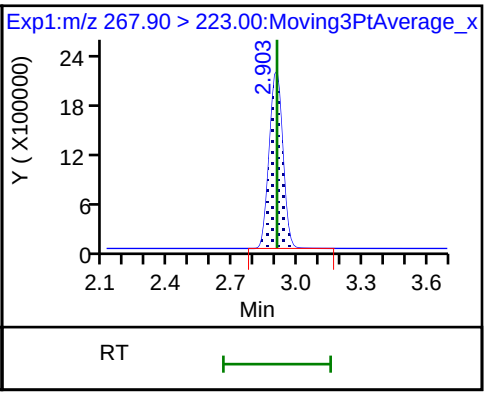
D 1 13C4 PFBA



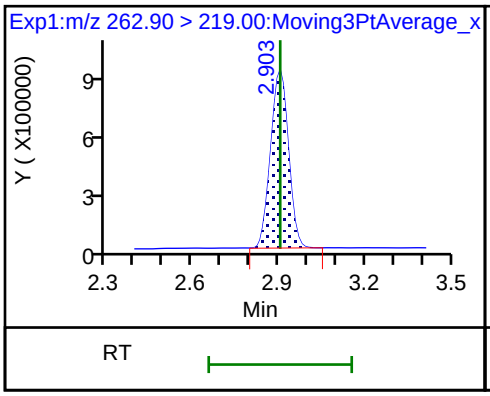
2 Perfluorobutanoic acid



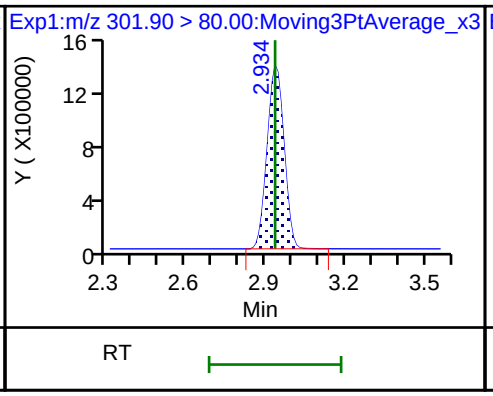
D 4 13C5 PFPeA



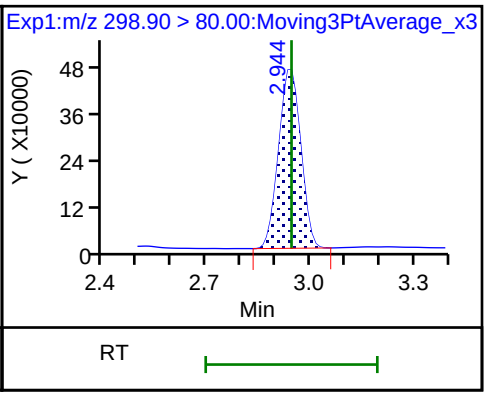
5 Perfluoropentanoic acid



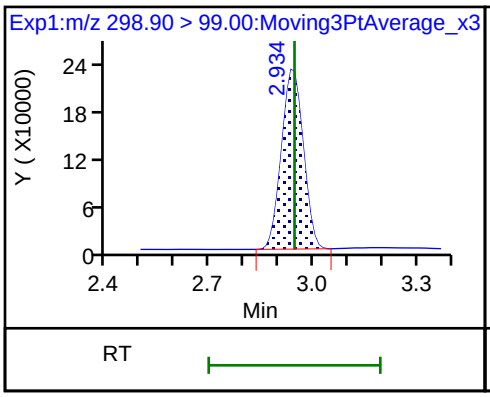
D 9 13C3 PFBS



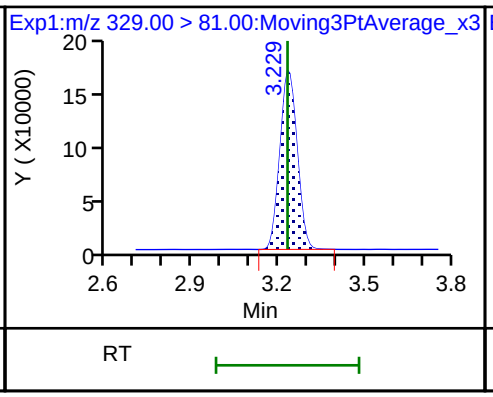
6 Perfluorobutanesulfonic acid



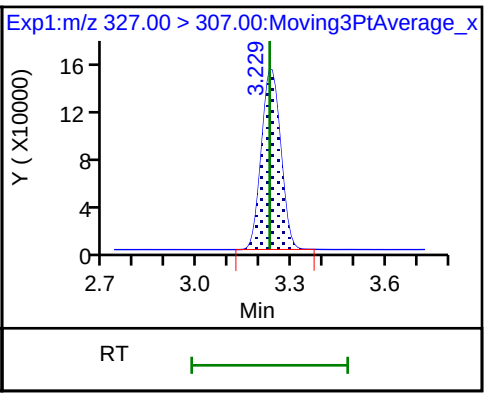
6 Perfluorobutanesulfonic acid



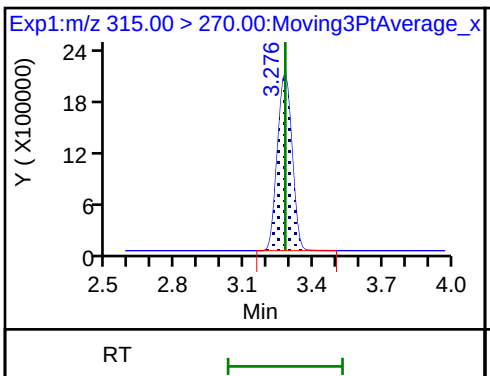
D 7 M2-4:2 FTS



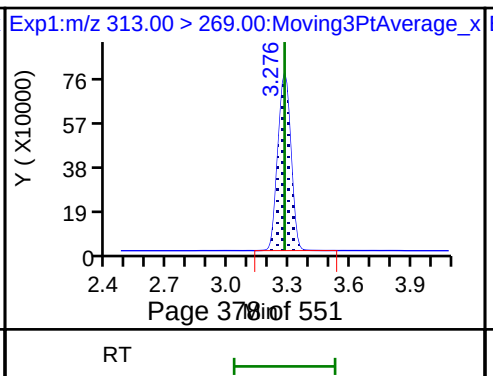
8 1H,1H,2H,2H-perfluorohexanesulfo



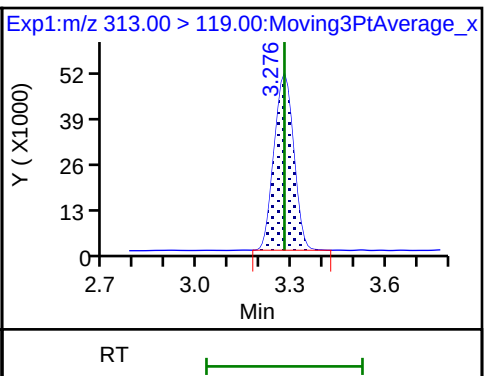
D 11 13C2 PFHxA



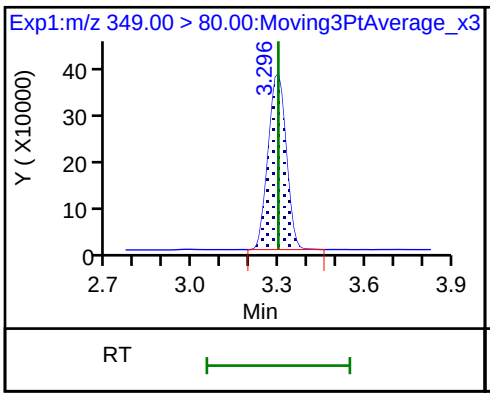
10 Perfluorohexanoic acid



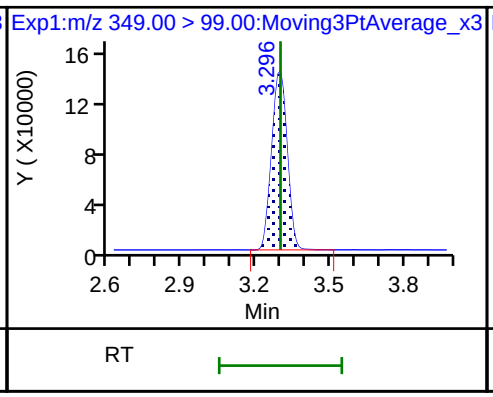
10 Perfluorohexanoic acid



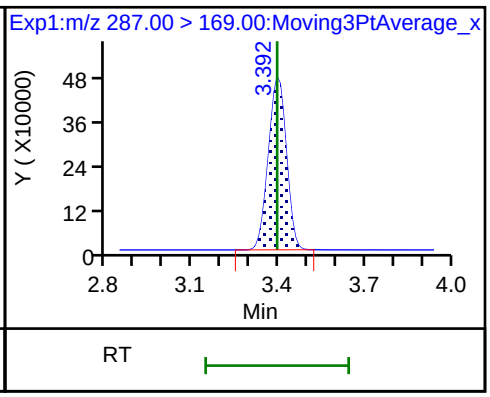
12 Perfluoropentanesulfonic acid



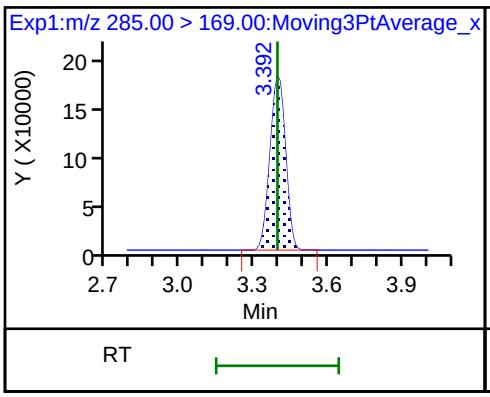
12 Perfluoropentanesulfonic acid



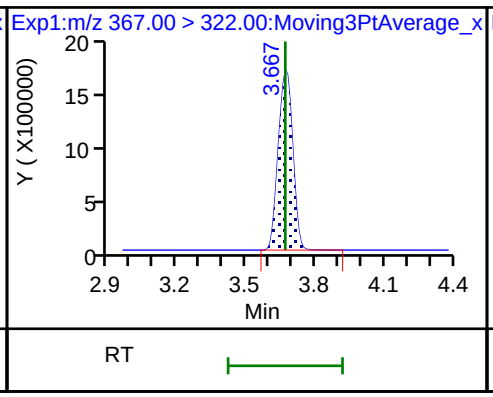
D 14 13C3 HFPO-DA



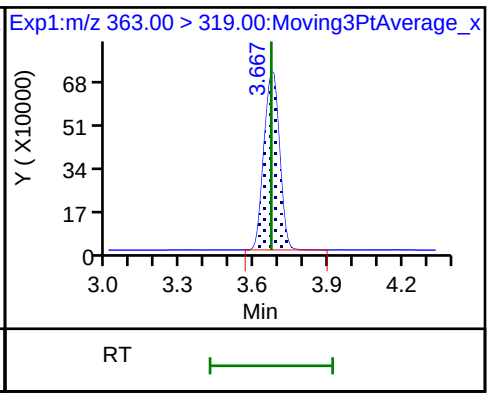
13 Perfluoro(2-propoxypropanoic) ac



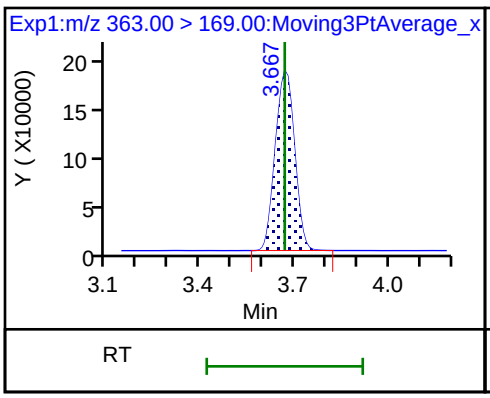
D 18 13C4 PFHpA



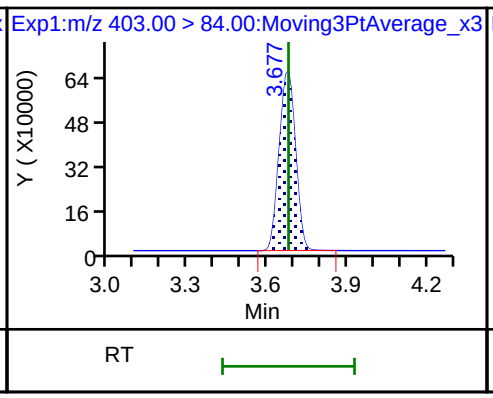
16 Perfluoroheptanoic acid



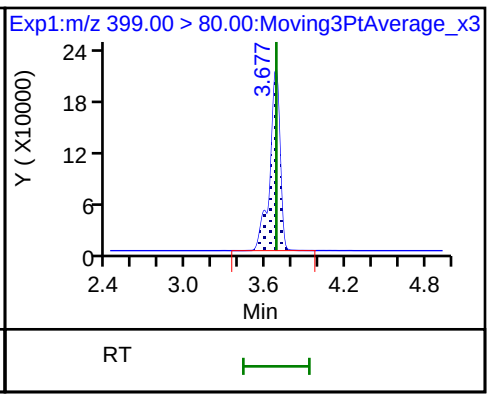
16 Perfluoroheptanoic acid



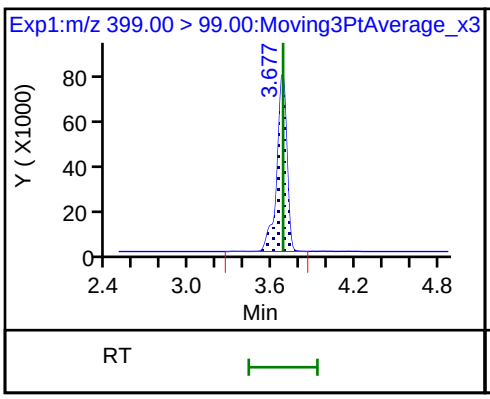
D 17 18O2 PFHxS



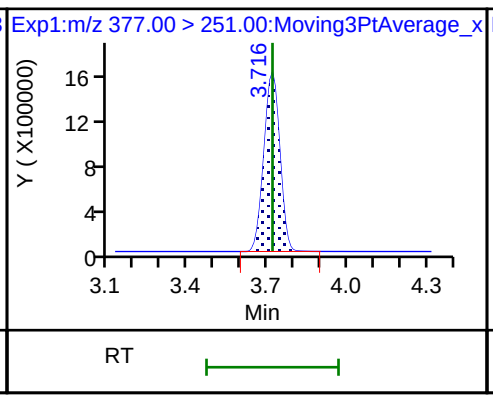
15 Perfluorohexanesulfonic acid



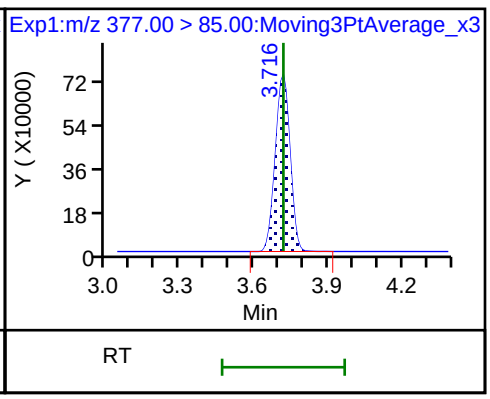
15 Perfluorohexanesulfonic acid



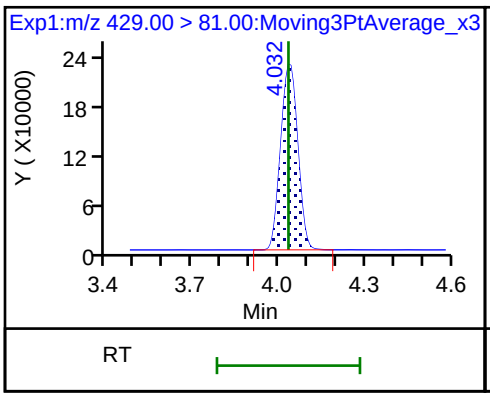
19 DONA



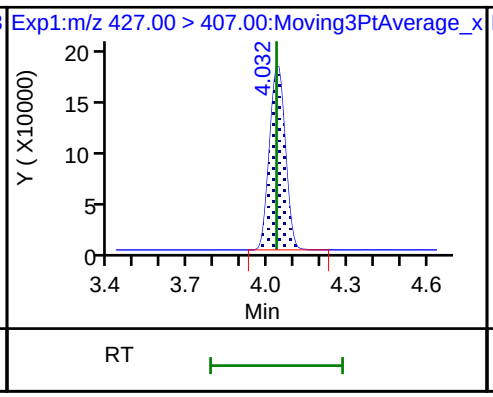
19 DONA



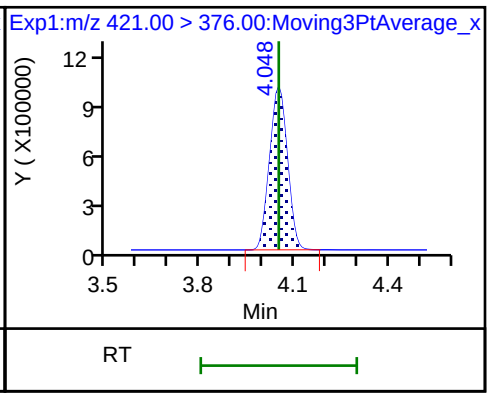
D 20 M2-6:2 FTS



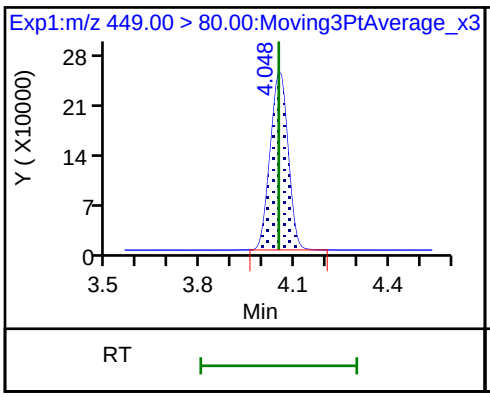
21 1H,1H,2H,2H-perfluorooctanesulfo



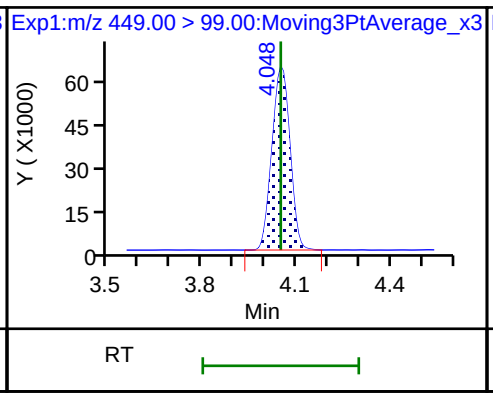
$ 26 13C8 PFOA



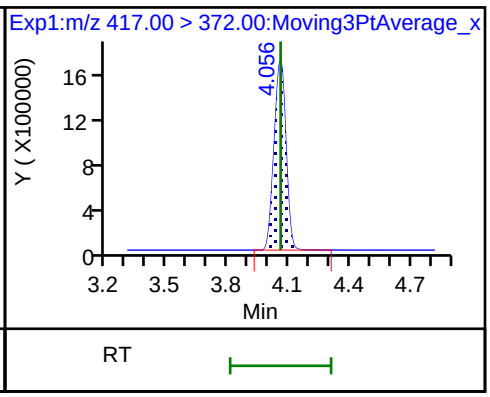
24 Perfluoroheptanesulfonic acid



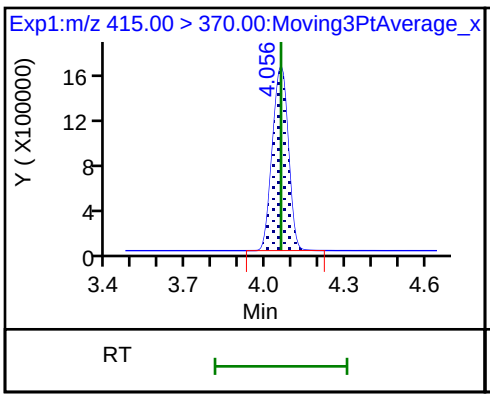
24 Perfluoroheptanesulfonic acid



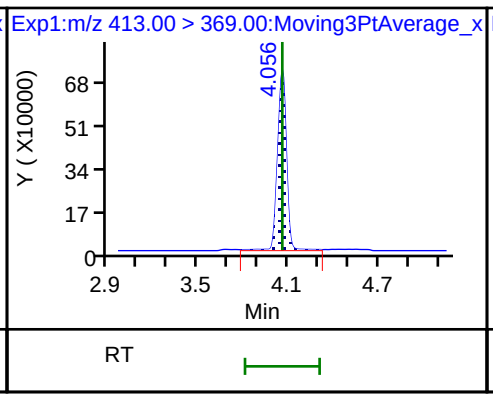
D 25 13C4 PFOA



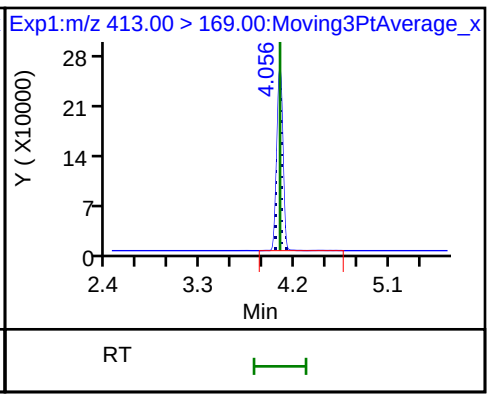
* 23 13C2 PFOA



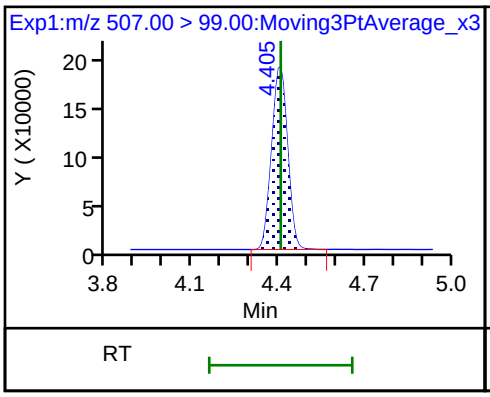
22 Perfluorooctanoic acid



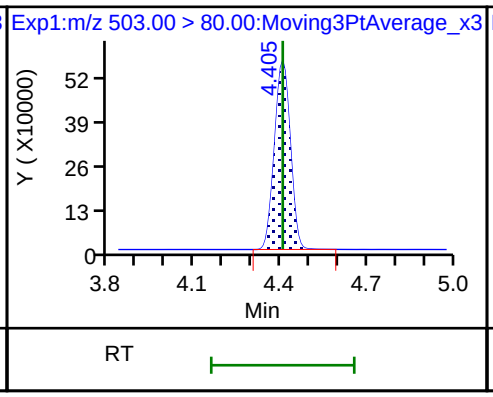
22 Perfluorooctanoic acid



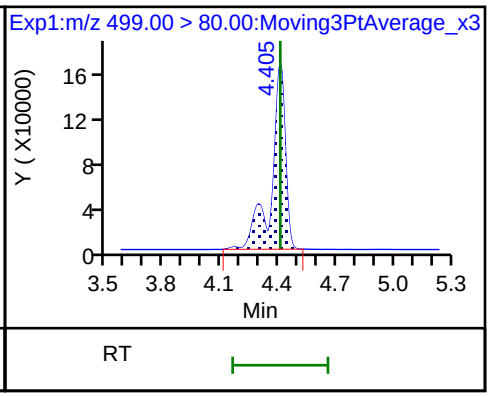
$ 28 13C8 PFOS



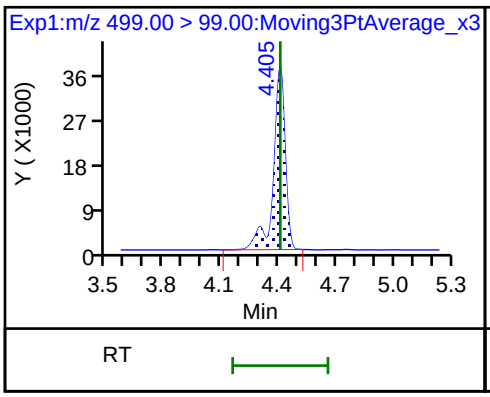
D 27 13C4 PFOS



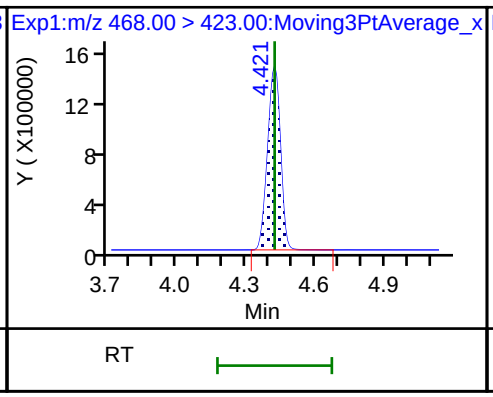
29 Perfluorooctanesulfonic acid (M)



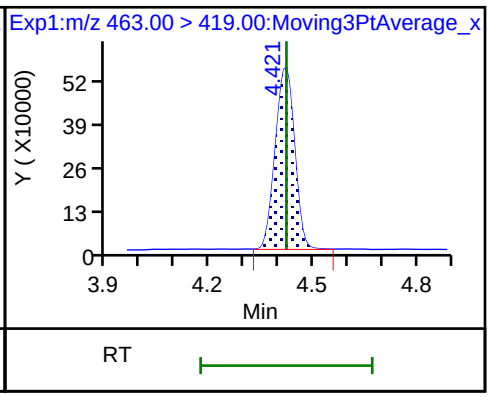
29 Perfluorooctanesulfonic acid (M)



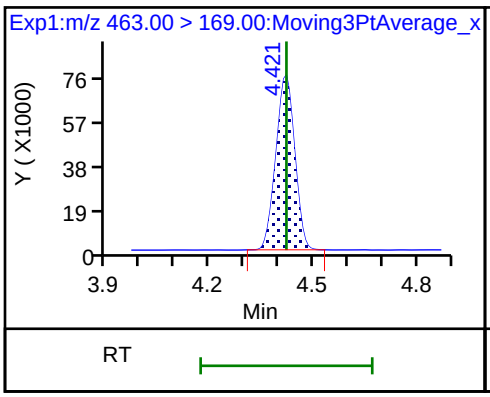
D 30 13C5 PFNA



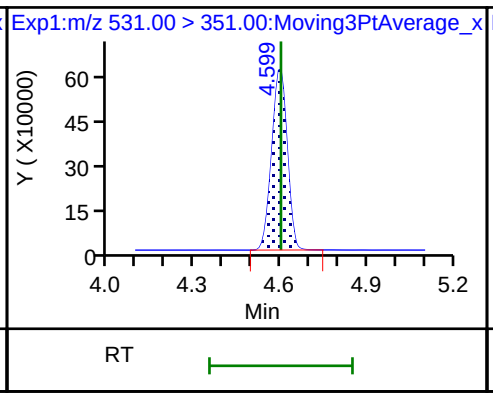
31 Perfluorononanoic acid



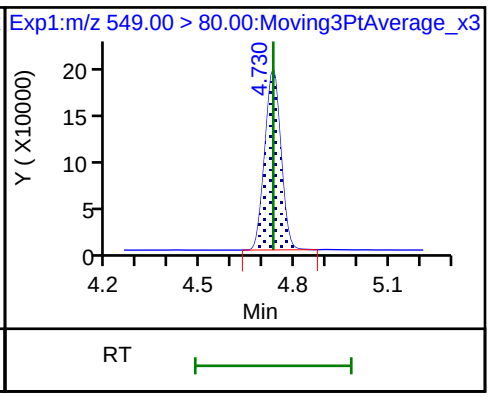
31 Perfluorononanoic acid



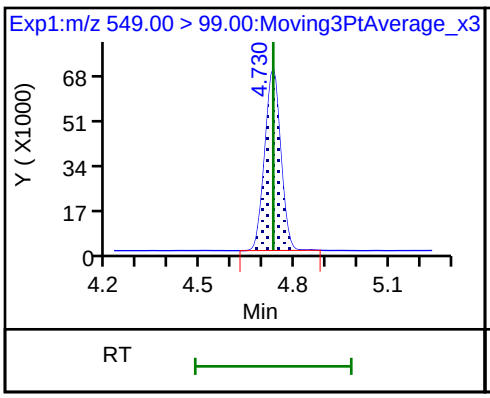
32 9-Chlorohexadecafluoro-3-oxanona



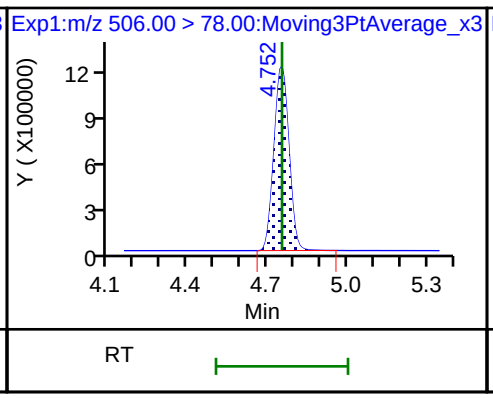
35 Perfluorononanesulfonic acid



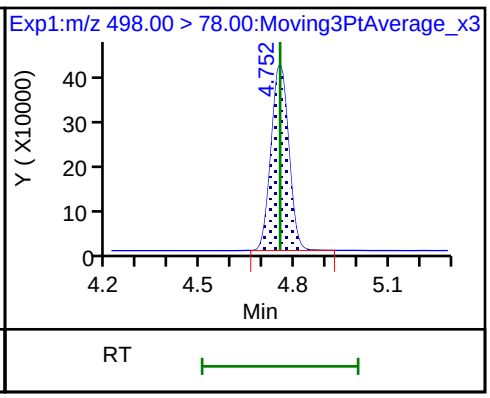
35 Perfluorononanesulfonic acid



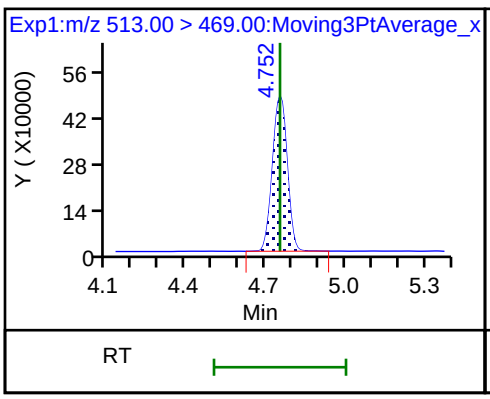
D 33 13C8 FOSA



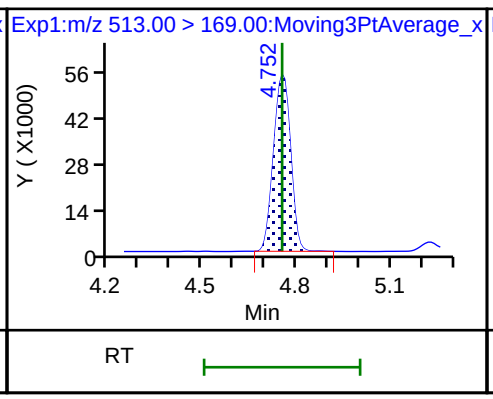
34 Perfluorooctanesulfonamide



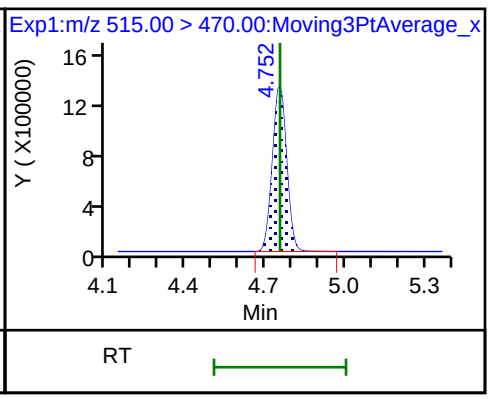
37 Perfluorodecanoic acid



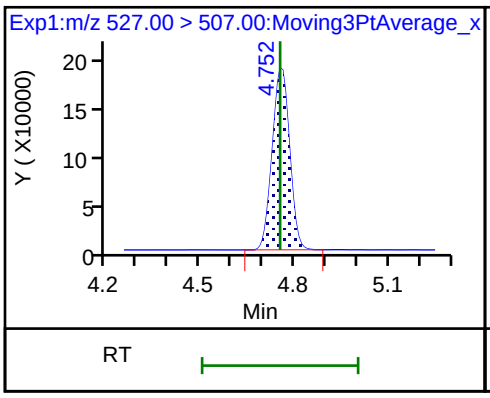
37 Perfluorodecanoic acid



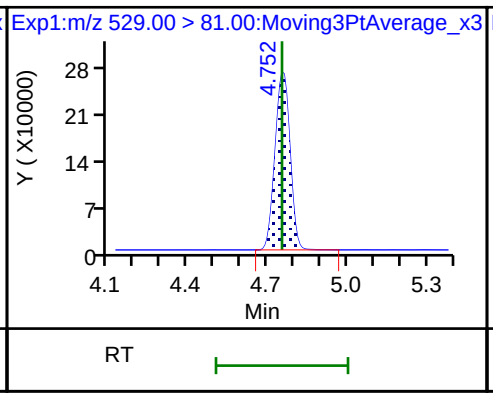
D 39 13C2 PFDA



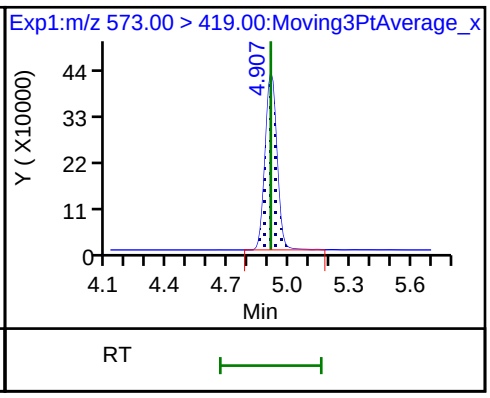
36 1H,1H,2H,2H-perfluorodecanesulfo



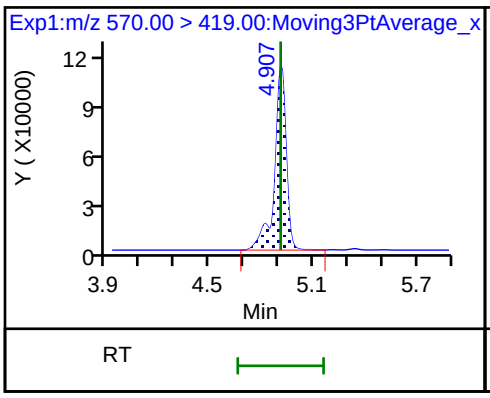
D 38 M2-8:2 FTS



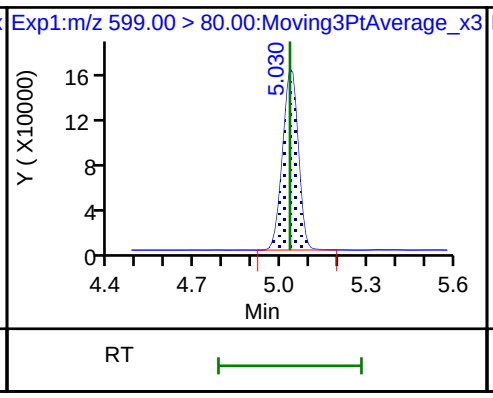
D 40 d3-NMeFOSAA



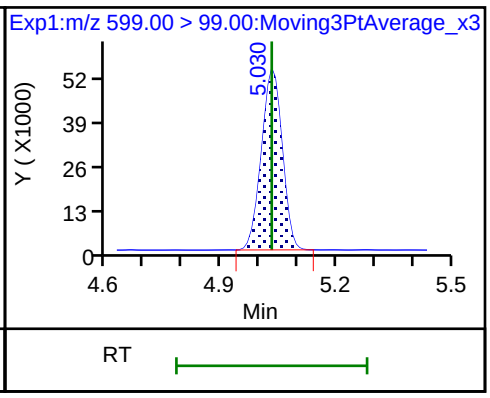
41 N-methylperfluorooctanesulfonami



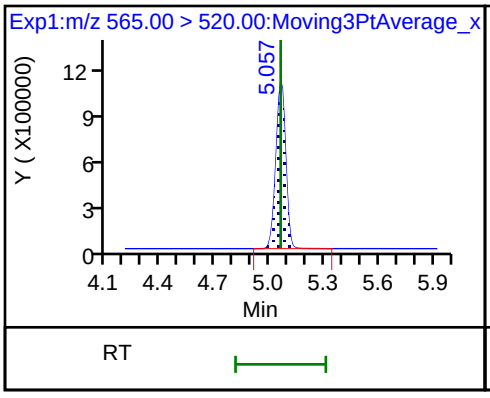
42 Perfluorodecanesulfonic acid



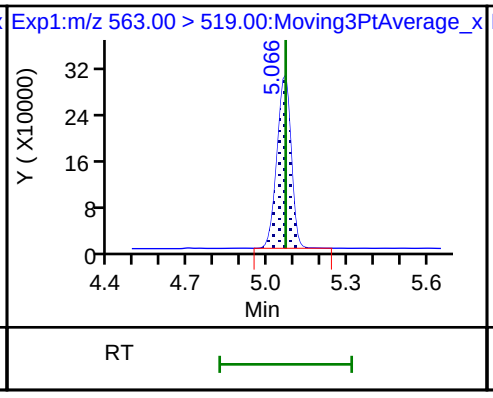
42 Perfluorodecanesulfonic acid



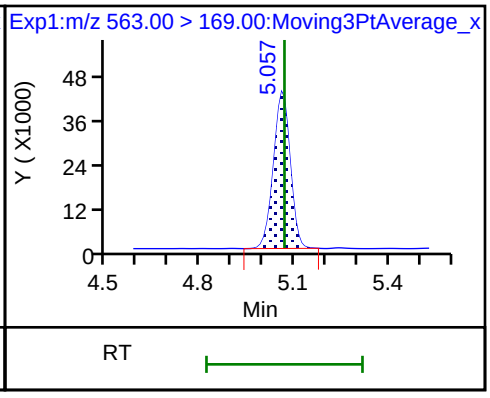
D 43 13C2 PFUnA



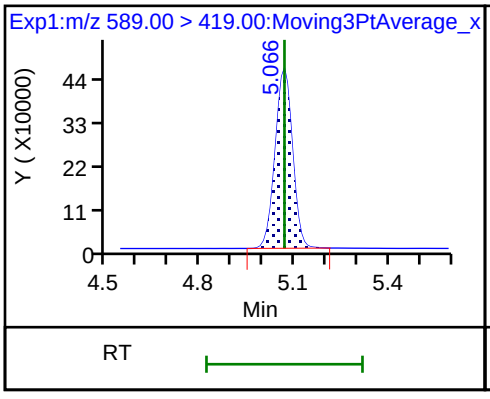
45 Perfluoroundecanoic acid



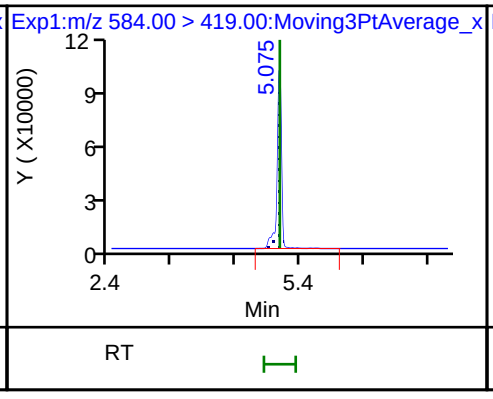
45 Perfluoroundecanoic acid



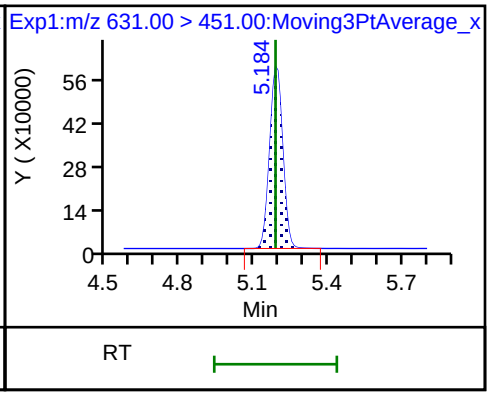
D 44 d5-NEtFOSAA



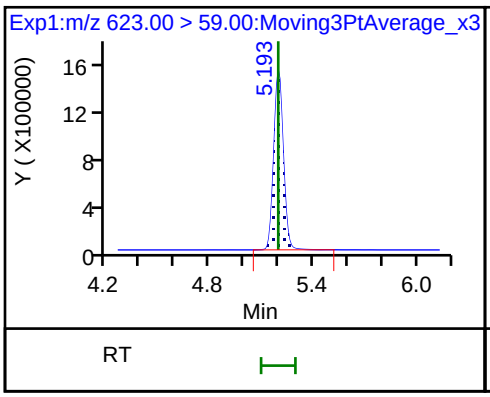
46 N-ethylperfluorooctanesulfonamid



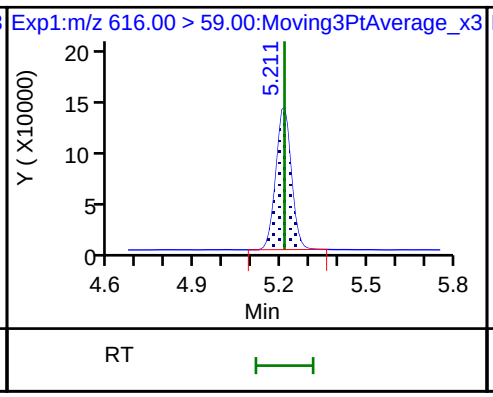
51 11-Chloroeicosafluoro-3-oxaundec



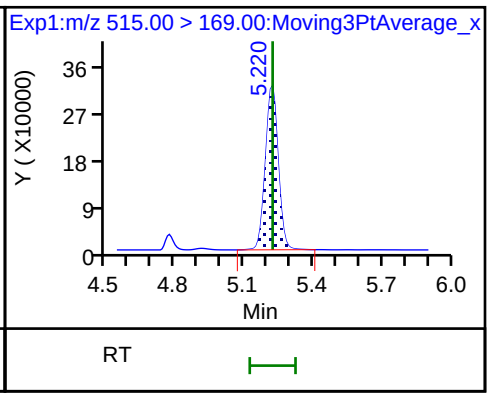
D 47 d7-N-MeFOSE-M



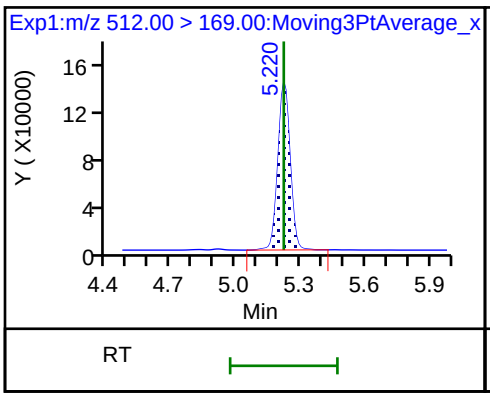
48 2-(N-methylperfluoro-1-octanesul



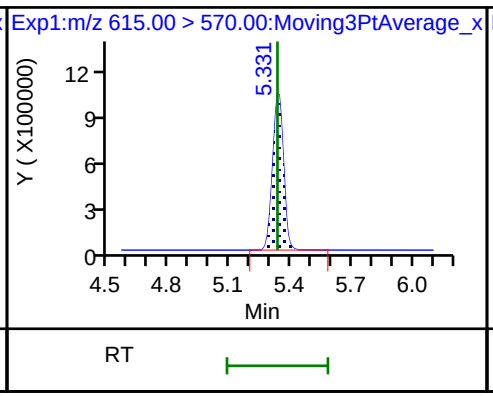
D 49 d-N-MeFOSA-M



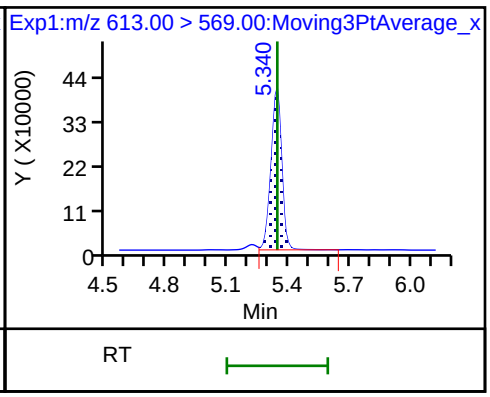
50 NMeFOSA



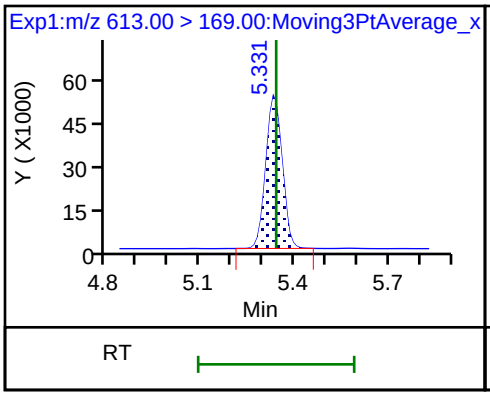
D 56 13C2 PFDoA



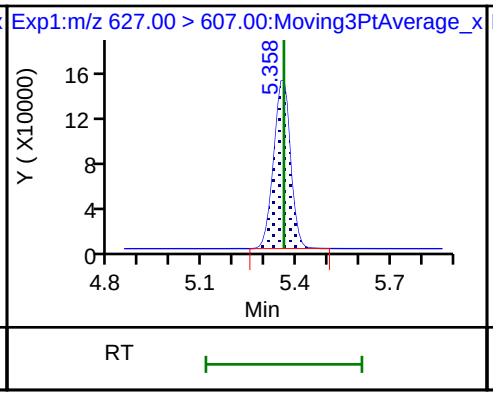
57 Perfluorododecanoic acid



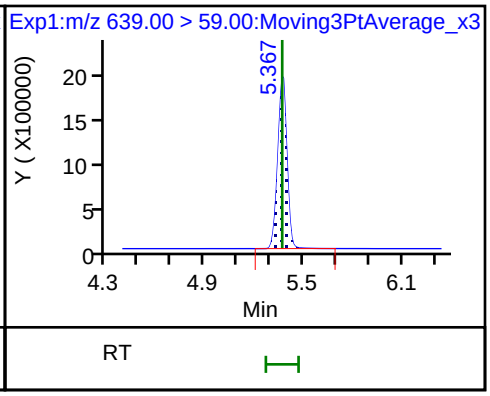
57 Perfluorododecanoic acid



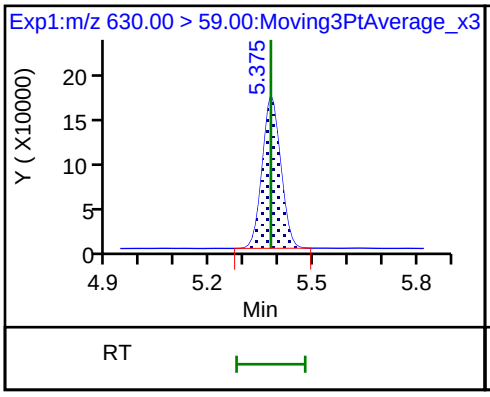
58 1H,1H,2H,2H-perfluorododecanesul



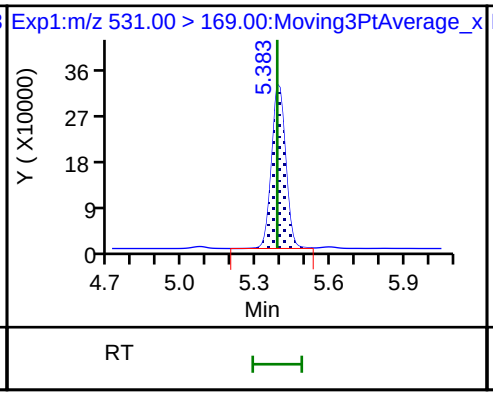
D 52 d9-N-EtFOSE-M



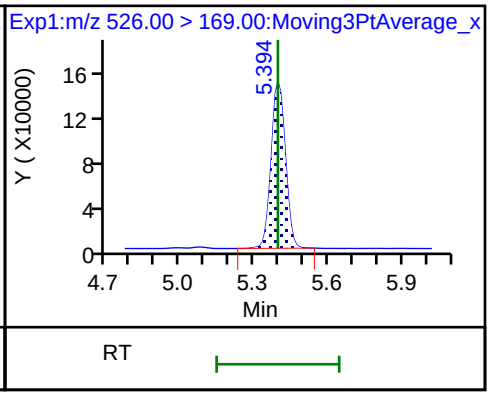
53 2-(N-ethylperfluoro-1-octanesulf



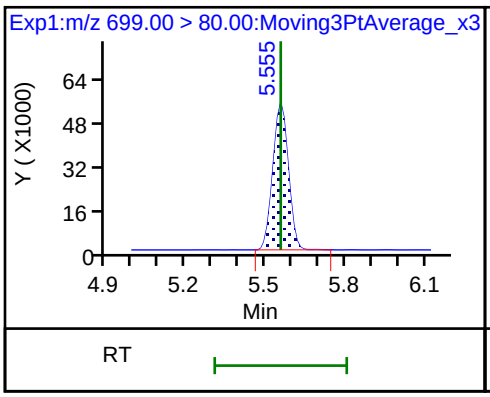
D 54 d-N-EtFOSA-M



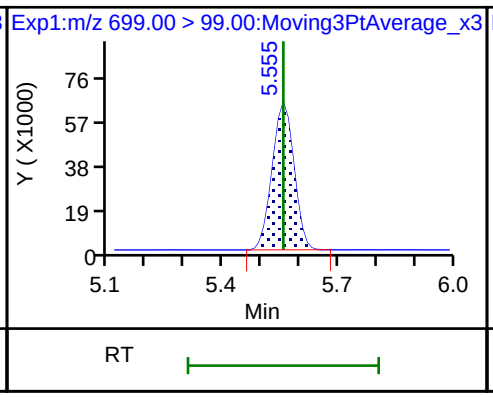
55 N-ethylperfluoro-1-octanesulfona



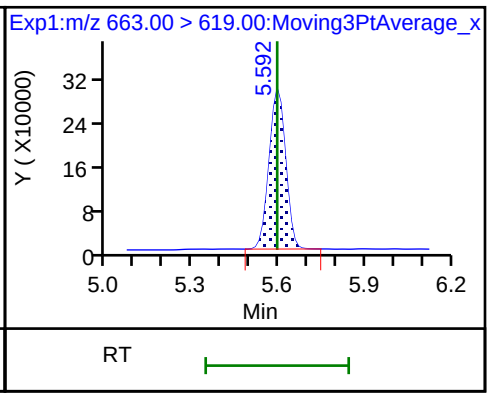
59 Perfluorododecanesulfonic acid (



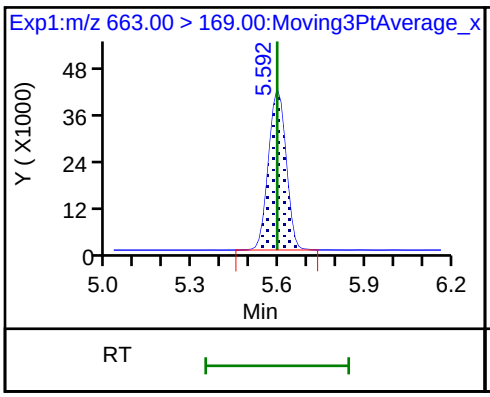
59 Perfluorododecanesulfonic acid (



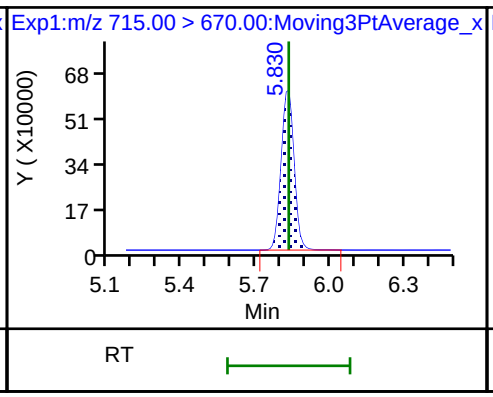
60 Perfluorotridecanoic acid



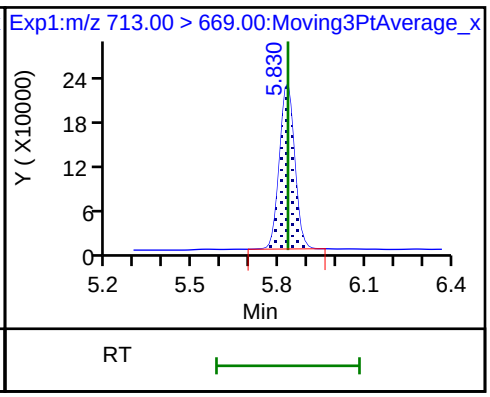
60 Perfluorotridecanoic acid



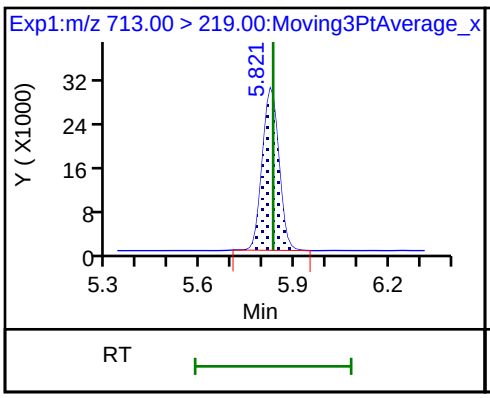
D 61 13C2 PFTeDA



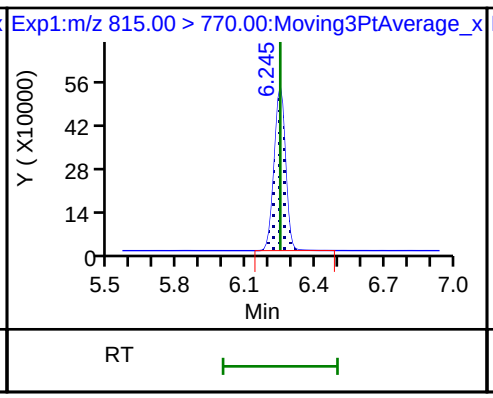
62 Perfluorotetradecanoic acid



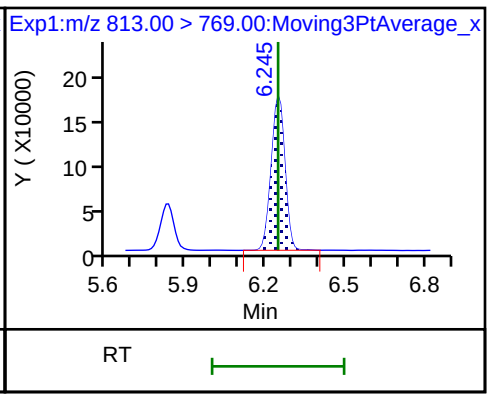
62 Perfluorotetradecanoic acid



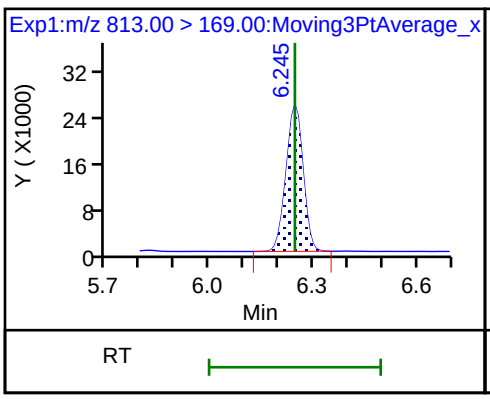
D 64 13C2 PFHxDA



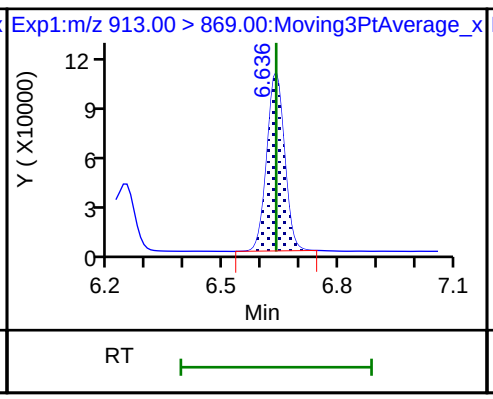
63 Perfluorohexadecanoic acid



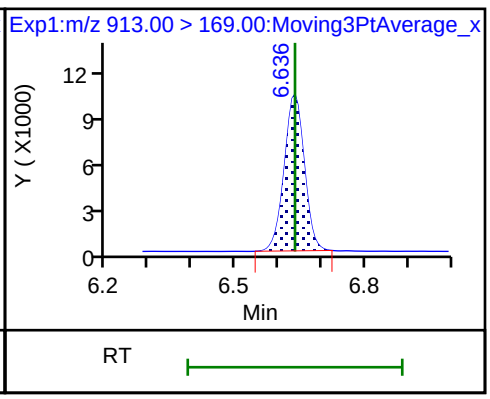
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

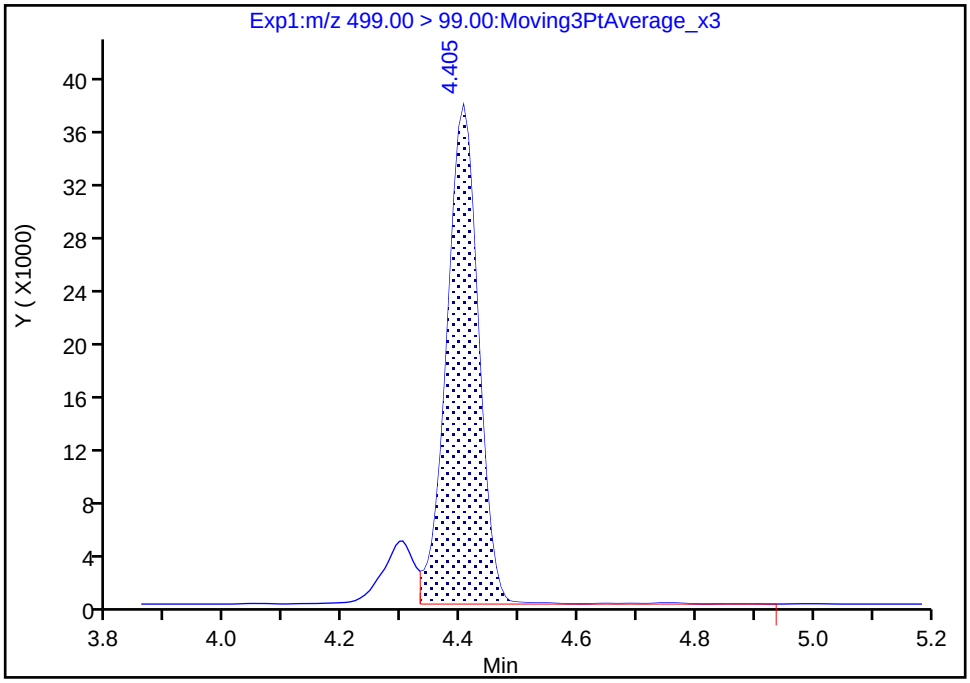
Data File:	\\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_006.d				
Injection Date:	05-Jun-2020 14:28:33	Instrument ID:	A15		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	52	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00 mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

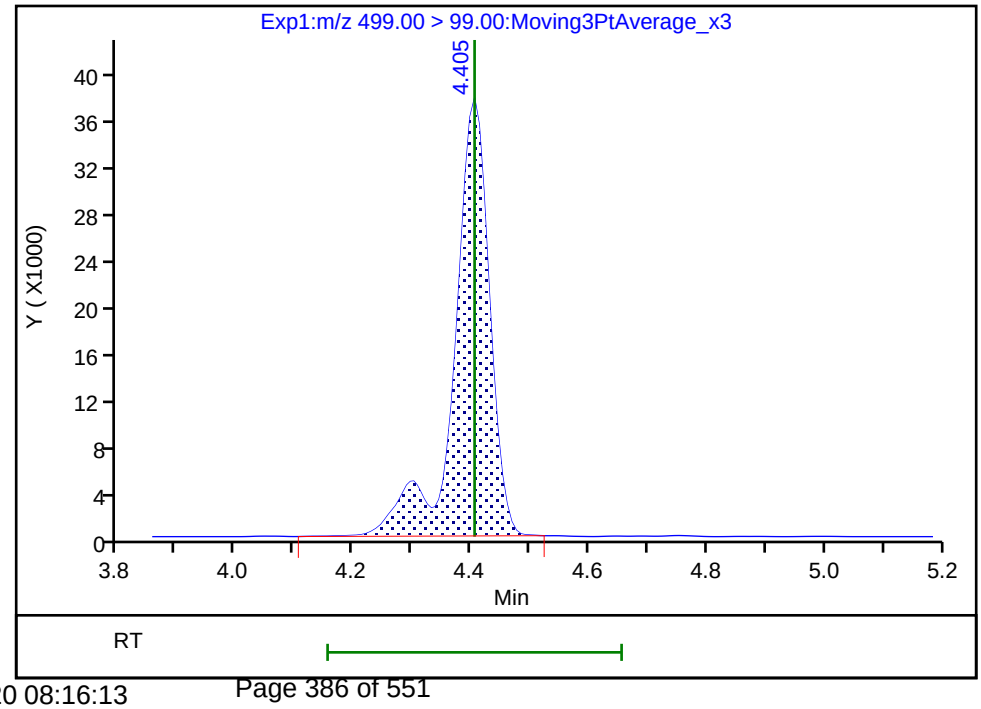
Processing Integration Results

RT: 4.40
Area: 141230
Amount: 0.930705
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 157080
Amount: 0.921863
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:16:13

Audit Action: Manually Integrated Audit Reason: Isomers

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_006.d

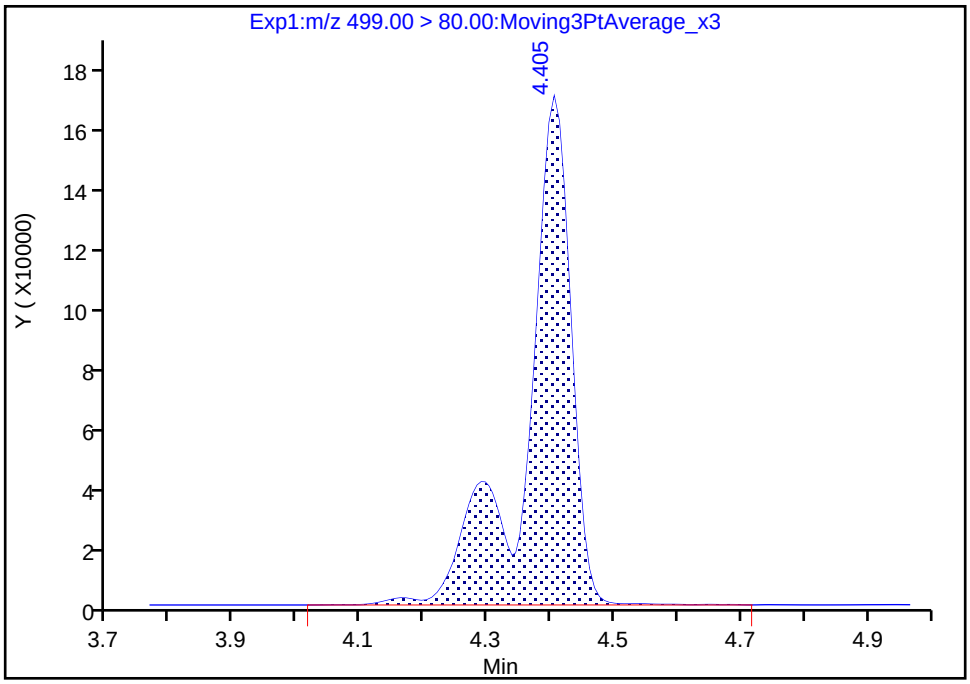
Injection Date:	05-Jun-2020 14:28:33	Instrument ID:	A15		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	SACINSTA15	ALS Bottle#:	52	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A15	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00 mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

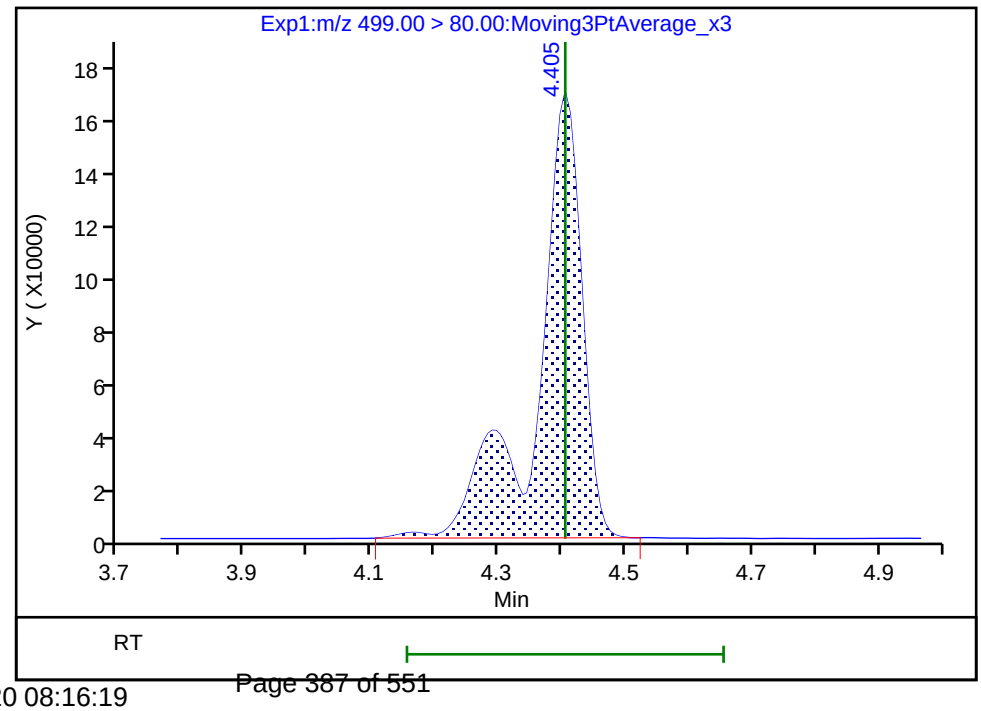
Processing Integration Results

RT: 4.40
Area: 825629
Amount: 0.930705
Amount Units: ng/ml



Manual Integration Results

RT: 4.40
Area: 817785
Amount: 0.921863
Amount Units: ng/ml



Reviewer: koucharis, 08-Jun-2020 08:16:19

Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383943/15 Calibration Date: 06/05/2020 16:17

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.05_A15_PFC_A_018.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9260	0.9604		2.59	2.50	3.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	1.007	1.004		2.49	2.50	-0.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9749	0.999		2.26	2.21	2.4	50.0
4:2 FTS	AveID	2.255	2.372		2.46	2.34	5.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9375	0.9194		2.45	2.50	-1.9	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7335	0.7476		2.39	2.35	1.9	50.0
HFPO-DA (GenX)	AveID	0.9134	0.9438		2.58	2.50	3.3	40.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.011	1.079		2.67	2.50	6.8	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.123	1.067		2.16	2.28	-5.0	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	7.331	7.695		2.47	2.36	5.0	50.0
6:2 FTS	AveID	1.966	2.094		2.53	2.37	6.6	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.091	1.181		2.58	2.38	8.2	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.057	1.092		2.58	2.50	3.3	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	0.9894	1.025		2.40	2.32	3.6	40.0
Perfluorononanoic acid (PFNA)	AveID	1.014	1.077		2.65	2.50	6.2	40.0
F-53B Major	AveID	2.729	2.879		2.46	2.33	5.5	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7987	0.8161		2.45	2.40	2.2	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9658	0.9599		2.48	2.50	-0.6	40.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.8783	0.9122		2.60	2.50	3.9	40.0
8:2 FTS	AveID	1.631	1.609		2.36	2.40	-1.4	40.0
NMeFOSAA	AveID	0.7297	0.7359		2.52	2.50	0.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.7009	0.6983		2.40	2.41	-0.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7214	0.6723		2.33	2.50	-6.8	40.0
N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	AveID	0.7067	0.6941		2.46	2.50	-1.8	40.0
F-53B Minor	AveID	2.579	2.629		2.40	2.36	1.9	50.0
NMeFOSE	AveID	1.047	1.037		2.48	2.50	-0.9	40.0
NMeFOSA	AveID	0.9416	1.046		2.78	2.50	11.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9816	0.9921		2.53	2.50	1.1	40.0
10:2 FTS	AveID	1.287	1.292		2.42	2.41	0.4	50.0
NEtFOSE	AveID	1.024	0.9251		2.26	2.50	-9.6	40.0
NEtFOSA	AveID	1.002	1.142		2.85	2.50	14.0	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.2435	0.2631		2.62	2.42	8.1	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383943/15 Calibration Date: 06/05/2020 16:17

Instrument ID: A15 Calib Start Date: 06/04/2020 11:56

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/04/2020 12:51

Lab File ID: 2020.06.05_A15_PFC_A_018.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotridecanoic acid (PFTriA)	AveID	0.7891	0.8154		2.58	2.50	3.3	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.000	0.996		2.49	2.50	-0.4	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8615		2.51	2.50	0.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.4920	0.4844		2.46	2.50	-1.6	50.0
13C4 PFBA	Ave	1.583	1.527		2.41	2.50	-3.5	50.0
13C5 PFPeA	Ave	1.414	1.372		2.43	2.50	-3.0	50.0
13C3 PFBS	Ave	0.9803	0.9651		2.29	2.33	-1.6	50.0
M2-4:2 FTS	Ave	0.1305	0.1230		2.20	2.34	-5.7	50.0
13C2 PFHxA	Ave	1.374	1.380		2.51	2.50	0.5	50.0
13C3 HFPO-DA	Ave	0.3145	0.3220		2.56	2.50	2.4	50.0
13C4 PFHpA	Ave	1.090	1.076		2.47	2.50	-1.2	50.0
18O2 PFHxS	Ave	0.4715	0.4684		2.35	2.37	-0.7	50.0
M2-6:2 FTS	Ave	0.1440	0.1422		2.34	2.38	-1.3	50.0
13C4 PFOA	Ave	0.9856	0.9827		2.49	2.50	-0.3	50.0
13C4 PFOS	Ave	0.3660	0.3524		2.30	2.39	-3.7	50.0
13C5 PFNA	Ave	0.7544	0.7357		2.44	2.50	-2.5	50.0
13C2 PFDA	Ave	0.7192	0.7024		2.44	2.50	-2.3	50.0
13C8 FOSA	Ave	0.7278	0.6970		2.39	2.50	-4.2	50.0
M2-8:2 FTS	Ave	0.1717	0.1650		2.30	2.40	-3.9	50.0
d3-NMeFOSAA	Ave	0.2685	0.2615		2.43	2.50	-2.6	50.0
13C2 PFUnA	Ave	0.6132	0.5843		2.38	2.50	-4.7	50.0
d5-NEtFOSAA	Ave	0.2733	0.2611		2.39	2.50	-4.5	50.0
d7-N-MeFOSE-M	Ave	0.1833	0.1812		12.4	12.5	-1.2	50.0
d-N-MeFOSA-M	Ave	0.2300	0.2121		2.31	2.50	-7.8	50.0
13C2 PFDoA	Ave	0.5432	0.5176		2.38	2.50	-4.7	50.0
d9-N-EtFOSE-M	Ave	0.2246	0.2220		12.4	12.5	-1.1	50.0
d-N-EtFOSA-M	Ave	0.2334	0.2163		2.32	2.50	-7.3	50.0
13C2 PFTeDA	Ave	0.3551	0.3183		2.24	2.50	-10.4	50.0
13C2 PFHxDA	Ave	0.2944	0.2678		2.27	2.50	-9.0	50.0
13C8 PFOA	Ave	0.6050	0.6050		2.45	2.45	0.0	50.0
13C8 PFOS	Ave	0.1244	0.1203		2.31	2.39	-3.3	50.0

Eurofins TestAmerica, Sacramento

Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_018.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 05-Jun-2020 16:17:56 ALS Bottle#: 53 Worklist Smp#: 15
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5 (27)
Misc. Info.: Plate: 5 Rack: 1
Operator ID: SACINSTA15 Instrument ID: A15
Sublist: chrom-PFAS_A15*sub1

Method: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\PFAS_A15.m
Limit Group: LC PFC ICAL
Last Update: 08-Jun-2020 08:21:23 Calib Date: 04-Jun-2020 12:51:36
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A15\20200604-96950.b\2020.06.04_A15_PFC_ICAL_A_010.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1027

First Level Reviewer: koucharis Date: 08-Jun-2020 08:21:22
Ratio Calibration: Average of Initial Calibration

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	2.549	2.544	0.005	0.628	9412802	2.41		96.5	20607	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.549	2.552	-0.003	1.000	9040013	2.59		104	2127	
D 4 13C5 PFPeA										
267.90 > 223.00	2.898	2.903	-0.005	0.715	8456479	2.43		97.0	13704	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.898	2.903	-0.005	1.000	8493523	2.49		99.7	395	
D 9 13C3 PFBS										
301.90 > 80.00	2.929	2.934	-0.005	0.722	5531109	2.29		98.4	9141	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.939	2.944	-0.005	1.004	5250644	2.26	Target=2.14	102	315	
298.90 > 99.00	2.939	2.944	-0.005	1.004	2393968		2.19(1.07-3.21)		566	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.229	3.229	0.001	0.796	708198	2.20		94.3	917	
8 1H,1H,2H,2H-perfluorohexanesulfo										
327.00 > 307.00	3.229	3.229	0.001	1.000	1679888	2.46		105	10092	
D 11 13C2 PFHxA										
315.00 > 270.00	3.276	3.276	0.0	0.808	8506838	2.51		100	11943	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
10 Perfluorohexanoic acid										
313.00 > 269.00	3.276	3.276	0.0	1.000	7821492	2.45	Target=15.73	98.1	1706	
313.00 > 119.00	3.276	3.276	0.0	1.000	517616		15.11(7.86-23.59)		1060	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.286	3.296	-0.010	1.122	4170571	2.39	Target=2.69	102	1058	
349.00 > 99.00	3.286	3.296	-0.010	1.122	1579613		2.64(1.35-4.04)		4798	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.393	3.392	0.001	0.837	1984252	2.56		102	9449	
13 Perfluoro(2-propoxypropanoic) ac										
285.00 > 169.00	3.393	3.392	0.001	1.000	1872715	2.58		103	6542	
D 18 13C4 PFHpA										
367.00 > 322.00	3.667	3.667	0.0	0.904	6633105	2.47		98.8	13641	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.677	3.667	0.010	1.003	7160066	2.67	Target=3.80	107	1600	
363.00 > 169.00	3.667	3.667	0.0	1.000	1766658		4.05(1.90-5.71)		5745	
D 17 18O2 PFHxS										
403.00 > 84.00	3.677	3.677	0.0	0.907	2730715	2.35		99.3	5919	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.677	3.677	0.0	1.000	2802888	2.16	Target=2.99	95.0	81923	
399.00 > 99.00	3.677	3.677	0.0	1.000	969254		2.89(1.50-4.49)		3486	
19 DONA										
377.00 > 251.00	3.716	3.716	0.0	0.842	15739961	2.47	Target=2.14	105	14810	
377.00 > 85.00	3.716	3.716	0.0	0.842	7300705		2.16(1.07-3.21)		11984	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.039	4.032	0.007	0.996	832313	2.34		98.7	2952	
21 1H,1H,2H,2H-perfluorooctanesulfo										
427.00 > 407.00	4.039	4.032	0.007	1.000	1739552	2.53		107	6012	
$ 26 13C8 PFOA										
421.00 > 376.00	4.055	4.048	0.007	1.000	3650199	2.45		100	12245	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.055	4.048	0.007	0.919	2440550	2.58	Target=3.77	108	5032	
449.00 > 99.00	4.055	4.048	0.007	0.919	633232		3.85(1.89-5.66)		2718	
D 25 13C4 PFOA										
417.00 > 372.00	4.055	4.056	-0.001	1.000	6055797	2.49		99.7	10805	
* 23 13C2 PFOA										
415.00 > 370.00	4.055	4.056	-0.001		6162411	2.50			10432	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.055	4.056	-0.001	1.000	6609926	2.58	Target=2.88	103	380	
413.00 > 169.00	4.055	4.056	-0.001	1.000	2312436		2.86(1.44-4.31)		4065	
$ 28 13C8 PFOS										
507.00 > 99.00	4.403	4.405	-0.002	1.086	708695	2.31		96.7	3454	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 27 13C4 PFOS										
503.00 > 80.00	4.411	4.405	0.006	1.088	2075914	2.30		96.3	4388	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.411	4.405	0.006	1.000	2065008	2.40	Target=4.89	104	3552	
499.00 > 99.00	4.411	4.405	0.006	1.000	420120		4.92(2.44-7.33)		1974	
D 30 13C5 PFNA										
468.00 > 423.00	4.427	4.421	0.006	1.092	4533612	2.44		97.5	8085	
31 Perfluorononanoic acid										
463.00 > 419.00	4.419	4.421	-0.002	0.998	4881254	2.65	Target=7.00	106	677	
463.00 > 169.00	4.427	4.421	0.006	1.000	651239		7.50(3.50-10.51)		2626	
32 9-Chlorohexadecafluoro-3-oxanona										
531.00 > 351.00	4.597	4.599	-0.001	1.042	5826533	2.46		105	12295	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.734	4.730	0.004	1.073	1701174	2.45	Target=2.77	102	3309	
549.00 > 99.00	4.734	4.730	0.004	1.073	609462		2.79(1.38-4.15)		5430	
D 33 13C8 FOSA										
506.00 > 78.00	4.756	4.752	0.004	1.173	4295024	2.39		95.8	5900	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.756	4.752	0.004	1.000	3918068	2.60		104	5073	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.756	4.752	0.004	1.000	4154610	2.48	Target=10.36	99.4	1075	
513.00 > 169.00	4.756	4.752	0.004	1.000	422231		9.84(5.18-15.54)		180	
D 39 13C2 PFDA										
515.00 > 470.00	4.756	4.752	0.004	1.173	4328266	2.44		97.7	7893	
36 1H,1H,2H,2H-perfluorodecanesulfo										
527.00 > 507.00	4.764	4.752	0.012	1.002	1567140	2.36		98.6	7970	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.756	4.752	0.004	1.173	973768	2.30		96.1	3386	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.912	4.907	0.005	1.211	1611275	2.43		97.4	1858	
41 N-methylperfluorooctanesulfonami										
570.00 > 419.00	4.912	4.907	0.005	1.000	1185773	2.52		101	11571	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.033	5.030	0.003	1.141	1461686	2.40	Target=2.97	99.6	4551	
599.00 > 99.00	5.033	5.030	0.003	1.141	499513		2.93(1.49-4.46)		4069	
D 43 13C2 PFUnA										
565.00 > 520.00	5.060	5.057	0.003	1.248	3600398	2.38		95.3	4874	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.060	5.066	-0.006	1.000	2420507	2.33	Target=7.56	93.2	1202	
563.00 > 169.00	5.060	5.066	-0.006	1.000	351526		6.89(3.78-11.34)		2019	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.069	5.066	0.003	1.250	1609029	2.39		95.5	2199	
46 N-ethylperfluorooctanesulfonamid										
584.00 > 419.00	5.078	5.075	0.003	1.002	1116847	2.46		98.2	1180	
51 11-Chloroeicosafluoro-3-oxaundec										
631.00 > 451.00	5.187	5.184	0.003	1.176	5377870	2.40		102	7081	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.205	5.193	0.012	1.283	5581482	12.4		98.8	3963	
48 2-(N-methylperfluoro-1-octanesul										
616.00 > 59.00	5.205	5.211	-0.006	1.000	1157275	2.48		99.1	1671	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.223	5.220	0.003	1.288	1306879	2.31		92.2	145	
50 NMeFOSA										
512.00 > 169.00	5.223	5.220	0.003	1.000	1367230	2.78		111	751	
D 56 13C2 PFDoA										
615.00 > 570.00	5.334	5.331	0.003	1.315	3189381	2.38		95.3	8889	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.334	5.340	-0.006	1.000	3164281	2.53	Target=7.18	101	490	
613.00 > 169.00	5.334	5.340	-0.006	1.000	443377		7.14(3.59-10.76)		2973	
58 1H,1H,2H,2H-perfluorododecanesul										
627.00 > 607.00	5.352	5.358	-0.006	1.125	1266327	2.42		100	11608	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.370	5.367	0.003	1.324	6839859	12.4		98.9	4702	
53 2-(N-ethylperfluoro-1-octanesulf										
630.00 > 59.00	5.377	5.375	0.002	1.001	1265535	2.26		90.4	1962	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.385	5.383	0.002	1.328	1333097	2.32		92.7	348	
55 N-ethylperfluoro-1-octanesulfona										
526.00 > 169.00	5.396	5.394	0.002	1.002	1522936	2.85		114	688	
59 Perfluorododecanesulfonic acid (										
699.00 > 80.00	5.559	5.555	0.004	1.260	553064	2.62	Target=0.79	108	3873	
699.00 > 99.00	5.559	5.555	0.004	1.260	630941		0.88(0.39-1.18)		2674	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.596	5.592	0.004	1.049	2600659	2.58	Target=6.63	103	437	
663.00 > 169.00	5.596	5.592	0.004	1.049	319031		8.15(3.32-9.95)		1530	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.825	5.830	-0.005	1.436	1961487	2.24		89.6	5250	
62 Perfluorotetradecanoic acid										
713.00 > 669.00	5.825	5.830	-0.005	1.000	1954062	2.49	Target=8.46	99.6	498	
713.00 > 219.00	5.825	5.830	-0.005	1.000	223417		8.75(4.23-12.69)		2157	

Report Date: 08-Jun-2020 08:21:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_018.d

Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C2 PFHxDA										
815.00 > 770.00	6.239	6.245	-0.006	1.538	1650271	2.27		91.0	4768	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.248	6.245	0.003	1.002	1421656	2.51	Target=7.92	100	185	
813.00 > 169.00	6.239	6.245	-0.006	1.000	174040		8.17(3.96-11.88)		2181	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.633	6.636	-0.003	1.063	799324	2.46	Target=10.24	98.4	161	
913.00 > 169.00	6.626	6.636	-0.010	1.062	84115		9.50(5.12-15.36)		1309	

Reagents:

LCPFC_LL5_00027 Amount Added: 1.00 Units: mL

Report Date: 08-Jun-2020 08:21:24 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A15\20200605-97075.b\2020.06.05_A15_PFC_A_018.d

Injection Date: 05-Jun-2020 16:17:56 Instrument ID: A15

Lims ID: CCV L5

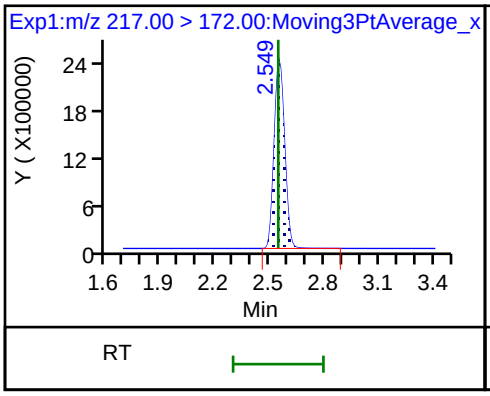
Client ID:

Operator ID: SACINSTA15 ALS Bottle#: 53 Worklist Smp#: 15

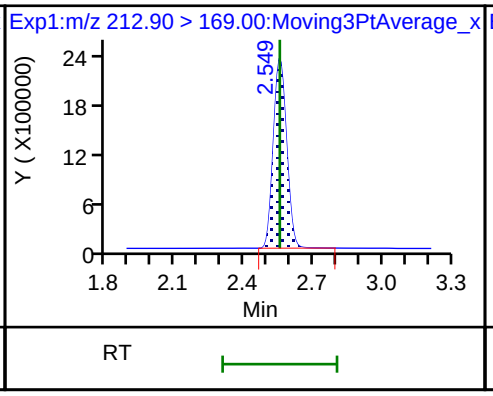
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A15 Limit Group: LC PFC ICAL

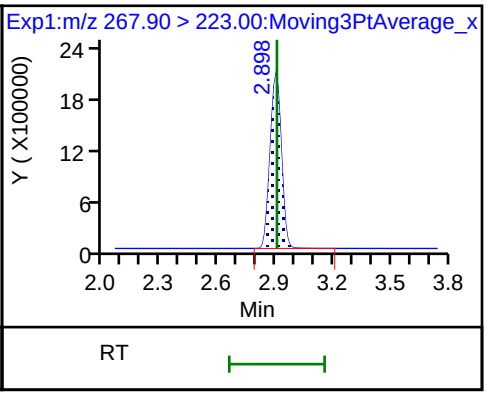
D 1 13C4 PFBA



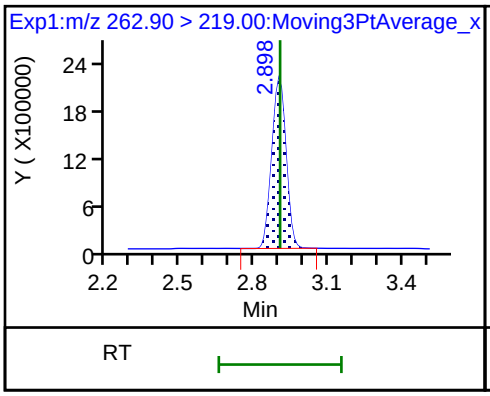
2 Perfluorobutanoic acid



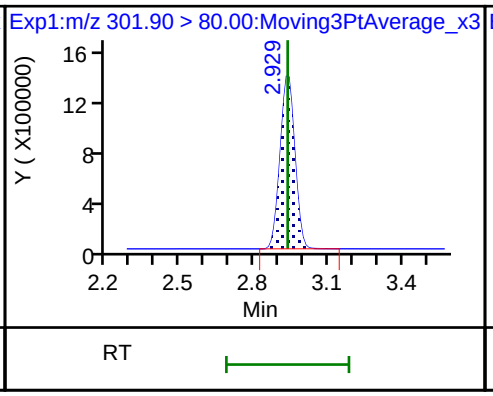
D 4 13C5 PFPeA



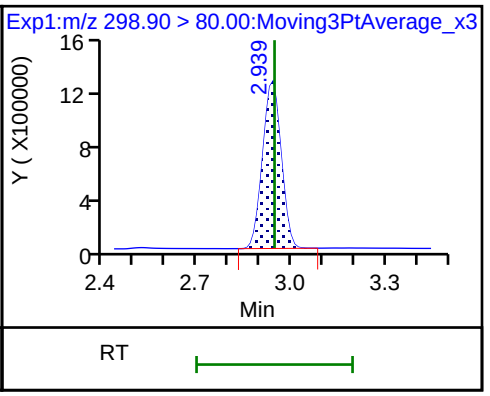
5 Perfluoropentanoic acid



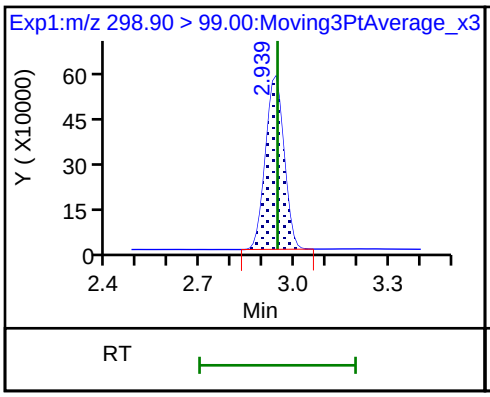
D 9 13C3 PFBS



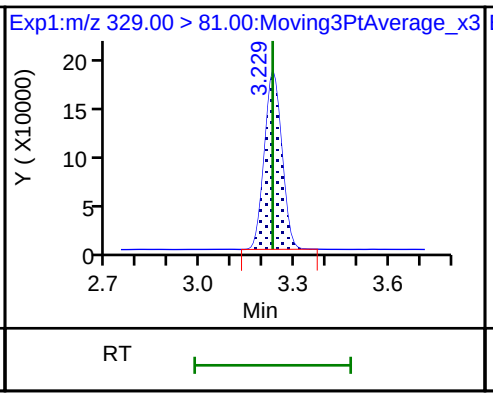
6 Perfluorobutanesulfonic acid



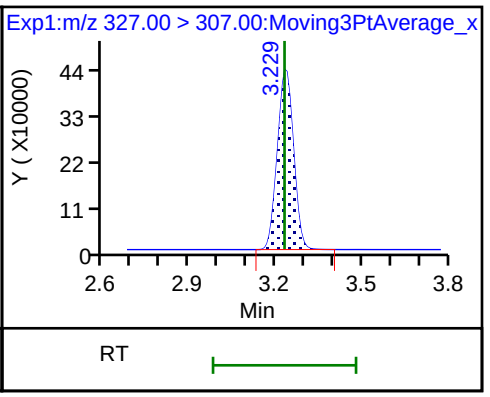
6 Perfluorobutanesulfonic acid



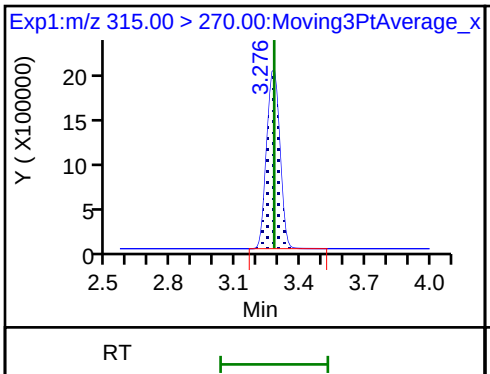
D 7 M2-4:2 FTS



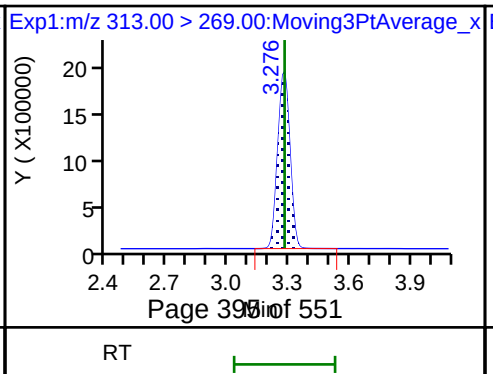
8 1H,1H,2H,2H-perfluorohexanesulfo



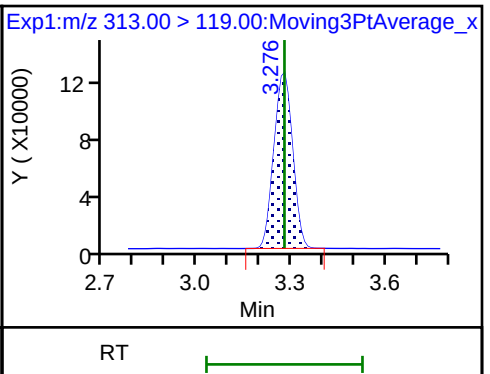
D 11 13C2 PFHxA



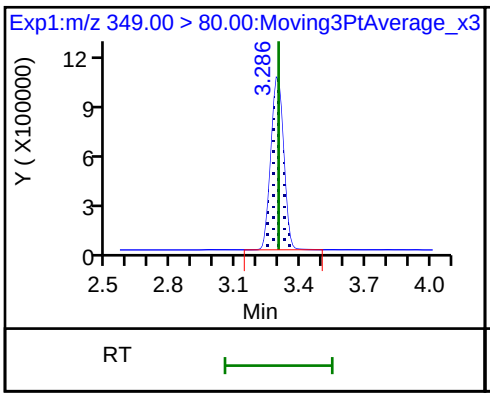
10 Perfluorohexanoic acid



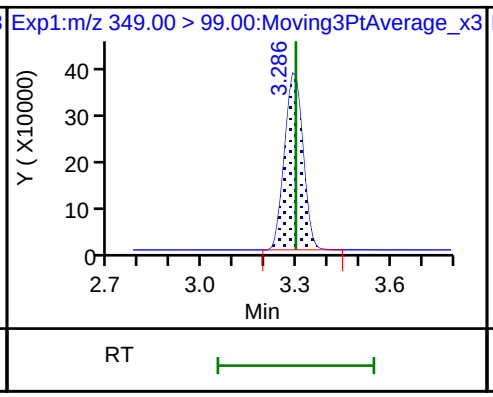
10 Perfluorohexanoic acid



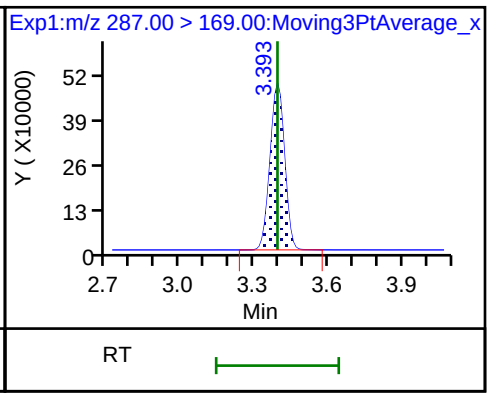
12 Perfluoropentanesulfonic acid



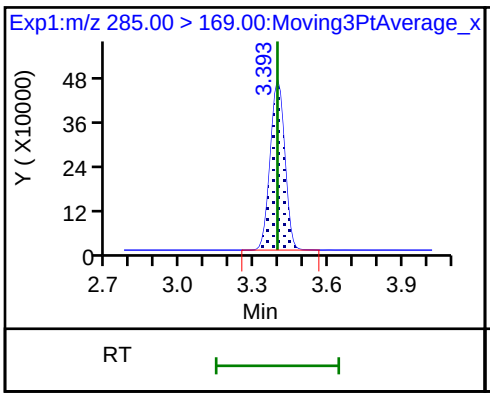
12 Perfluoropentanesulfonic acid



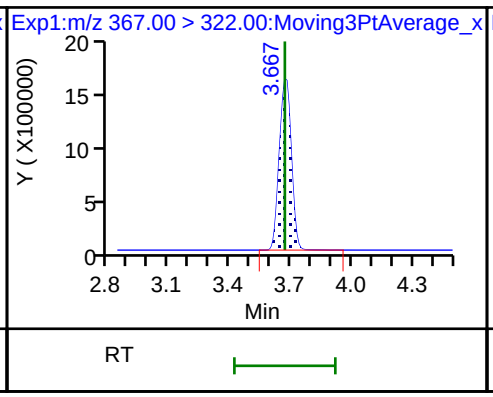
D 14 13C3 HFPO-DA



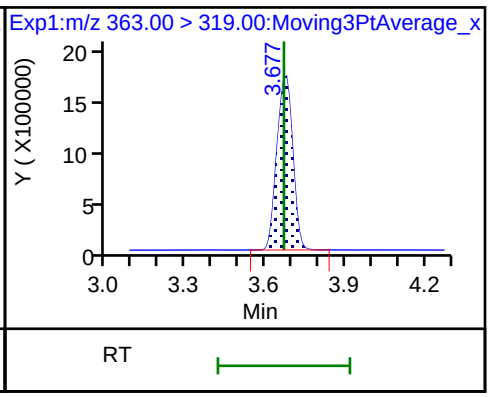
13 Perfluoro(2-propoxypropanoic) ac



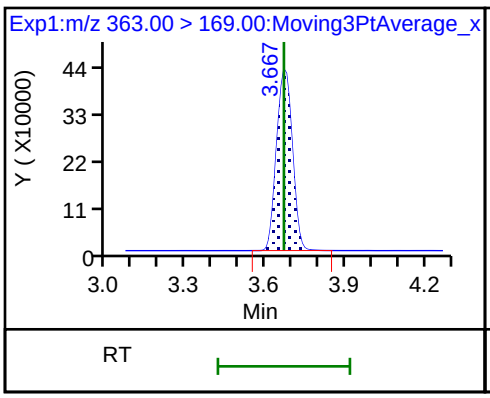
D 18 13C4 PFHpA



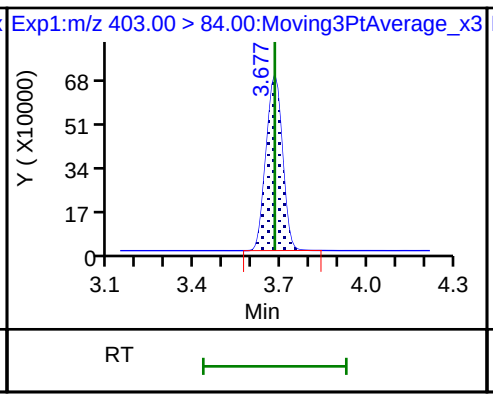
16 Perfluoroheptanoic acid



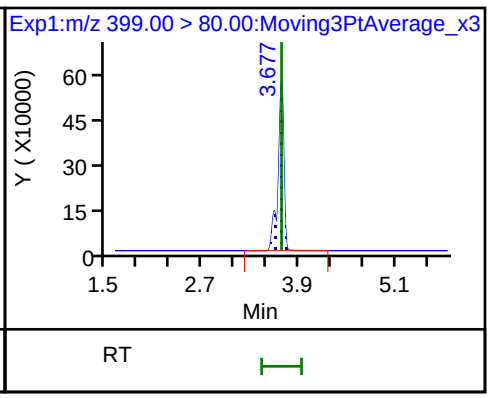
16 Perfluoroheptanoic acid



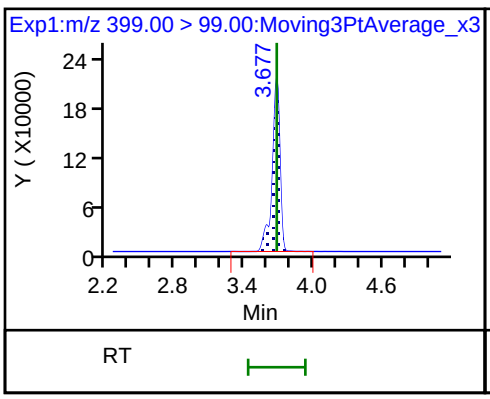
D 17 18O2 PFHxS



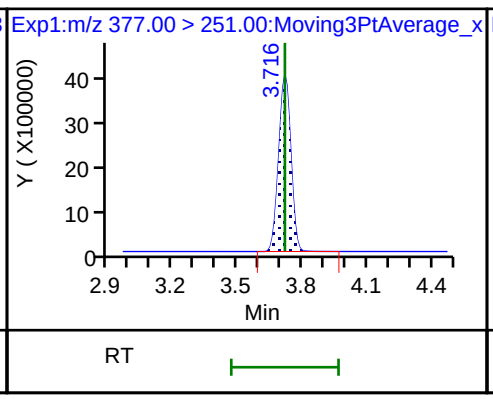
15 Perfluorohexanesulfonic acid



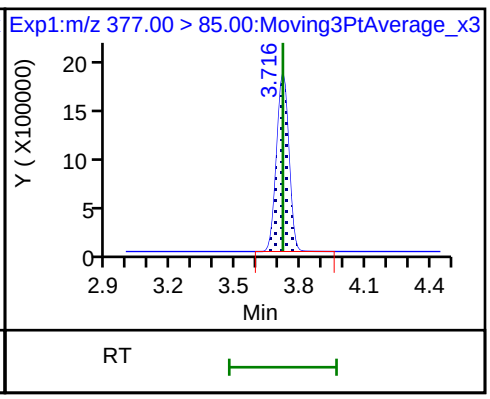
15 Perfluorohexanesulfonic acid



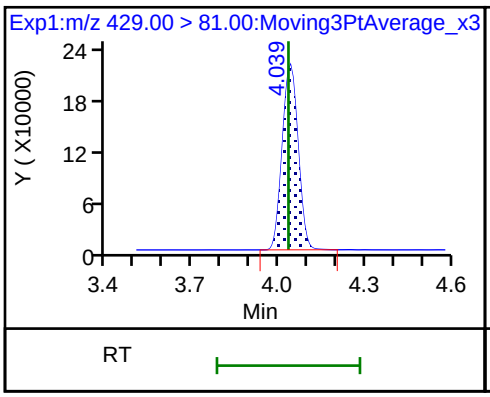
19 DONA



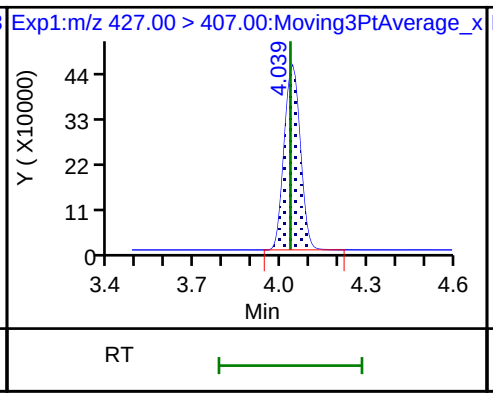
19 DONA



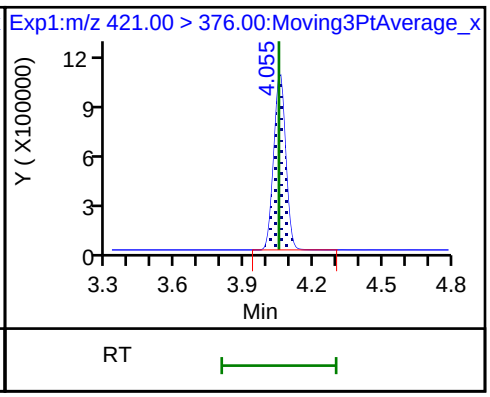
D 20 M2-6:2 FTS



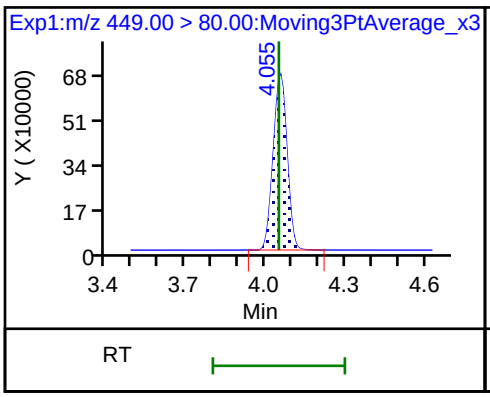
21 1H,1H,2H,2H-perfluorooctanesulfo



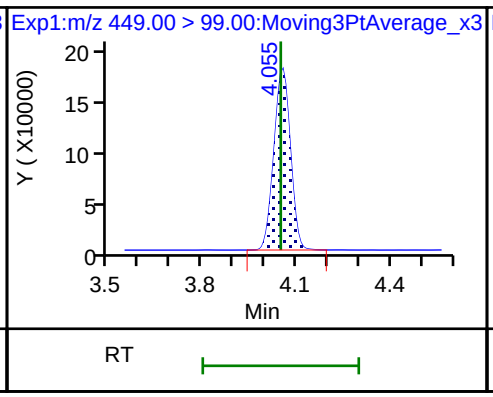
$ 26 13C8 PFOA



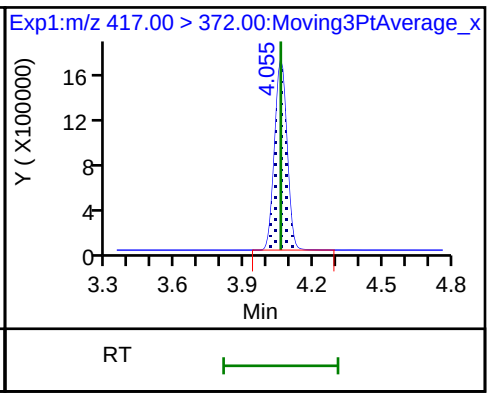
24 Perfluoroheptanesulfonic acid



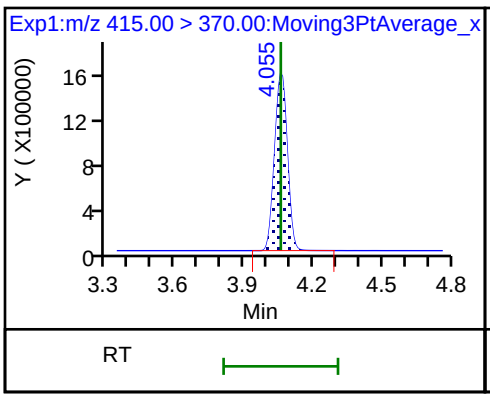
24 Perfluoroheptanesulfonic acid



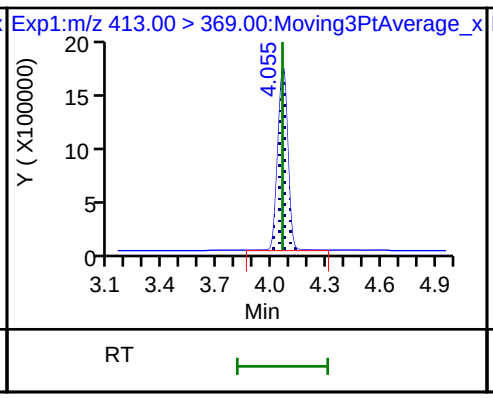
D 25 13C4 PFOA



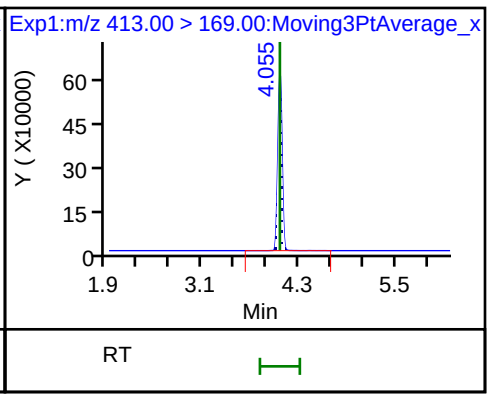
* 23 13C2 PFOA



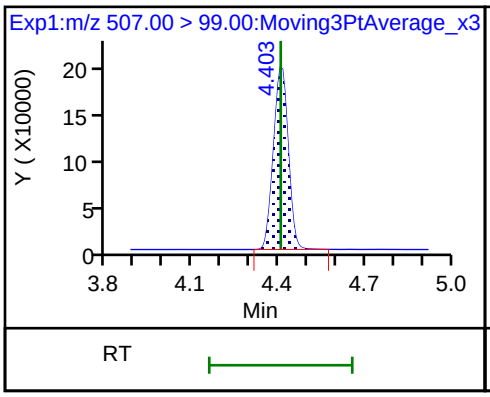
22 Perfluorooctanoic acid



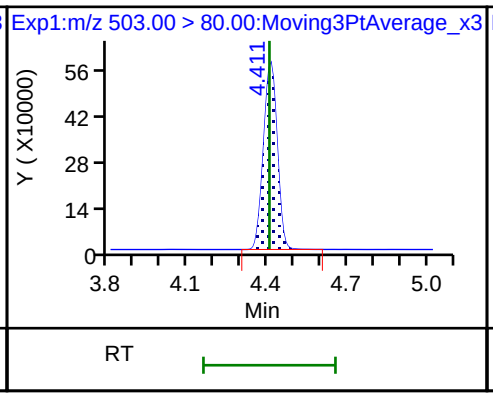
22 Perfluorooctanoic acid



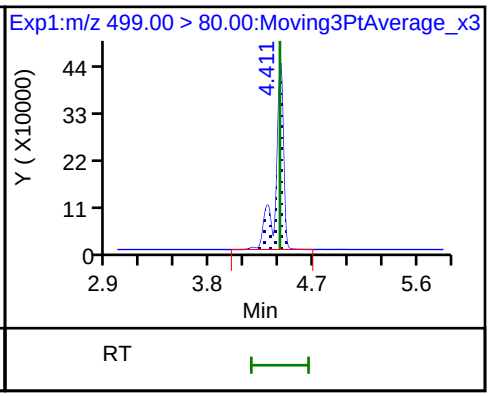
$ 28 13C8 PFOS



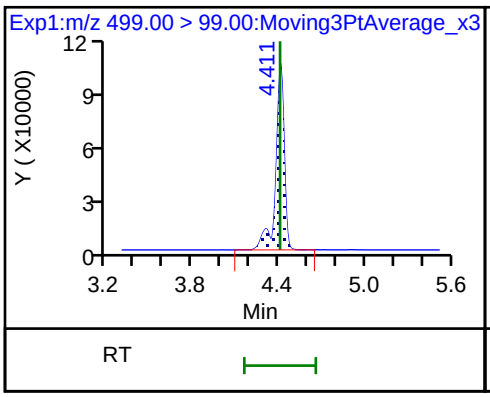
D 27 13C4 PFOS



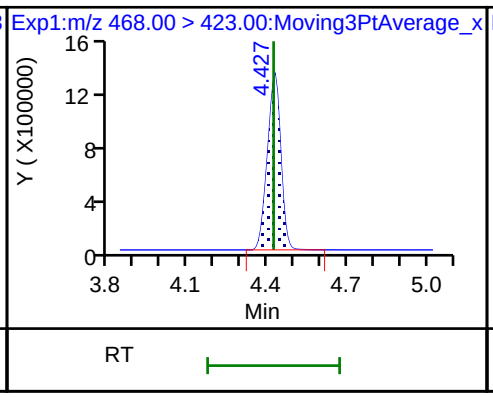
29 Perfluorooctanesulfonic acid



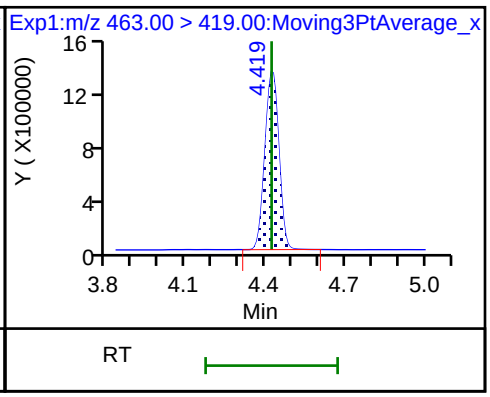
29 Perfluorooctanesulfonic acid



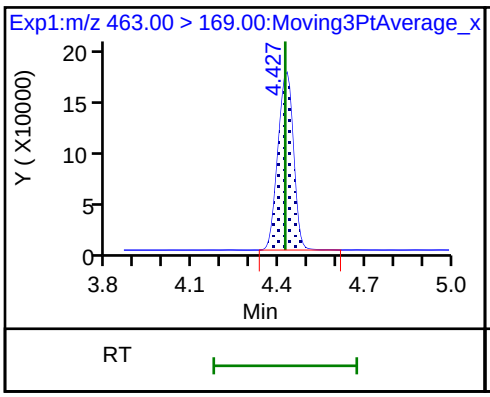
D 30 13C5 PFNA



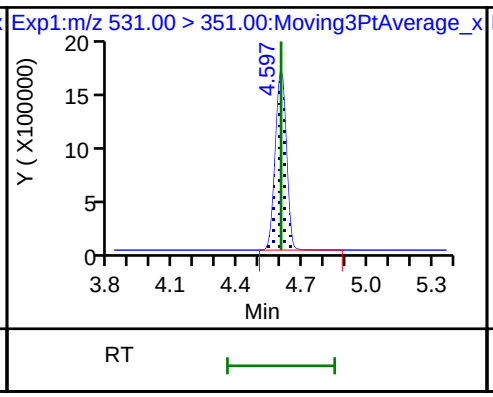
31 Perfluorononanoic acid



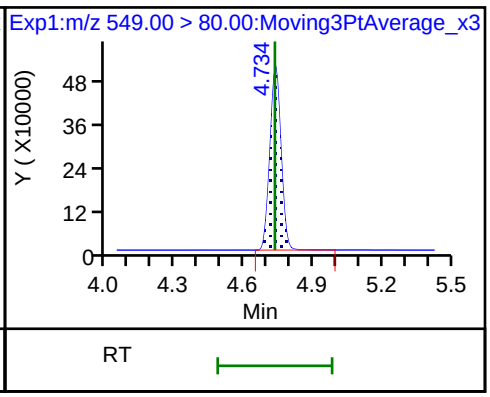
31 Perfluorononanoic acid



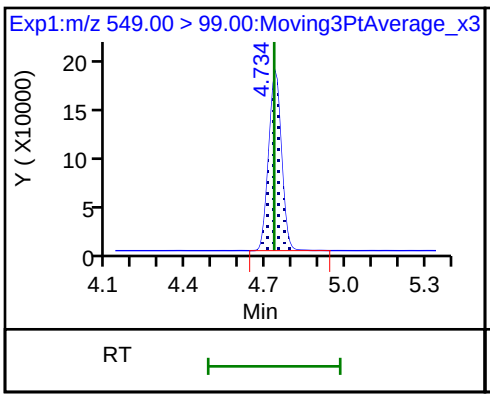
32 9-Chlorohexadecafluoro-3-oxanona



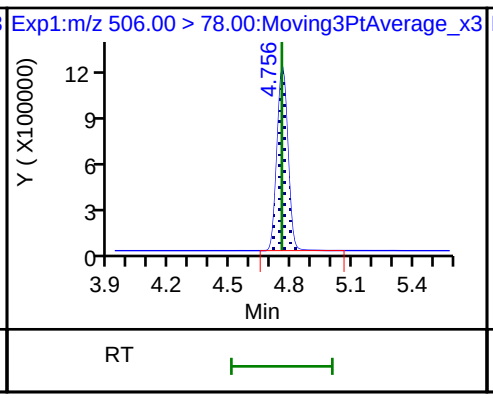
35 Perfluorononanesulfonic acid



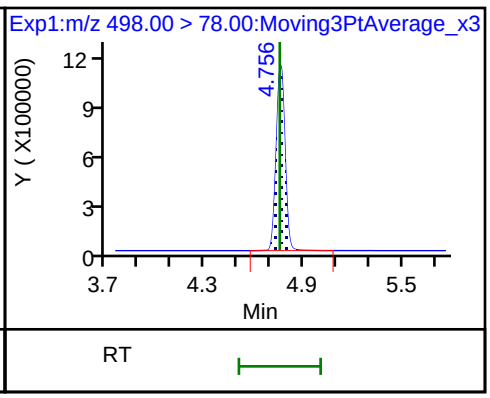
35 Perfluorononanesulfonic acid



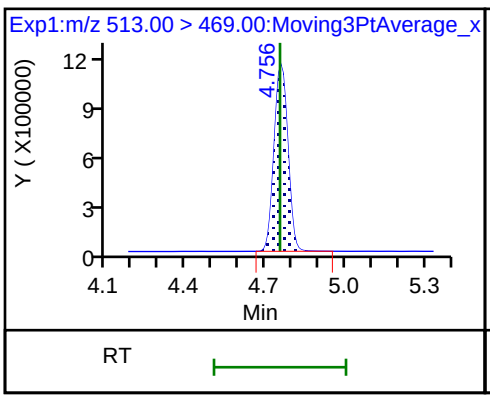
D 33 13C8 FOSA



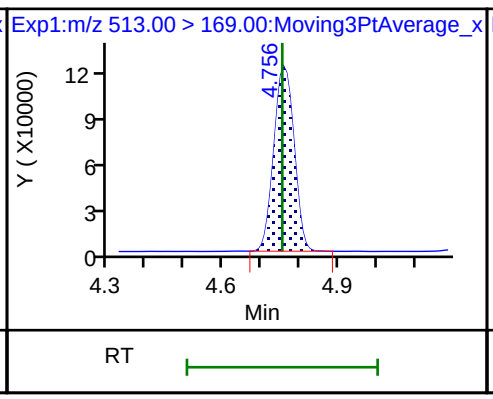
34 Perfluorooctanesulfonamide



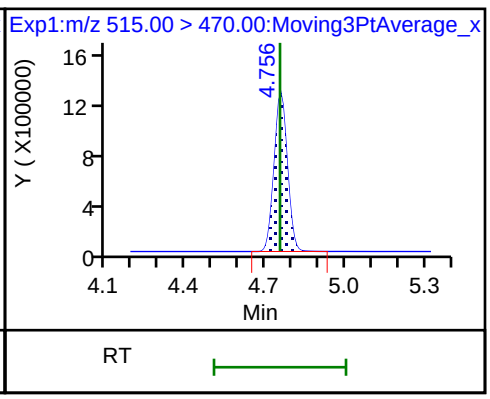
37 Perfluorodecanoic acid



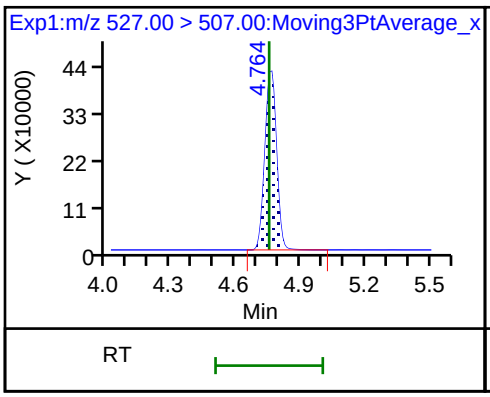
37 Perfluorodecanoic acid



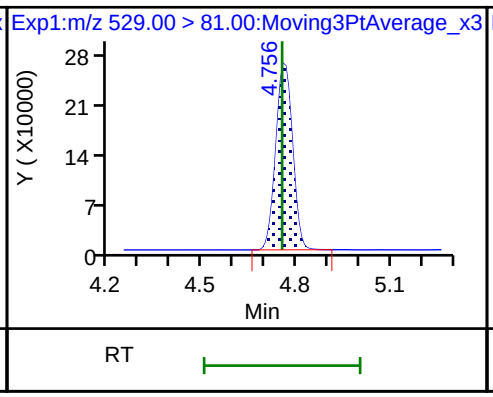
D 39 13C2 PFDA



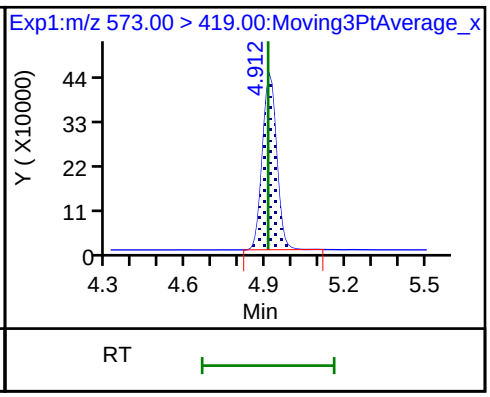
36 1H,1H,2H,2H-perfluorodecanesulfo



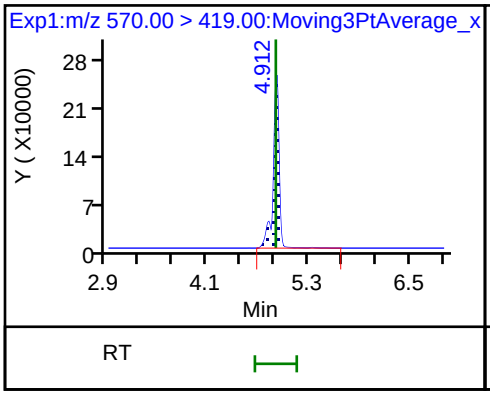
D 38 M2-8:2 FTS



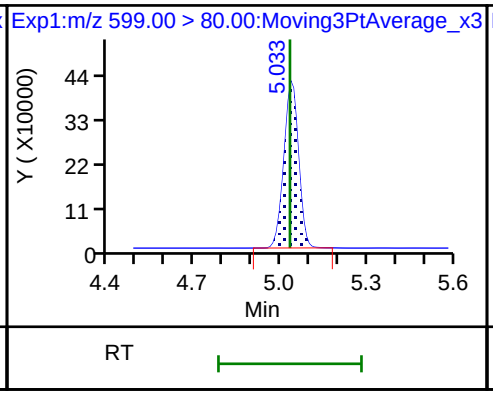
D 40 d3-NMeFOSAA



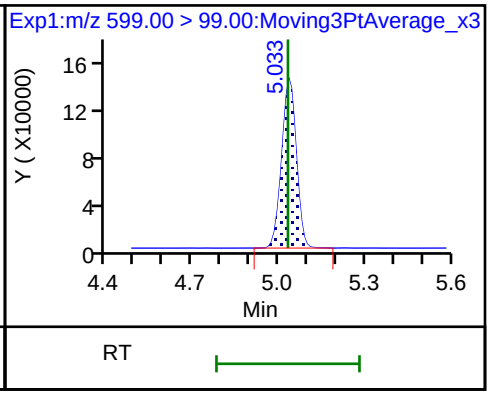
41 N-methylperfluorooctanesulfonami



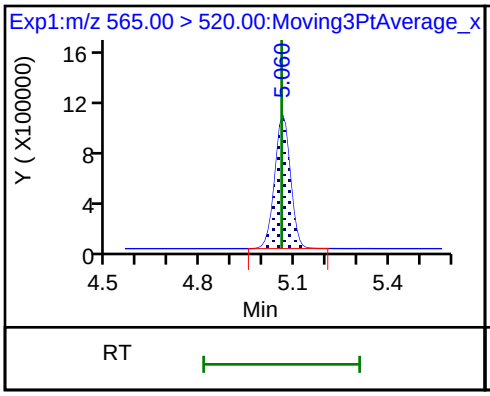
42 Perfluorodecanesulfonic acid



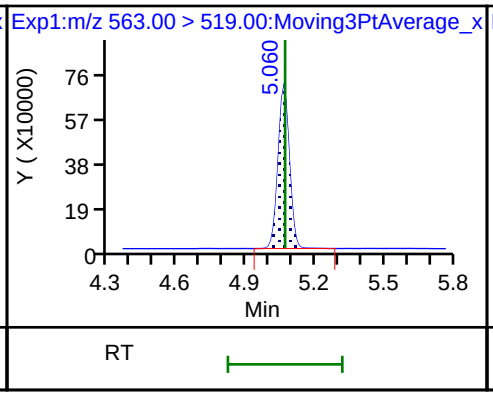
42 Perfluorodecanesulfonic acid



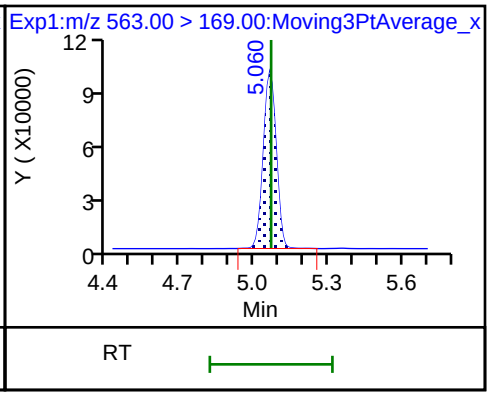
D 43 13C2 PFUnA



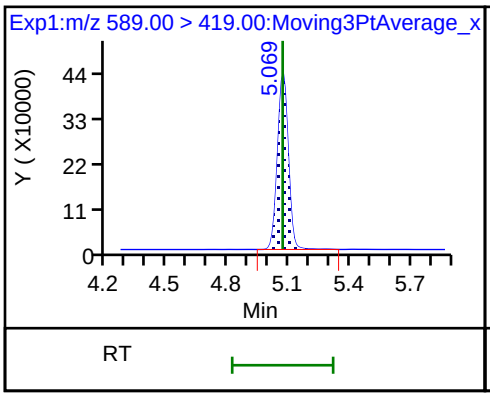
45 Perfluoroundecanoic acid



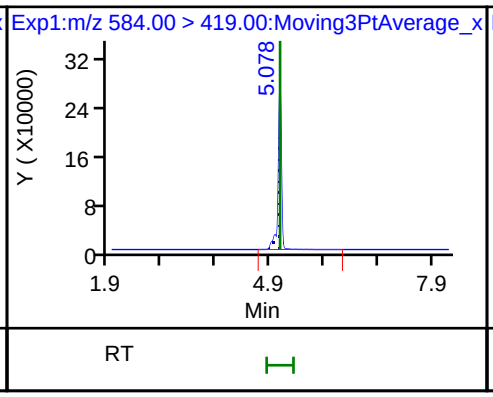
45 Perfluoroundecanoic acid



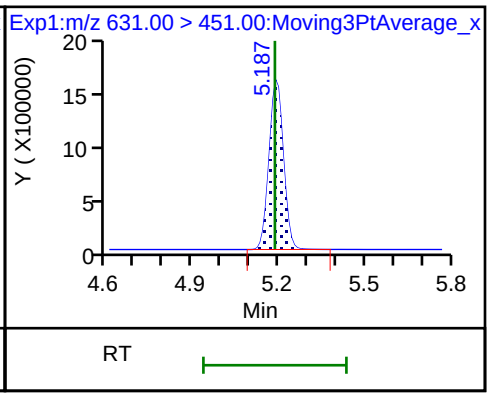
D 44 d5-NEtFOSAA



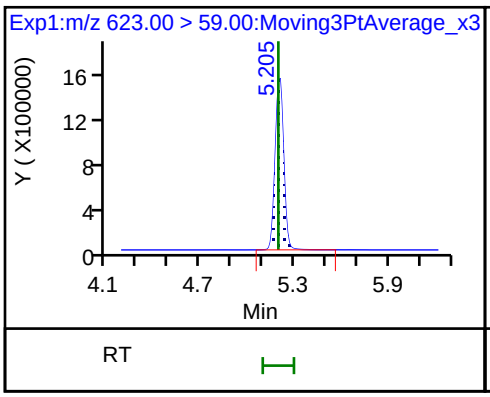
46 N-ethylperfluorooctanesulfonamid



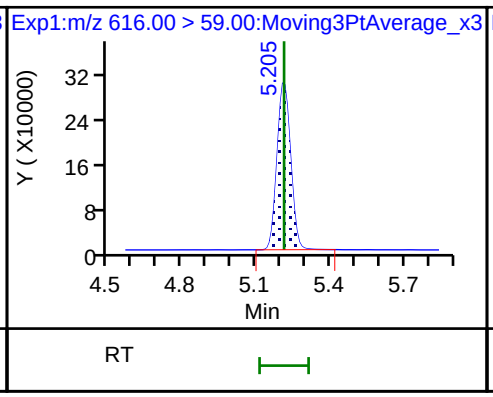
51 11-Chloroeicosafluoro-3-oxaundec



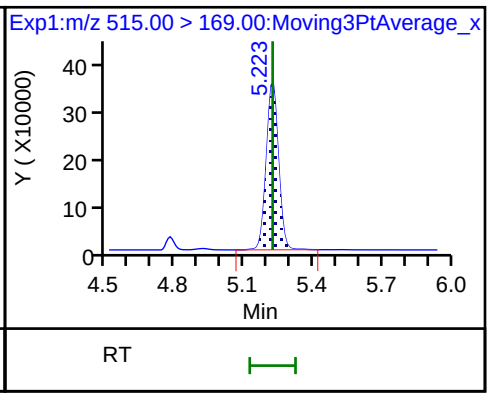
D 47 d7-N-MeFOSE-M



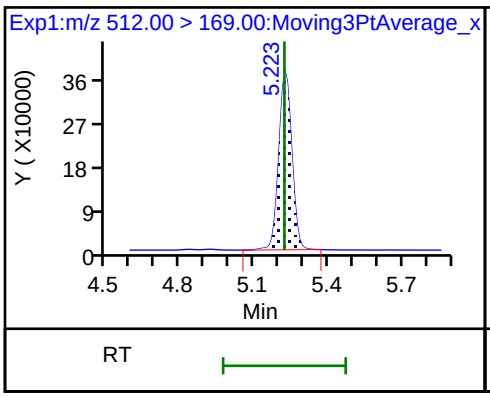
48 2-(N-methylperfluoro-1-octanesul



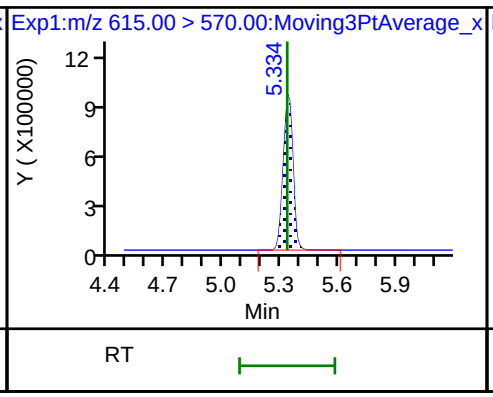
D 49 d-N-MeFOSA-M



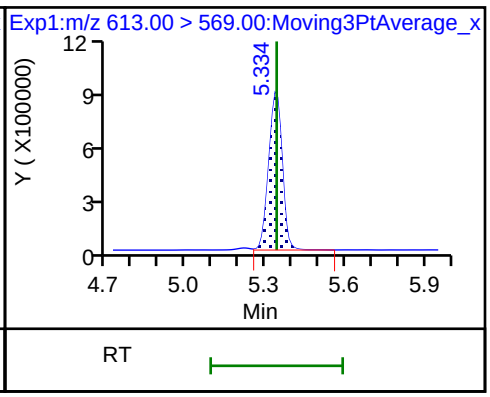
50 NMeFOSA



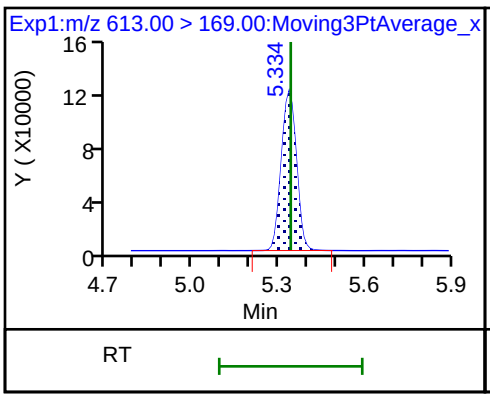
D 56 13C2 PFDoA



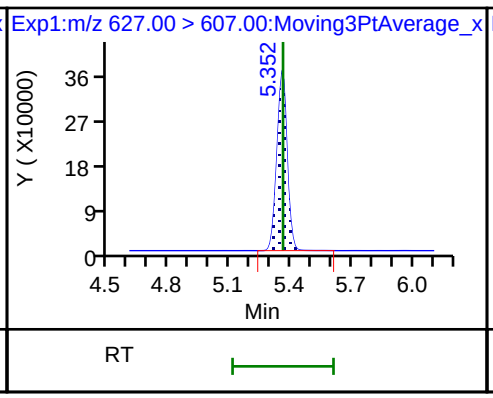
57 Perfluorododecanoic acid



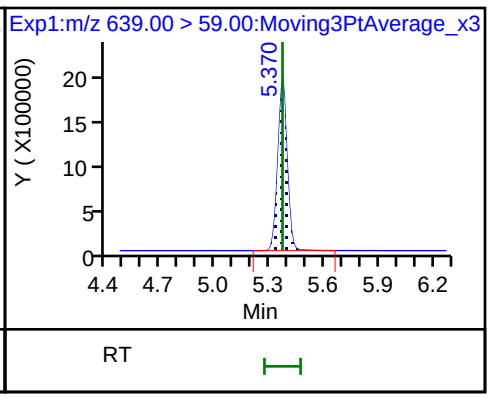
57 Perfluorododecanoic acid



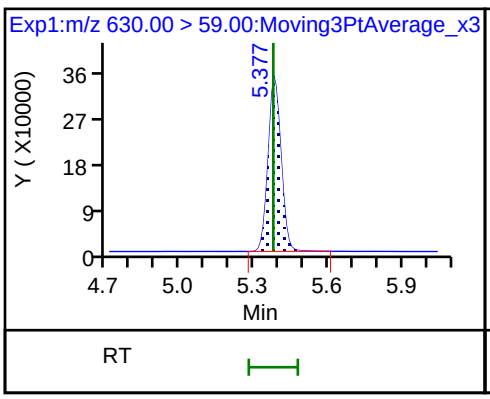
58 1H,1H,2H,2H-perfluorododecanesul



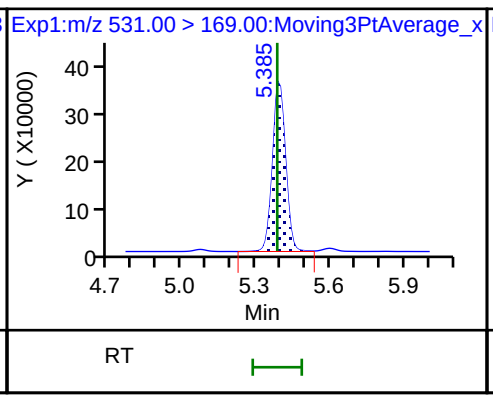
D 52 d9-N-EtFOSE-M



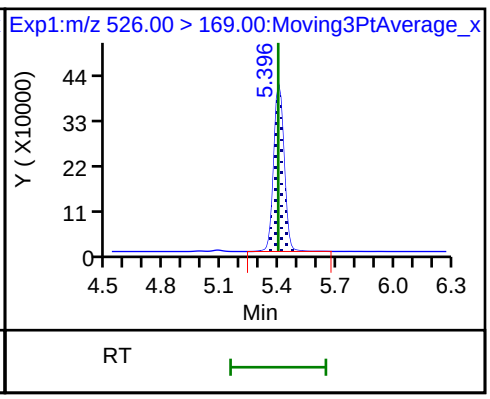
53 2-(N-ethylperfluoro-1-octanesulf



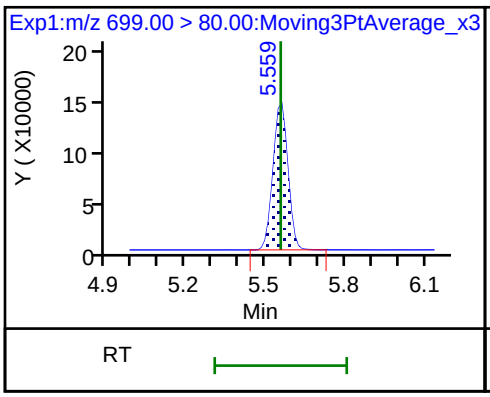
D 54 d-N-EtFOSA-M



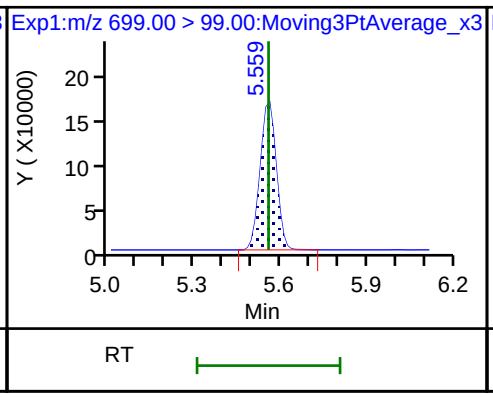
55 N-ethylperfluoro-1-octanesulfona



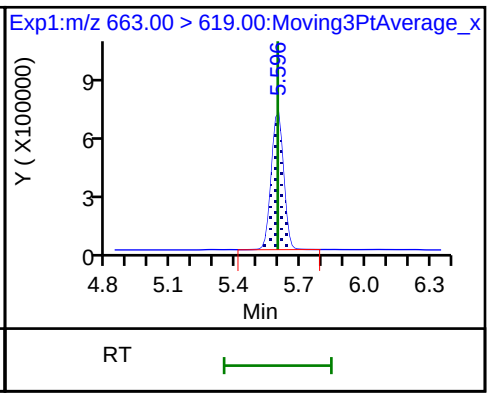
59 Perfluorododecanesulfonic acid (



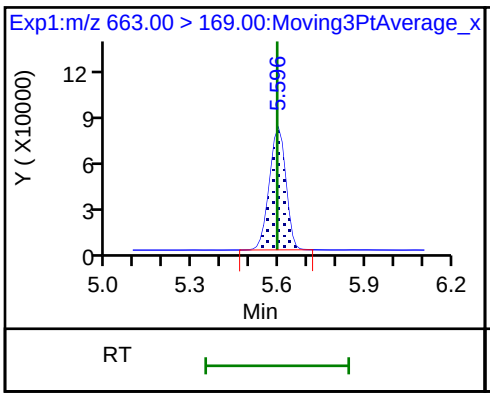
59 Perfluorododecanesulfonic acid (



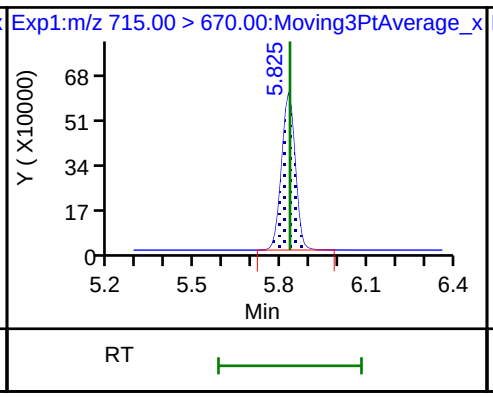
60 Perfluorotridecanoic acid



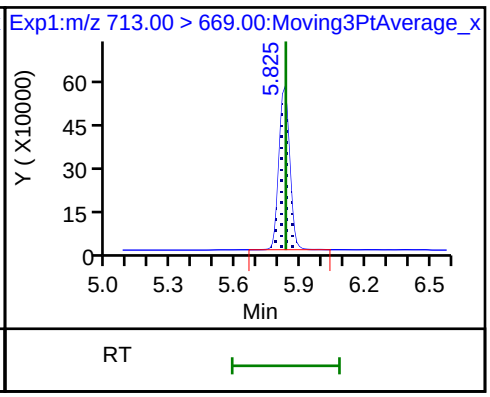
60 Perfluorotridecanoic acid



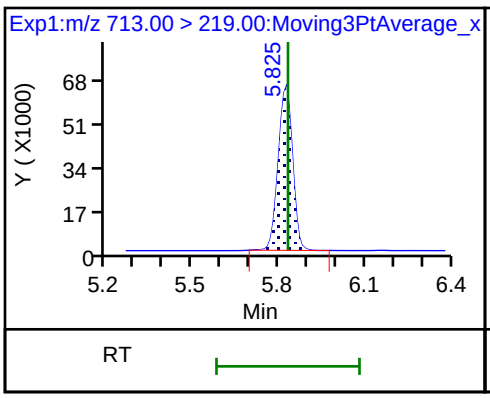
D 61 13C2 PFTeDA



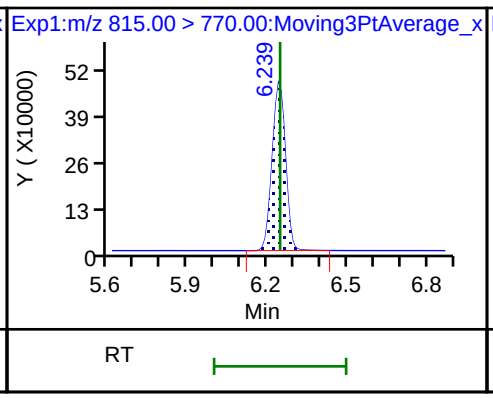
62 Perfluorotetradecanoic acid



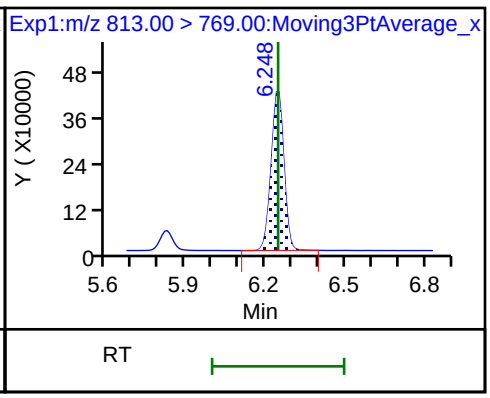
62 Perfluorotetradecanoic acid



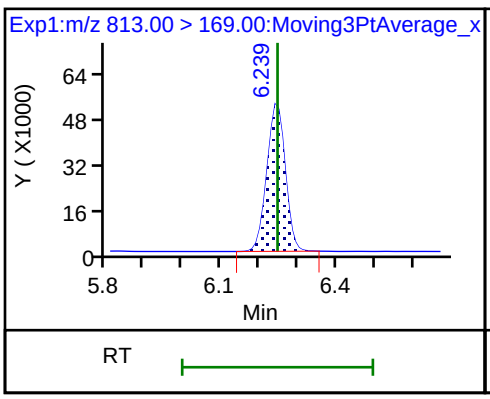
D 64 13C2 PFHxDA



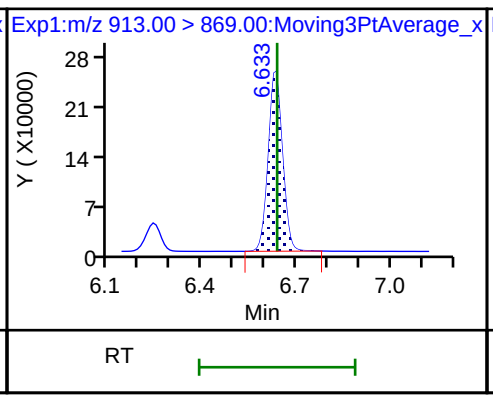
63 Perfluorohexadecanoic acid



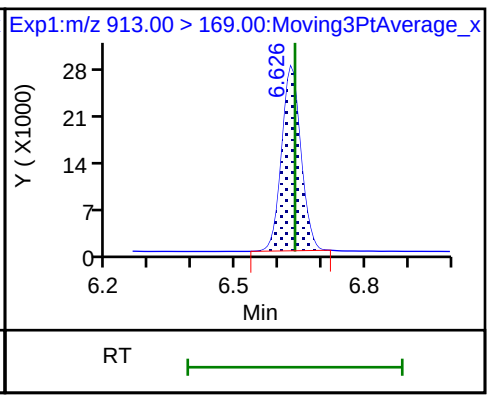
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: ICV 320-383200/11 Calibration Date: 06/03/2020 22:10

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.03_A18_PFC_ICAL_0017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8517	0.9001		2.64	2.50	5.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9630	0.9330		2.42	2.50	-3.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9751	1.079		2.77	2.50	10.7	50.0
4:2 FTS	AveID	2.096	2.255		2.51	2.34	7.6	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9300	1.065		2.86	2.50	14.6	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7168	0.7078		2.32	2.35	-1.3	50.0
HFPO-DA (GenX)	AveID	0.9456	1.012		2.68	2.50	7.1	40.0
Perfluoroheptanoic acid	AveID	0.9856	0.9471		2.40	2.50	-3.9	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.151	1.138		2.47	2.50	-1.1	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	15.91	17.78		2.79	2.50	11.8	50.0
6:2 FTS	AveID	2.003	2.288		2.71	2.37	14.3	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.514	1.540		2.42	2.38	1.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.013	1.044		2.58	2.50	3.1	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.009	1.004		2.49	2.50	-0.5	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9614	1.099		2.86	2.50	14.3	40.0
F-53B Major	AveID	4.948	5.185		2.62	2.50	4.8	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9186	0.8566		2.33	2.50	-6.8	40.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7814	0.7531		2.31	2.40	-3.6	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.8950	1.006		2.81	2.50	12.4	40.0
8:2 FTS	AveID	1.536	1.663		2.59	2.40	8.3	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7080	0.7563		2.67	2.50	6.8	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5780	0.5517		2.30	2.41	-4.6	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7407	0.6890		2.33	2.50	-7.0	40.0
NEtFOSAA	AveID	0.7021	0.7373		2.63	2.50	5.0	40.0
NMeFOSE	AveID	0.9823	1.012		2.57	2.50	3.0	40.0
F-53B Minor	AveID	5.427	5.924		2.73	2.50	9.2	50.0
NMeFOSA	AveID	0.9235	1.027		2.78	2.50	11.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9313	0.9509		2.55	2.50	2.1	40.0
10:2 FTS	AveID	1.215	1.335		2.65	2.41	9.9	50.0
NEtFOSE	AveID	1.004	1.024		2.55	2.50	2.0	40.0
NEtFOSA	AveID	1.045	1.073		2.57	2.50	2.7	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.5352	0.5200		2.35	2.42	-2.8	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8742	0.8408		2.40	2.50	-3.8	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

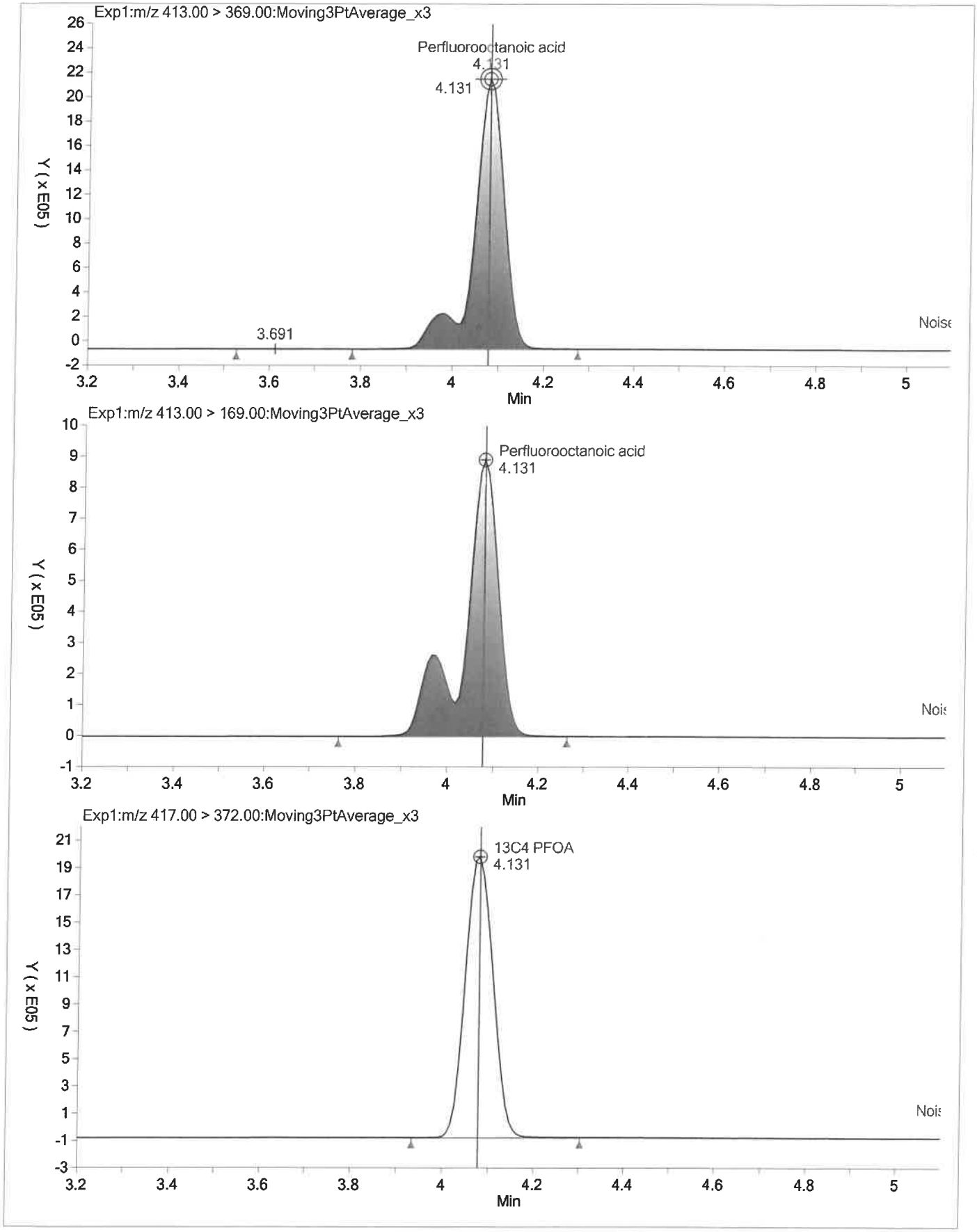
Lab Sample ID: ICV 320-383200/11 Calibration Date: 06/03/2020 22:10

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.03_A18_PFC_ICAL_0017.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1331	0.1414		2.65	2.50	6.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8532		2.42	2.50	-3.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5363	0.5579		2.60	2.50	4.0	50.0
13C4 PFBA	Ave	1.247	1.236		2.48	2.50	-0.9	50.0
13C5 PFPeA	Ave	1.118	1.130		2.53	2.50	1.0	50.0
13C3 PFBS	Ave	0.8747	0.8840		2.35	2.33	1.1	50.0
M2-4:2 FTS	Ave	0.1422	0.1401		2.30	2.34	-1.4	50.0
13C2 PFHxA	Ave	1.114	1.083		2.43	2.50	-2.7	50.0
13C3 HFPO-DA	Ave	0.2176	0.2187		2.51	2.50	0.5	50.0
13C4 PFHpA	Ave	0.9885	1.044		2.64	2.50	5.6	50.0
18O2 PFHxS	Ave	0.4173	0.4435		2.51	2.37	6.3	50.0
M2-6:2 FTS	Ave	0.1146	0.1172		2.43	2.38	2.2	50.0
13C4 PFOA	Ave	0.9904	1.017		2.57	2.50	2.6	50.0
13C4 PFOS	Ave	0.1771	0.1821		2.46	2.39	2.8	50.0
13C5 PFNA	Ave	0.8069	0.8719		2.70	2.50	8.1	50.0
13C8 FOSA	Ave	0.3929	0.4017		2.56	2.50	2.2	50.0
13C2 PFDA	Ave	0.8716	0.8614		2.47	2.50	-1.2	50.0
M2-8:2 FTS	Ave	0.1448	0.1453		2.40	2.40	0.4	50.0
d3-NMeFOSAA	Ave	0.3238	0.3259		2.52	2.50	0.7	50.0
13C2 PFUnA	Ave	0.8155	0.8838		2.71	2.50	8.4	50.0
d5-NEtFOSAA	Ave	0.3303	0.3283		2.48	2.50	-0.6	50.0
d7-N-MeFOSE-M	Ave	0.2336	0.2204		11.8	12.5	-5.6	50.0
d-N-MeFOSA-M	Ave	0.1846	0.1963		2.66	2.50	6.3	50.0
d9-N-EtFOSE-M	Ave	0.2653	0.2861		13.5	12.5	7.8	50.0
13C2 PFDoA	Ave	0.8615	0.9249		2.68	2.50	7.4	50.0
d-N-EtFOSA-M	Ave	0.1896	0.2046		2.70	2.50	7.9	50.0
13C2 PFTeDA	Ave	0.7207	0.7404		2.57	2.50	2.7	50.0
13C2 PFHxDA	Ave	0.5104	0.5151		2.52	2.50	0.9	50.0


Exp1:m/z 413.00 > 369.00:Moving3PtAverage_x3
Perfluorooctanoic acid
4.131
4.131
3.691
Y (x E05)
Min
Exp1:m/z 413.00 > 169.00:Moving3PtAverage_x3
Perfluorooctanoic acid
4.131
Y (x E05)
Min
Exp1:m/z 417.00 > 372.00:Moving3PtAverage_x3
13C4 PFOA
4.131
Y (x E05)
Min

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0017.d
Lims ID: ICV
Client ID:
Sample Type: ICV
Inject. Date: 03-Jun-2020 22:10:54 ALS Bottle#: 9 Worklist Smp#: 11
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: ICV (036)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist:

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 04-Jun-2020 10:46:20 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1046

First Level Reviewer: duranl Date: 04-Jun-2020 10:36:40
Ratio Calibration: Average of Initial Calibration

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	2.582	2.573	0.009	0.625	10030458	2.48		99.1	7470	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.590	2.573	0.017	1.003	9028810	2.64			2345	
D 4 13C5 PFPeA										
267.90 > 223.00	2.961	2.950	0.011	0.717	9165474	2.53		101	5314	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.961	2.950	0.011	1.000	8551559	2.42			1697	
D 9 13C3 PFBS										
301.90 > 80.00	2.997	2.985	0.012	0.725	6669988	2.35		101	7367	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.997	2.997	0.0	1.000	7740942	2.77	Target=2.25		4565	
298.90 > 99.00	2.997	2.997	0.0	1.000	3523490		2.20(1.13-3.38)		2606	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.298	3.288	0.010	0.798	1061830	2.30		98.6	1636	
8 4:2 FTS										
327.00 > 307.00	3.298	3.288	0.010	1.000	2394183	2.51			5631	
D 11 13C2 PFHxA										
315.00 > 270.00	3.341	3.330	0.011	0.809	8788456	2.43		97.3	4194	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.341	3.330	0.011	1.000	9363885	2.86	Target=11.49		2513	
313.00 > 119.00	3.341	3.330	0.011	1.000	811312		11.54(5.74-17.23)		842	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.362	3.352	0.010	1.122	4761582	2.32	Target=2.74		2726	
349.00 > 99.00	3.362	3.352	0.010	1.122	1822741		2.61(1.37-4.12)		2537	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.458	3.447	0.011	0.837	1774380	2.51		100	5185	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.458	3.447	0.011	1.000	1796242	2.68			3963	
D 18 13C4 PFHpA										
367.00 > 322.00	3.740	3.731	0.009	0.905	8469403	2.64		106	7318	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.740	3.731	0.009	1.000	8021366	2.40	Target=3.25		2291	
363.00 > 169.00	3.740	3.731	0.009	1.000	2479022		3.24(1.62-4.87)		3523	
D 17 18O2 PFHxS										
403.00 > 84.00	3.750	3.740	0.010	0.908	3403690	2.51		106	4043	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.750	3.740	0.010	1.000	4095043	2.47	Target=2.90		22833	
399.00 > 99.00	3.750	3.740	0.010	1.000	1326843		3.09(1.45-4.35)		4535	
19 DONA										
377.00 > 251.00	3.790	3.780	0.010	0.843	26257586	2.79	Target=2.01		12297	
377.00 > 85.00	3.790	3.780	0.010	0.843	12861034		2.04(1.00-3.01)		9355	
21 6:2 FTS										
427.00 > 407.00	4.115	4.107	0.008	1.000	2062551	2.71			4335	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.115	4.107	0.008	0.996	903275	2.43		102	2007	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.132	4.124	0.008	0.919	2164816	2.42	Target=3.25		2436	
449.00 > 99.00	4.132	4.124	0.008	0.919	676714		3.20(1.63-4.88)		1683	
D 25 13C4 PFOA										
417.00 > 372.00	4.132	4.132	0.0	1.000	8248238	2.57		103	11540	
* 23 13C2 PFOA										
415.00 > 370.00	4.132	4.132	0.0		8113456	2.50			7912	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.140	4.132	0.008	1.002	8609501	2.58	Target=2.35		4180	
413.00 > 169.00	4.132	4.132	0.0	1.000	3622958		2.38(1.18-3.53)		11899	
D 27 13C4 PFOS										
503.00 > 80.00	4.494	4.486	0.008	1.088	1412061	2.46		103	2746	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.494	4.486	0.008	1.000	1482685	2.49	Target=2.41		1784	
499.00 > 99.00	4.494	4.486	0.008	1.000	599618		2.47(1.21-3.62)		3233	
31 Perfluorononanoic acid										
463.00 > 419.00	4.510	4.502	0.008	1.000	7777005	2.86	Target=6.74		2439	
463.00 > 169.00	4.510	4.502	0.008	1.000	1193419		6.52(3.37-10.11)		2009	
D 30 13C5 PFNA										
468.00 > 423.00	4.510	4.502	0.008	1.092	7074475	2.70		108	7549	
32 9ClFOS										
531.00 > 351.00	4.689	4.682	0.007	1.043	7658006	2.62			7838	
D 33 13C8 FOSA										
506.00 > 78.00	4.829	4.820	0.009	1.169	3258879	2.56		102	5856	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.829	4.829	0.0	1.000	2791444	2.33			2878	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.838	4.829	0.009	1.076	1067849	2.31	Target=1.37		2986	
549.00 > 99.00	4.838	4.829	0.009	1.076	783526		1.36(0.69-2.06)		2571	
D 39 13C2 PFDA										
515.00 > 470.00	4.855	4.855	0.0	1.175	6988646	2.47		98.8	7049	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.855	4.855	0.0	1.000	7032238	2.81	Target=8.07		4282	
513.00 > 169.00	4.855	4.855	0.0	1.000	911170		7.72(4.04-12.11)		334	
36 8:2 FTS										
527.00 > 507.00	4.864	4.855	0.009	1.000	1878245	2.59			3524	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.864	4.855	0.009	1.177	1129578	2.40		100	2107	
D 40 d3-NMeFOSAA										
573.00 > 419.00	5.020	5.010	0.010	1.215	2644503	2.52		101	3727	
41 NMeFOSAA										
570.00 > 419.00	5.029	5.020	0.009	1.002	2000100	2.67			23193	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.147	5.138	0.009	1.145	785530	2.30	Target=1.31		2152	
599.00 > 99.00	5.147	5.138	0.009	1.145	582856		1.35(0.65-1.96)		1879	
D 43 13C2 PFUnA										
565.00 > 520.00	5.175	5.175	0.0	1.252	7170840	2.71		108	9279	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.175	5.175	0.0	1.000	4940677	2.33	Target=6.70		4830	
563.00 > 169.00	5.175	5.175	0.0	1.000	788297		6.27(3.35-10.05)		351	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.175	5.175	0.0	1.252	2663428	2.48		99.4	1939	
46 NEtFOSA										
584.00 > 419.00	5.184	5.184	0.0	1.002	1963830	2.63			1381	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.289	5.278	0.011	1.280	8942181	11.8		94.4	7901	
48 N-MeFOSE-M										
616.00 > 59.00	5.299	5.299	0.0	1.002	1809201	2.57			2577	
51 11ClFOS										
631.00 > 451.00	5.309	5.299	0.010	1.181	8749995	2.73			10978	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.309	5.309	0.0	1.285	1592697	2.66		106	37.1	
50 NMeFOSA										
512.00 > 169.00	5.319	5.309	0.010	1.002	1635392	2.78			685	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.448	5.448	0.0	1.319	11604995	13.5		108	5967	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.458	5.458	0.0	1.000	7135776	2.55	Target=6.20		5489	
613.00 > 169.00	5.458	5.458	0.0	1.000	1199648		5.95(3.10-9.30)		2856	
D 56 13C2 PFDoA										
615.00 > 570.00	5.458	5.458	0.0	1.321	7504149	2.68		107	7812	
53 N-EtFOSE-M										
630.00 > 59.00	5.469	5.458	0.011	1.004	2376900	2.55			2447	

Report Date: 04-Jun-2020 10:46:22 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0017.d
Ratio Calibration: Average of Initial Calibration

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 10:2 FTS										
627.00 > 607.00	5.469	5.469	0.0	1.125	1517597	2.65			5505	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.480	5.480	0.0	1.326	1659639	2.70		108	349	
55 N-EtFOSA-M										
526.00 > 169.00	5.491	5.480	0.011	1.002	1781538	2.57			500	
59 PFDoS										
699.00 > 80.00	5.678	5.666	0.012	1.263	743426	2.35	Target=2.11		2256	
699.00 > 99.00	5.678	5.666	0.012	1.263	376289		1.98(1.06-3.17)		2151	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.712	5.712	0.0	1.046	6309080	2.40	Target=4.98		5185	
663.00 > 169.00	5.712	5.712	0.0	1.046	1268796		4.97(2.49-7.47)		2256	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.948	5.936	0.012	1.440	6007419	2.57		103	6758	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.948	5.936	0.012	1.000	849398	2.65	Target=0.96		687	
713.00 > 219.00	5.936	5.936	0.0	0.998	1041280		0.82(0.48-1.43)		3698	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.350	6.342	0.008	1.537	4179492	2.52		101	5455	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.350	6.342	0.008	1.000	3565750	2.42	Target=5.10		2209	
813.00 > 169.00	6.350	6.342	0.008	1.000	714522		4.99(2.55-7.64)		2824	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.742	6.742	0.0	1.062	2331724	2.60	Target=5.50		1403	
913.00 > 169.00	6.735	6.742	-0.007	1.061	405429		5.75(2.75-8.25)		1770	

Reagents:

LCPFCIC_FULL_00036 Amount Added: 1.00 Units: mL

Report Date: 04-Jun-2020 10:46:22 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0017.d

Injection Date: 03-Jun-2020 22:10:54 Instrument ID: A18

Lims ID: ICV

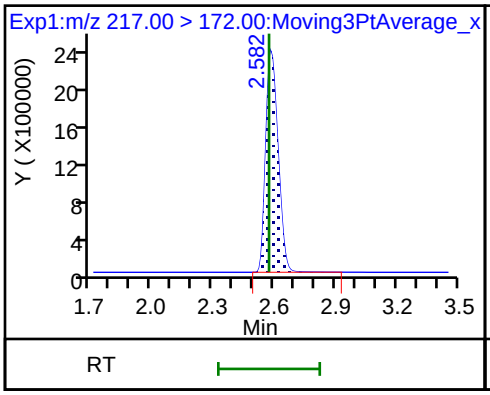
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 9 Worklist Smp#: 11

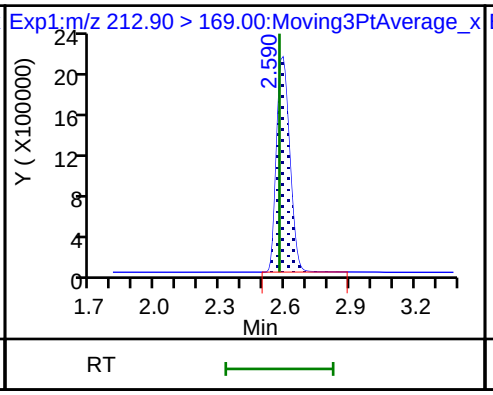
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

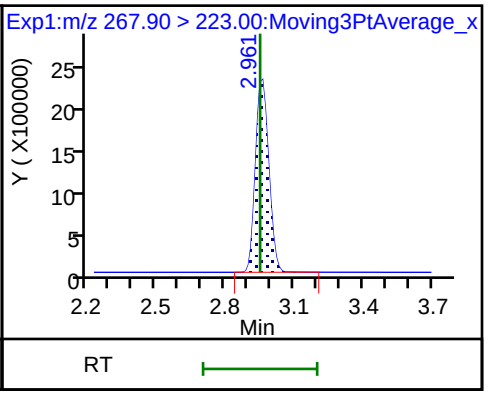
D 1 13C4 PFBA



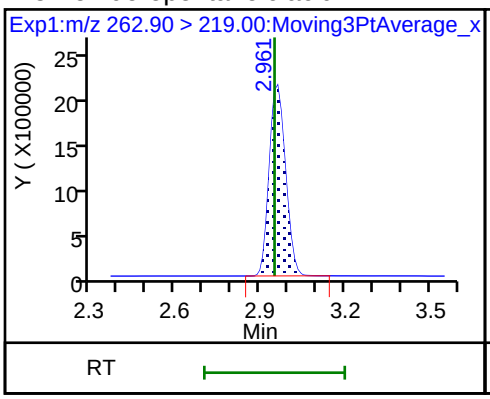
2 Perfluorobutanoic acid



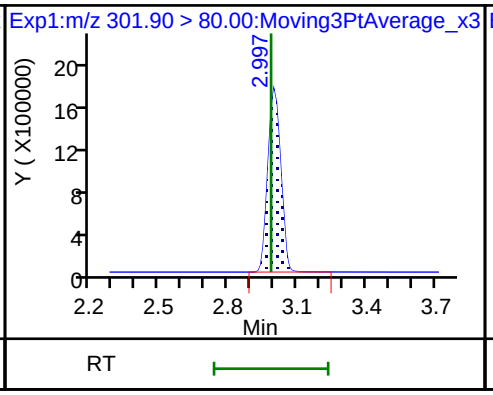
D 4 13C5 PFPeA



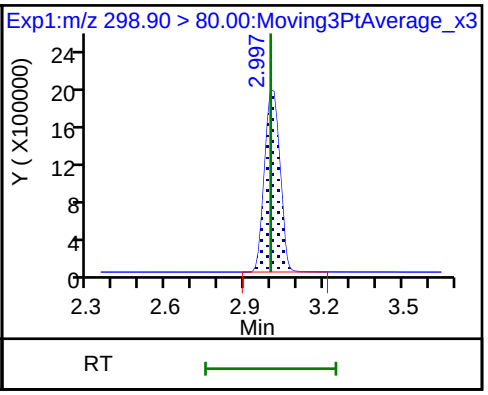
5 Perfluoropentanoic acid



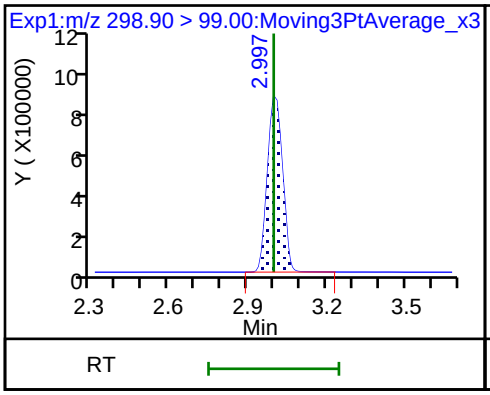
D 9 13C3 PFBS



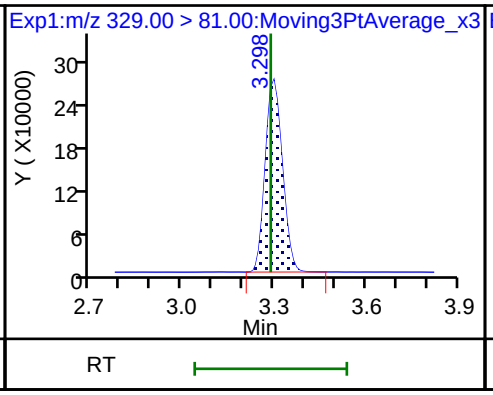
6 Perfluorobutanesulfonic acid



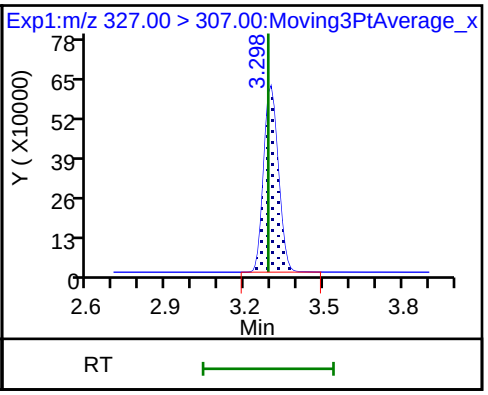
6 Perfluorobutanesulfonic acid



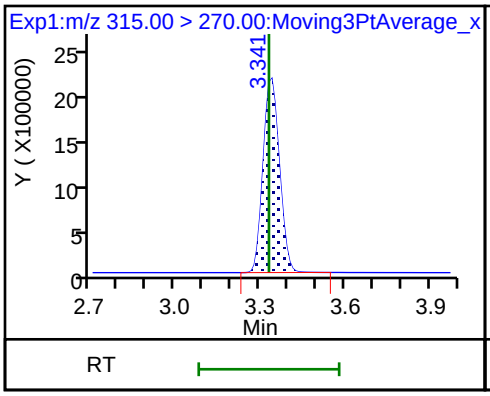
D 7 M2-4:2 FTS



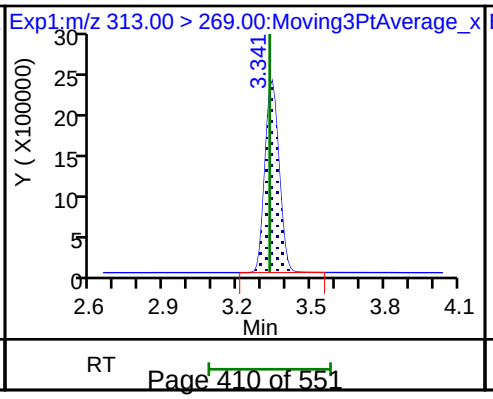
8 4:2 FTS



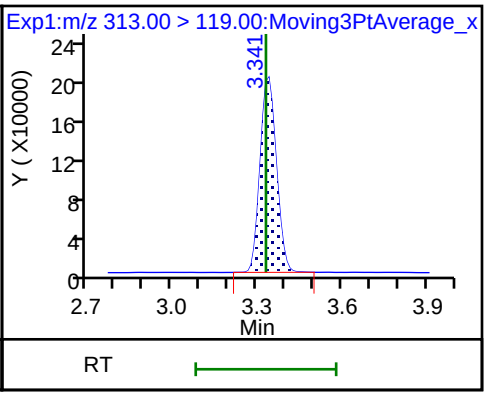
D 11 13C2 PFHxA



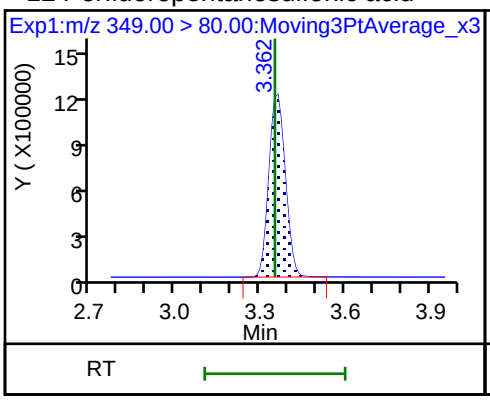
10 Perfluorohexanoic acid



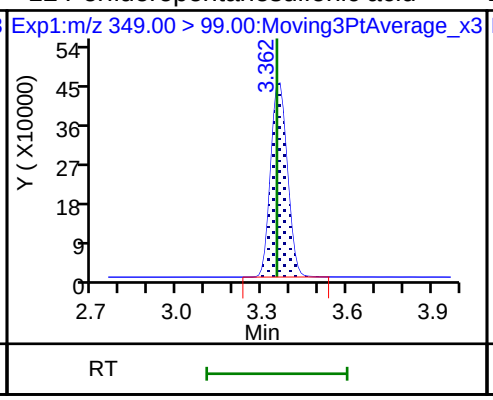
10 Perfluorohexanoic acid



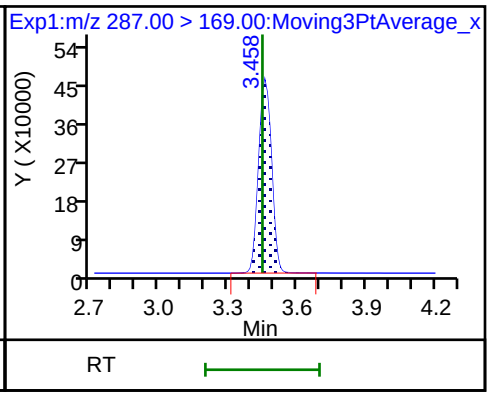
12 Perfluoropentanesulfonic acid



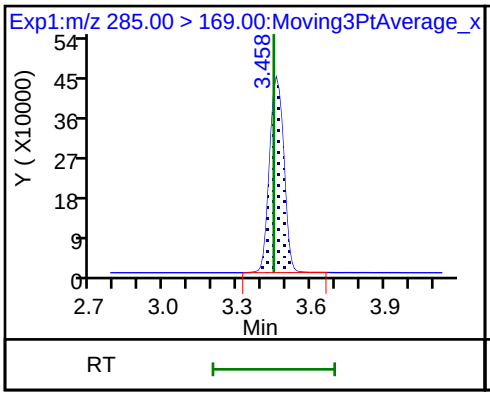
12 Perfluoropentanesulfonic acid



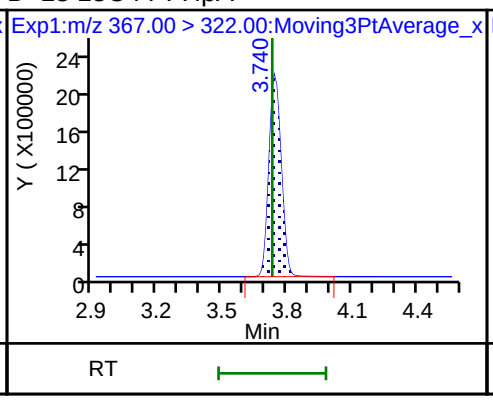
D 14 13C3 HFPO-DA



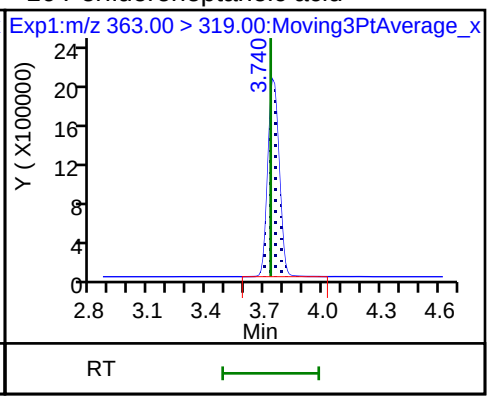
13 HPFO-DA



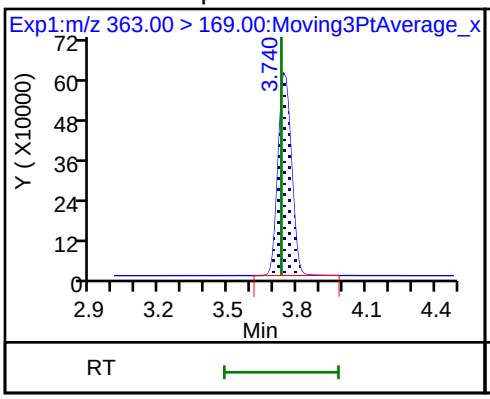
D 18 13C4 PFHpA



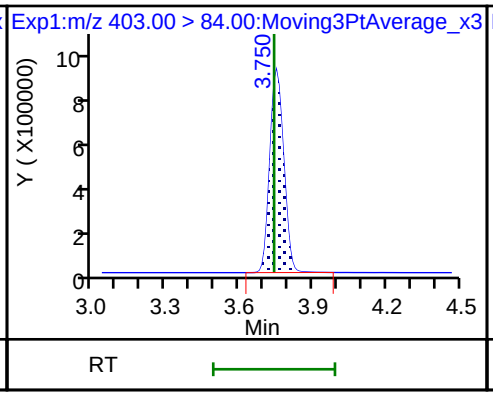
16 Perfluoroheptanoic acid



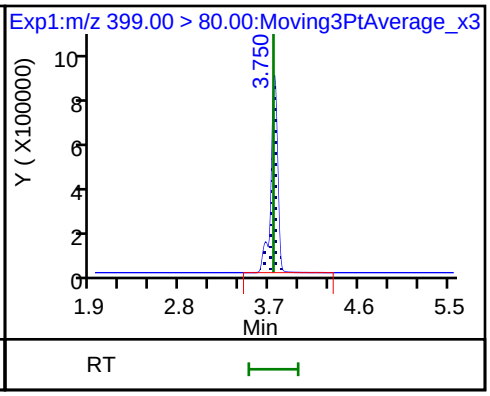
16 Perfluoroheptanoic acid



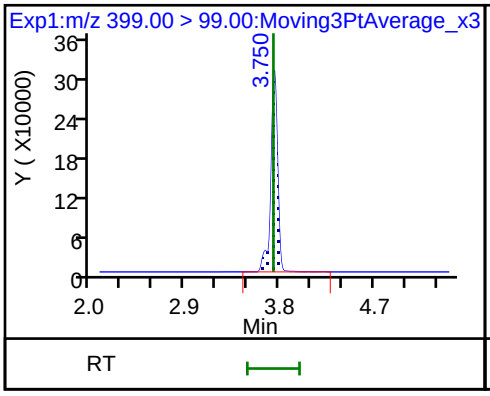
D 17 18O2 PFHxS



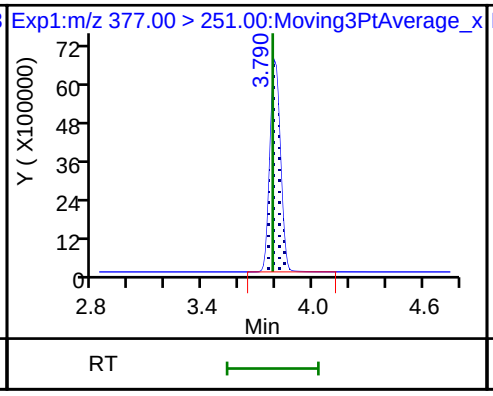
15 Perfluorohexanesulfonic acid



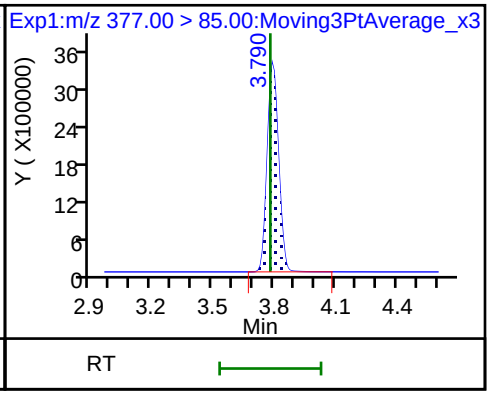
15 Perfluorohexanesulfonic acid



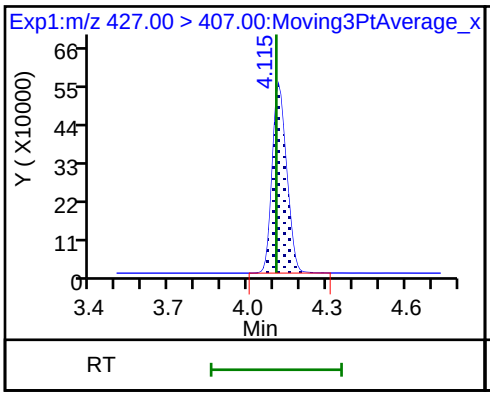
19 DONA



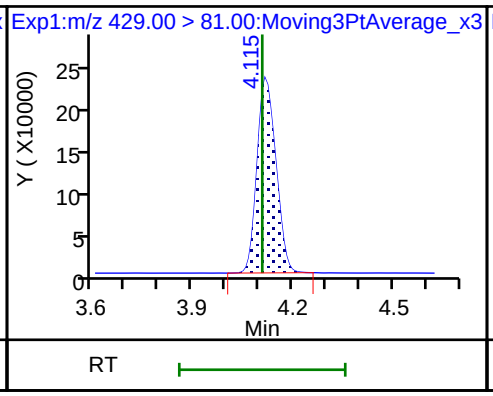
19 DONA



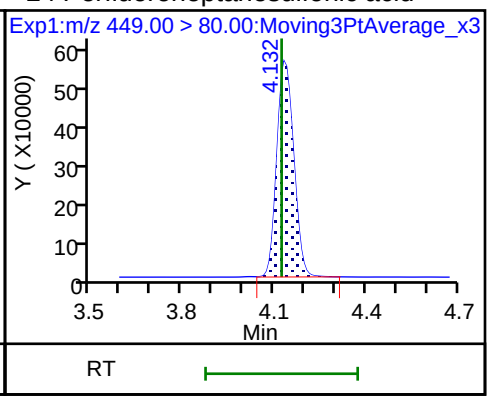
21 6:2 FTS



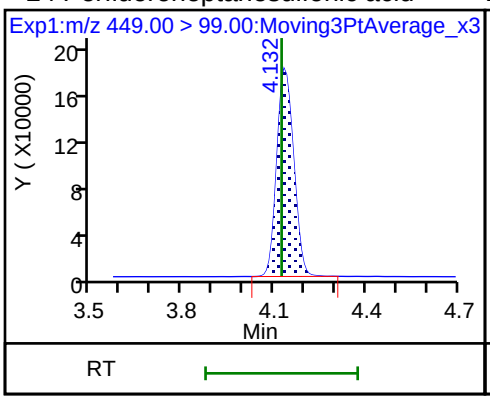
D 20 M2-6:2 FTS



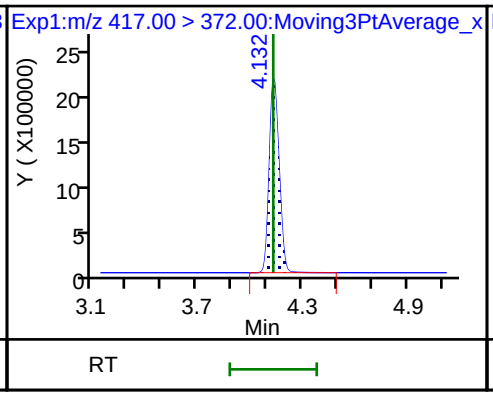
24 Perfluoroheptanesulfonic acid



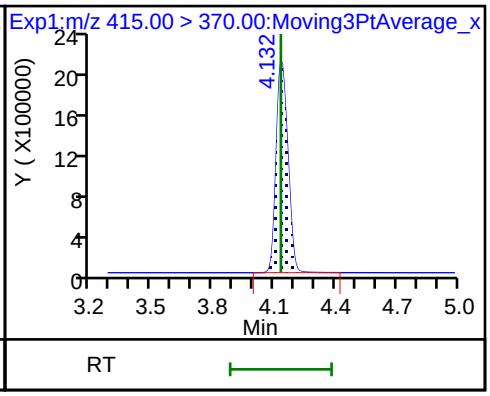
24 Perfluoroheptanesulfonic acid



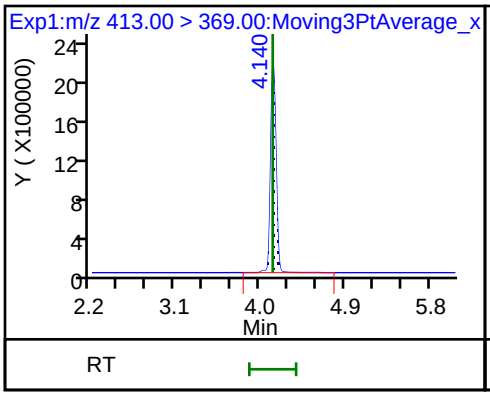
D 25 13C4 PFOA



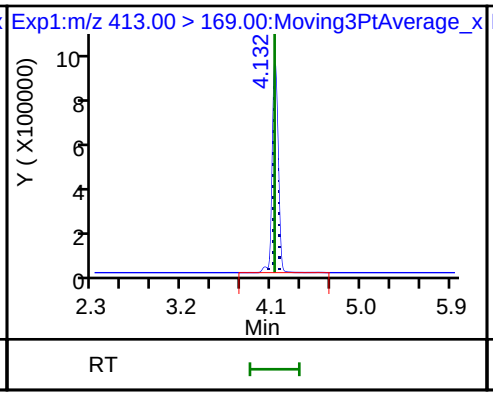
* 23 13C2 PFOA



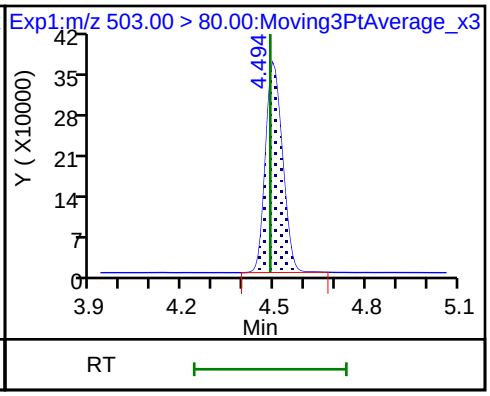
22 Perfluorooctanoic acid



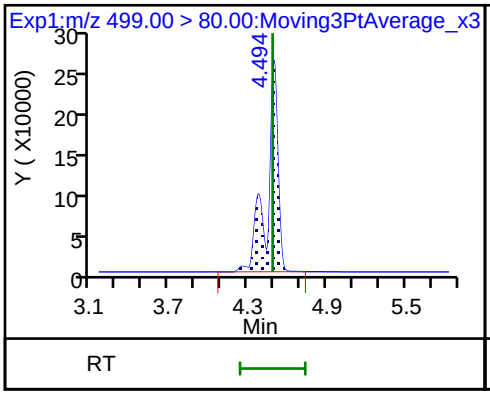
22 Perfluorooctanoic acid



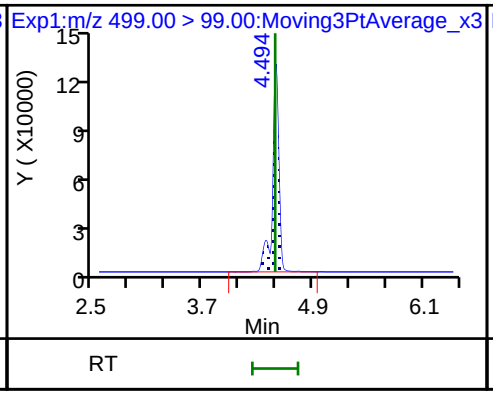
D 27 13C4 PFOS



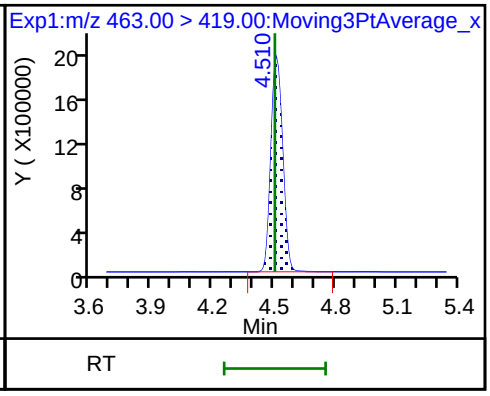
29 Perfluorooctanesulfonic acid



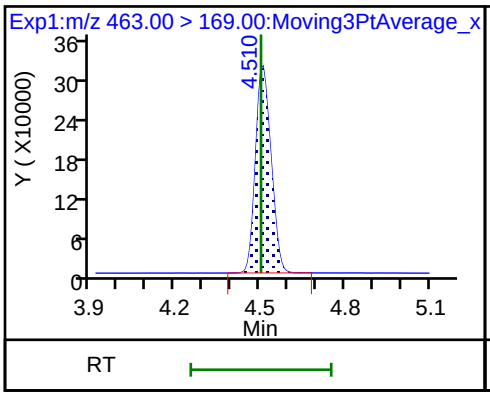
29 Perfluorooctanesulfonic acid



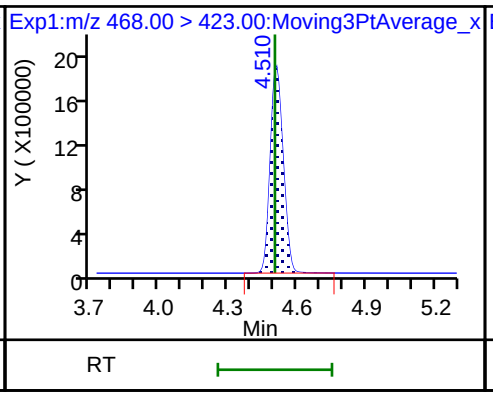
31 Perfluorononanoic acid



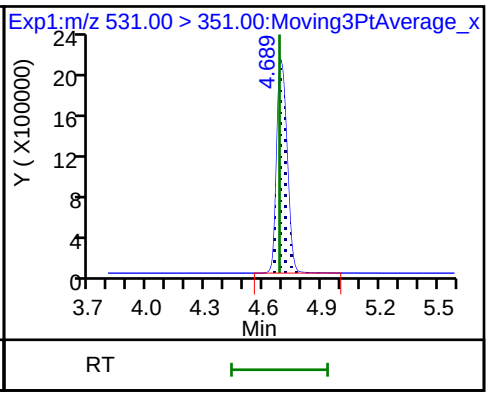
31 Perfluorononanoic acid



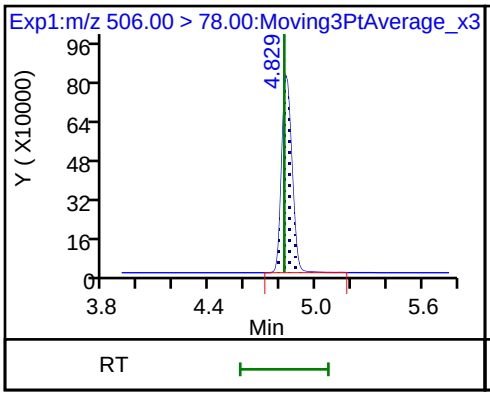
D 30 13C5 PFNA



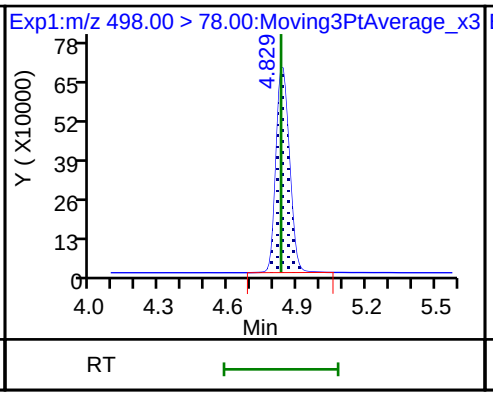
32 9ClFOS



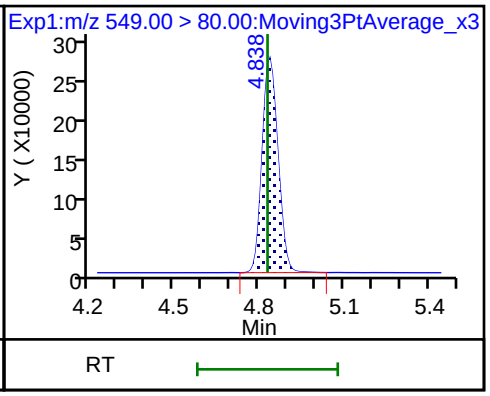
D 33 13C8 FOSA



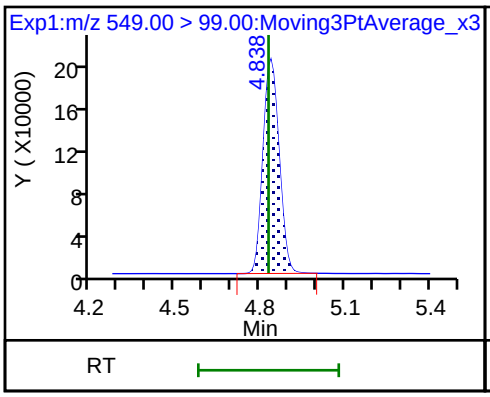
34 Perfluorooctanesulfonamide



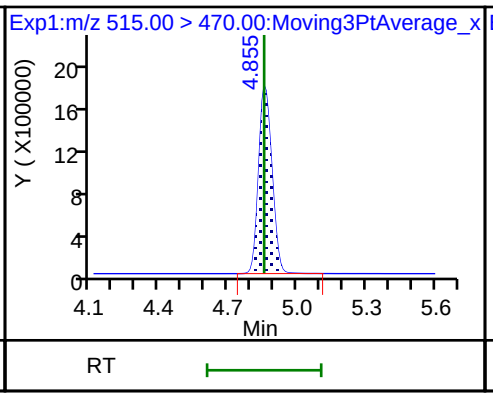
35 Perfluorononanesulfonic acid



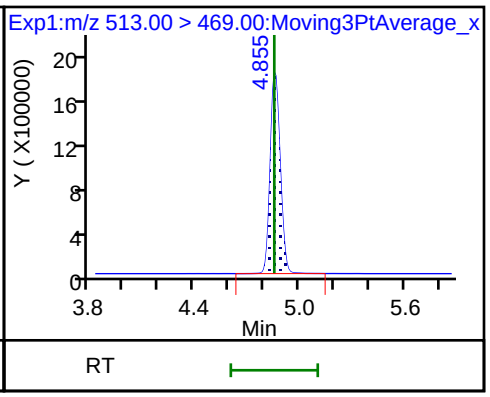
35 Perfluorononanesulfonic acid



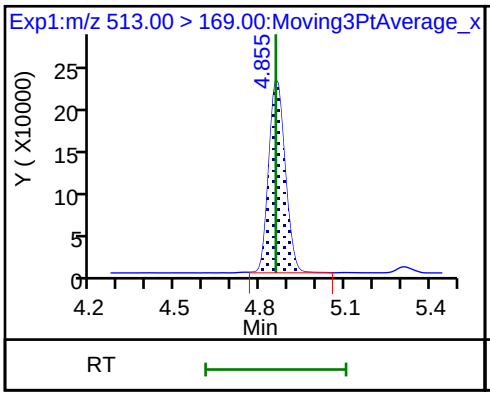
D 39 13C2 PFDA



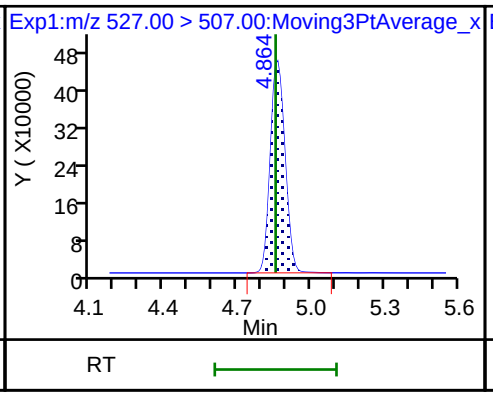
37 Perfluorodecanoic acid



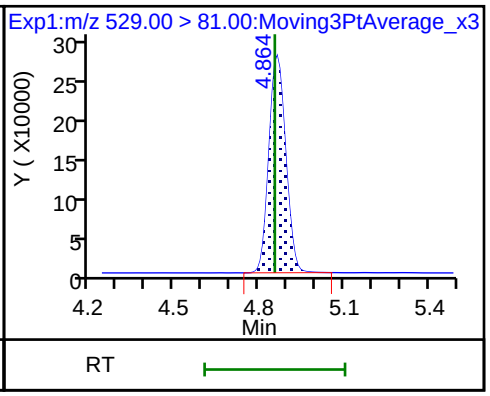
37 Perfluorodecanoic acid



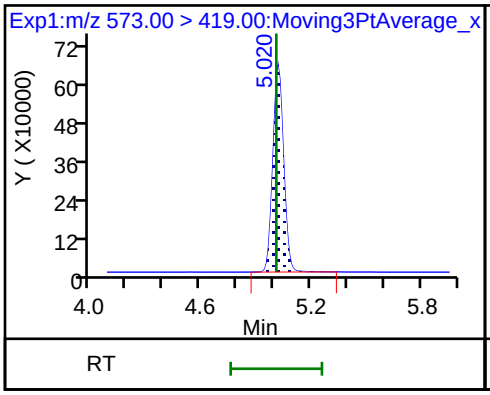
36 8:2 FTS



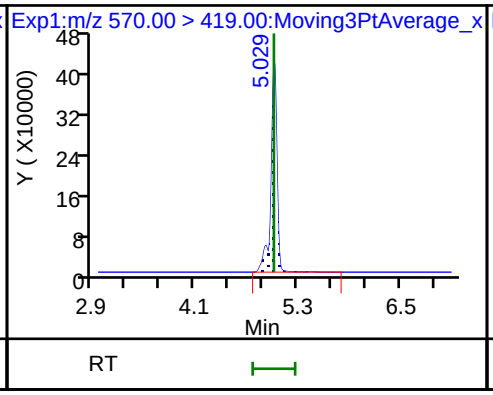
D 38 M2-8:2 FTS



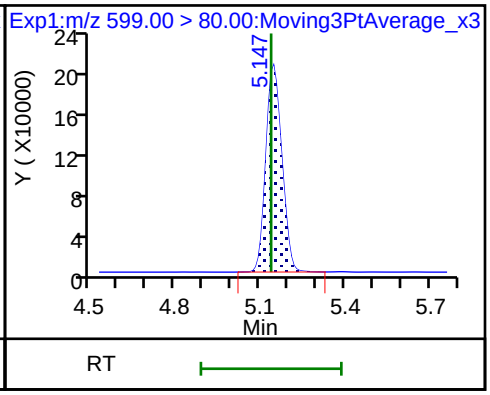
D 40 d3-NMeFOSAA



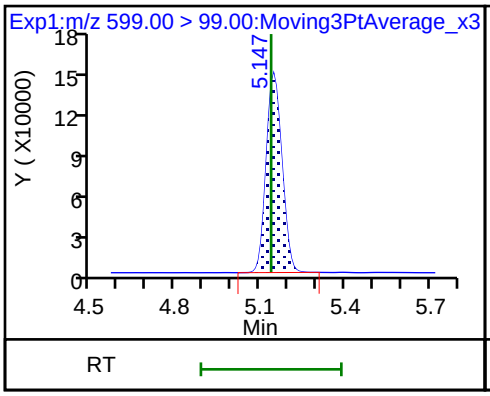
41 NMeFOSAA



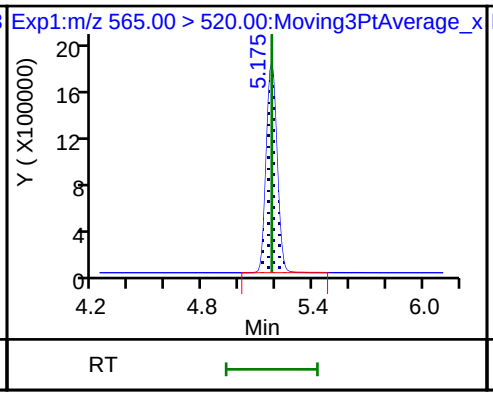
42 Perfluorodecanesulfonic acid



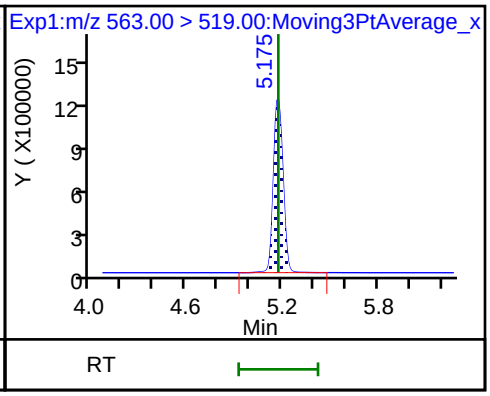
42 Perfluorodecanesulfonic acid



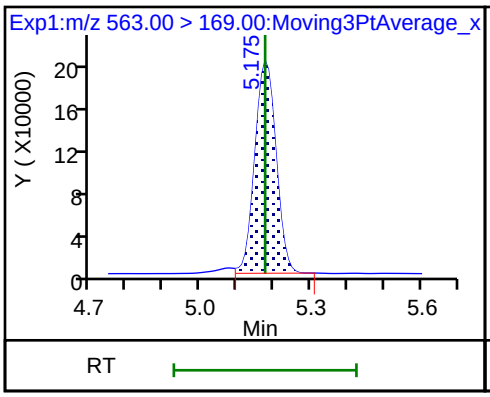
D 43 13C2 PFUnA



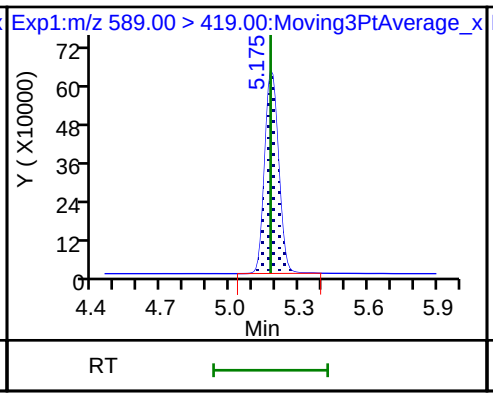
45 Perfluoroundecanoic acid



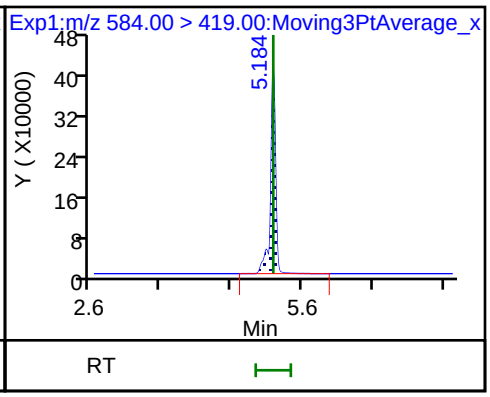
45 Perfluoroundecanoic acid



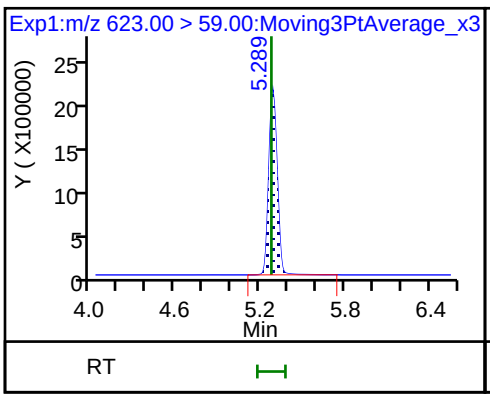
D 44 d5-NEtFOSAA



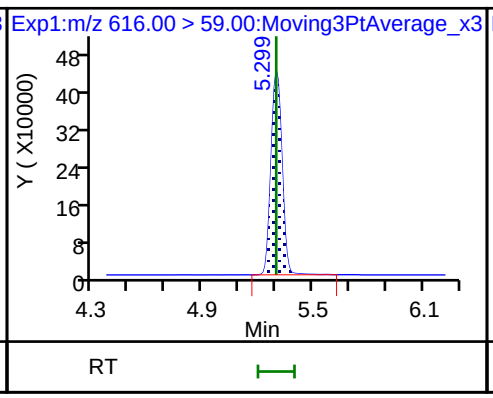
46 NEtFOSA



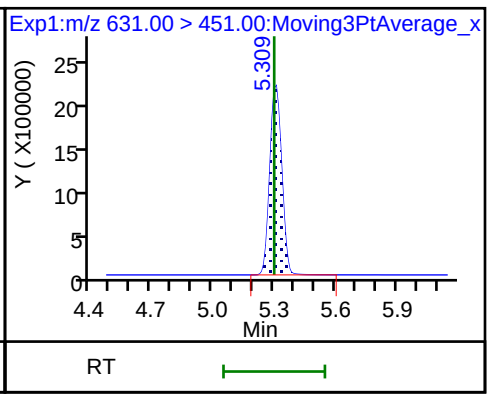
D 47 d7-N-MeFOSE-M



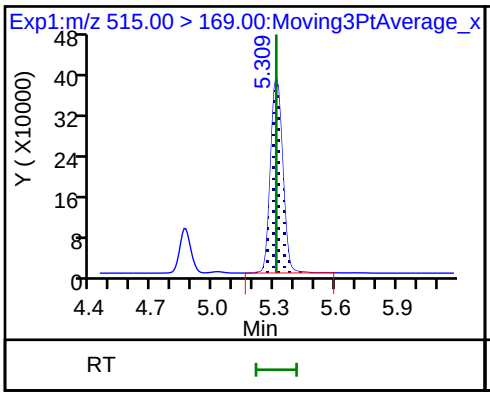
48 N-MeFOSE-M



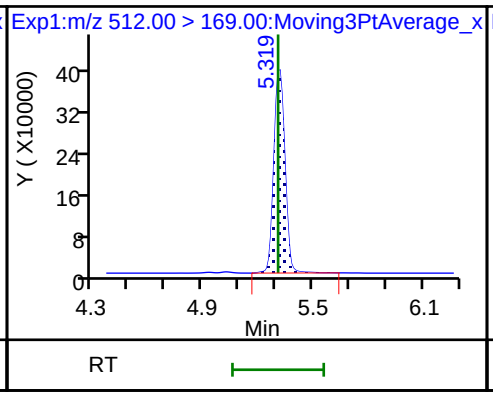
51 11ClFOS



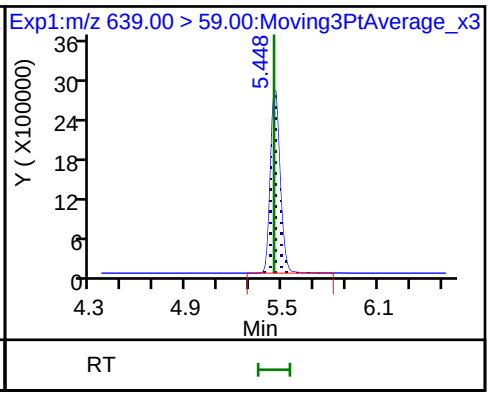
D 49 d-N-MeFOSA-M



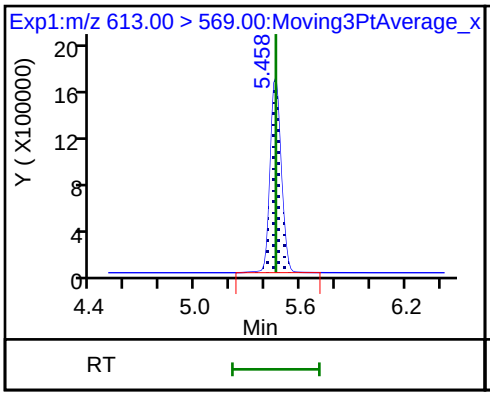
50 NMeFOSA



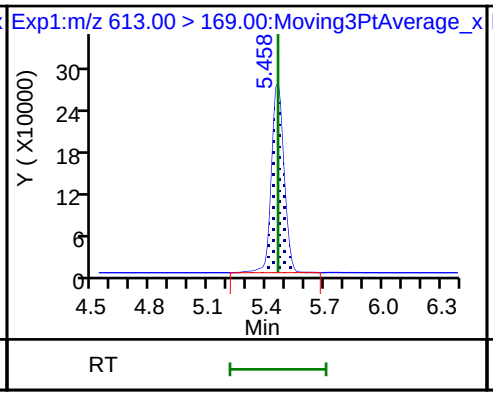
D 52 d9-N-EtFOSE-M



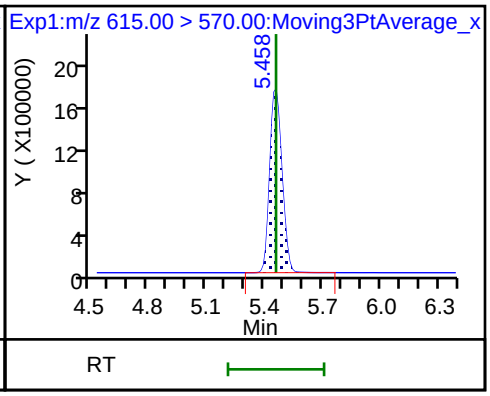
57 Perfluorododecanoic acid



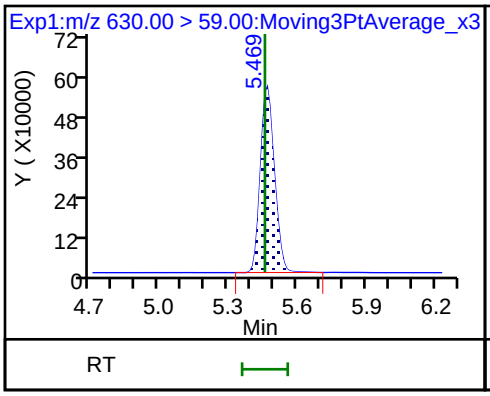
57 Perfluorododecanoic acid



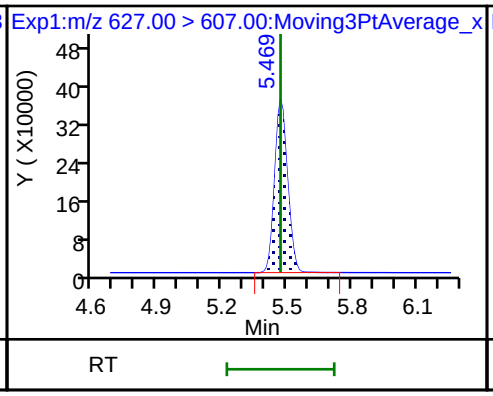
D 56 13C2 PFDoA



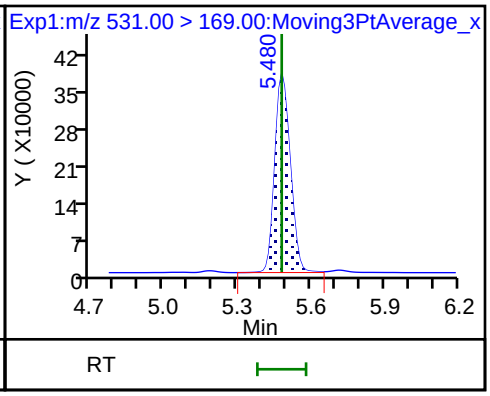
53 N-EtFOSE-M



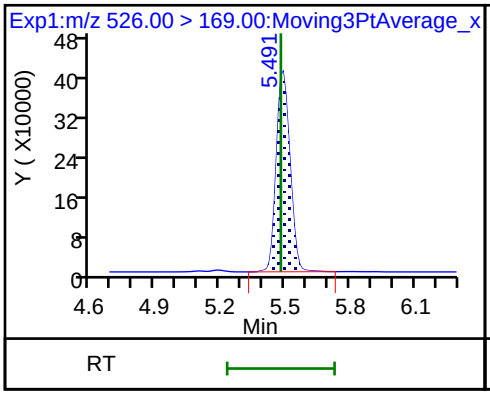
58 10:2 FTS



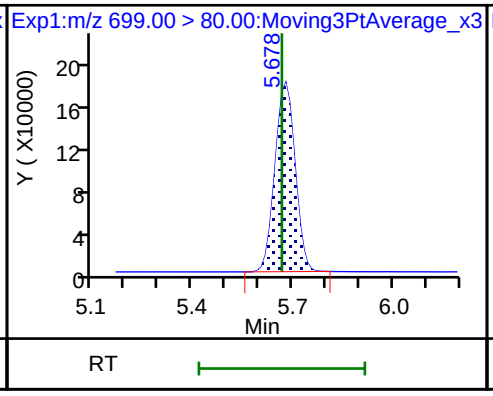
D 54 d-N-EtFOSA-M



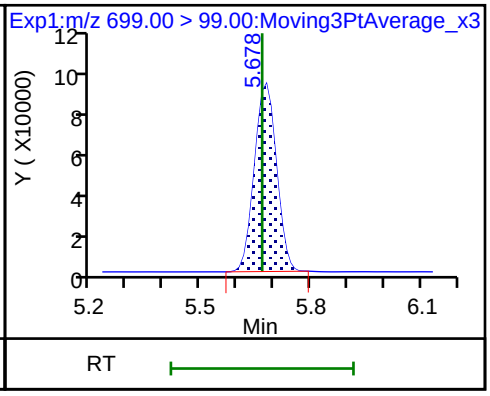
55 N-EtFOSA-M



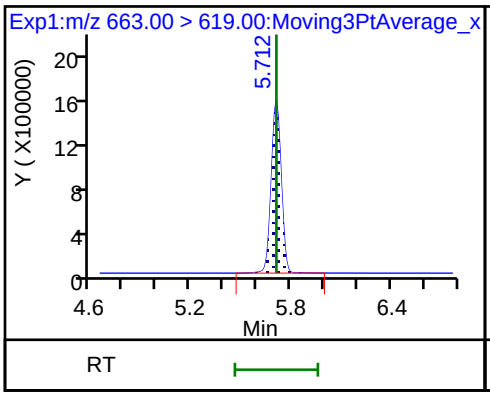
59 PFDoS



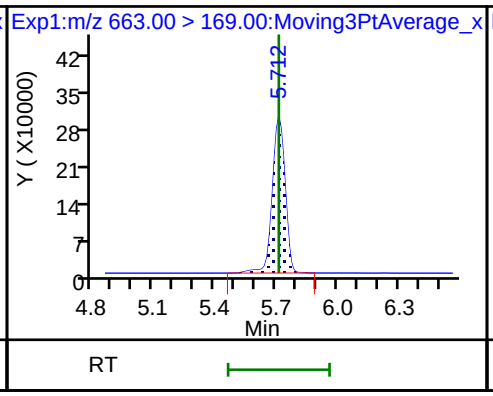
59 PFDoS



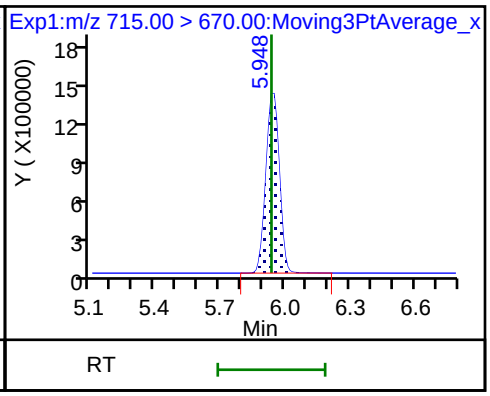
60 Perfluorotridecanoic acid



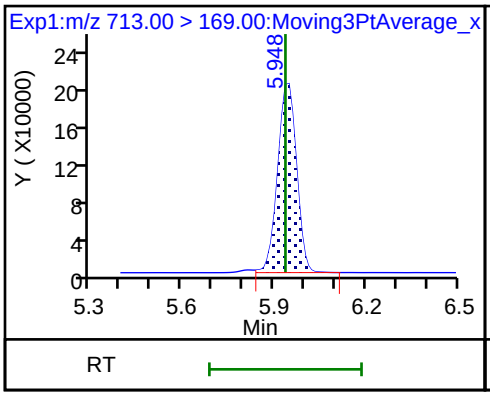
60 Perfluorotridecanoic acid



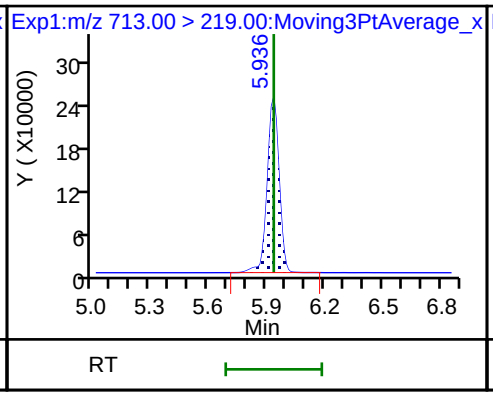
D 61 13C2 PFTeDA



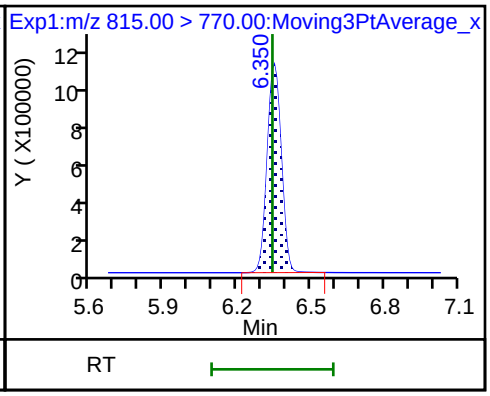
62 Perfluorotetradecanoic acid



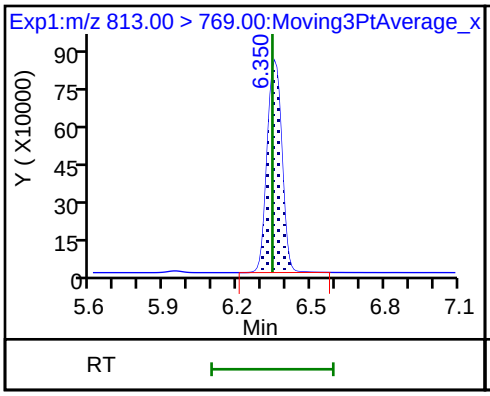
62 Perfluorotetradecanoic acid



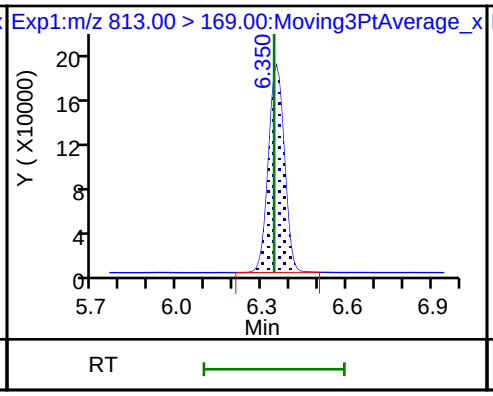
D 64 13C2 PFHxDA



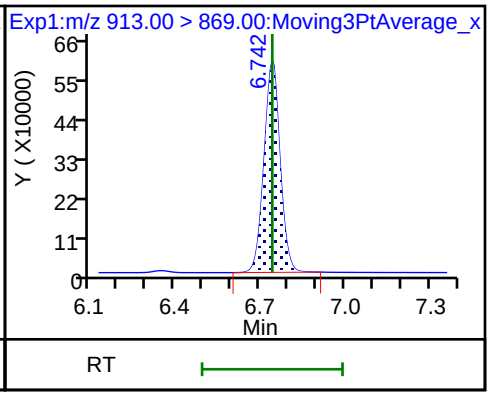
63 Perfluorohexadecanoic acid



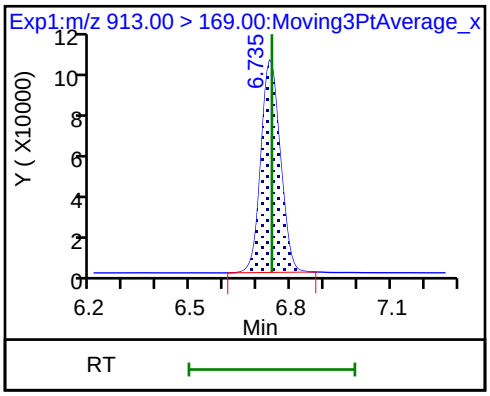
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCVL 320-383436/3 Calibration Date: 06/04/2020 09:29

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.04_A18_PFC_A_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8517	0.8486		0.0498	0.0500	-0.4	50.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9630	1.095		0.0569	0.0500	13.7	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9751	0.9849		0.0446	0.0442	1.0	50.0
4:2 FTS	AveID	2.096	2.355		0.525	0.467	12.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9300	0.9670		0.0520	0.0500	4.0	50.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7168	0.7156		0.0468	0.0469	-0.2	50.0
HFPO-DA (GenX)	AveID	0.9456	0.8959		0.0474	0.0500	-5.3	50.0
Perfluoroheptanoic acid	AveID	0.9856	1.001		0.0508	0.0500	1.6	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.151	1.201		0.0475	0.0455	4.3	50.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	15.91	15.43		0.0457	0.0471	-3.0	50.0
6:2 FTS	AveID	2.003	2.058		0.487	0.474	2.8	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.514	1.488		0.0468	0.0476	-1.7	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.013	1.127		0.0556	0.0500	11.3	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.009	1.051		0.0483	0.0464	4.2	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9614	0.8931		0.0464	0.0500	-7.1	50.0
F-53B Major	AveID	4.948	4.707		0.0443	0.0466	-4.9	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7814	0.7995		0.0491	0.0480	2.3	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9186	0.9323		0.0507	0.0500	1.5	50.0
8:2 FTS	AveID	1.536	1.581		0.493	0.479	3.0	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.8950	0.8797		0.0491	0.0500	-1.7	50.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7080	0.7155		0.505	0.500	1.0	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5780	0.5816		0.0485	0.0482	0.6	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7407	0.7200		0.0486	0.0500	-2.8	50.0
NEtFOSAA	AveID	0.7021	0.6713		0.478	0.500	-4.4	50.0
F-53B Minor	AveID	5.427	4.853		0.0421	0.0471	-10.6	50.0
NMeFOSE	AveID	0.9823	1.114		0.0567	0.0500	13.4	50.0
NMeFOSA	AveID	0.9235	0.9770			0.0500	5.8	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9313	0.998		0.0536	0.0500	7.1	50.0
10:2 FTS	AveID	1.215	0.9536		0.0378	0.0482	-21.5	50.0
NEtFOSE	AveID	1.004	0.9456		0.0471	0.0500	-5.8	50.0
NEtFOSA	AveID	1.045	1.064			0.0500	1.8	50.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.5352	0.4686		0.0424	0.0484	-12.4	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8742	0.8333		0.0477	0.0500	-4.7	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCVL 320-383436/3 Calibration Date: 06/04/2020 09:29

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.04_A18_PFC_A_005.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1331	0.1280		0.0481	0.0500	-3.9	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.380		0.0598	0.0500	19.6	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5363	0.5971		0.0557	0.0500	11.3	50.0
13C4 PFBA	Ave	1.247	1.185		2.37	2.50	-5.0	50.0
13C5 PFPeA	Ave	1.118	1.062		2.37	2.50	-5.0	50.0
13C3 PFBS	Ave	0.8747	0.8640		2.30	2.33	-1.2	50.0
M2-4:2 FTS	Ave	0.1422	0.1349		2.21	2.34	-5.1	50.0
13C2 PFHxA	Ave	1.114	1.105		2.48	2.50	-0.7	50.0
13C3 HFPO-DA	Ave	0.2176	0.2024		2.33	2.50	-7.0	50.0
13C4 PFHpA	Ave	0.9885	0.9752		2.47	2.50	-1.3	50.0
18O2 PFHxS	Ave	0.4173	0.4188		2.37	2.37	0.3	50.0
M2-6:2 FTS	Ave	0.1146	0.1134		2.35	2.38	-1.0	50.0
13C4 PFOA	Ave	0.9904	1.002		2.53	2.50	1.2	50.0
13C4 PFOS	Ave	0.1771	0.1740		2.35	2.39	-1.8	50.0
13C5 PFNA	Ave	0.8069	0.7993		2.48	2.50	-0.9	50.0
13C8 FOSA	Ave	0.3929	0.3978		2.53	2.50	1.2	50.0
13C2 PFDA	Ave	0.8716	0.8413		2.41	2.50	-3.5	50.0
M2-8:2 FTS	Ave	0.1448	0.1436		2.38	2.40	-0.8	50.0
d3-NMeFOSAA	Ave	0.3238	0.3044		2.35	2.50	-6.0	50.0
13C2 PFUnA	Ave	0.8155	0.8034		2.46	2.50	-1.5	50.0
d5-NEtFOSAA	Ave	0.3303	0.3301		2.50	2.50	-0.0	50.0
d7-N-MeFOSE-M	Ave	0.2336	0.2124		11.4	12.5	-9.1	50.0
d-N-MeFOSA-M	Ave	0.1846	0.1785		2.42	2.50	-3.3	50.0
13C2 PFDoA	Ave	0.8615	0.8415		2.44	2.50	-2.3	50.0
d9-N-EtFOSE-M	Ave	0.2653	0.2570		12.1	12.5	-3.1	50.0
d-N-EtFOSA-M	Ave	0.1896	0.1802		2.38	2.50	-5.0	50.0
13C2 PFTeDA	Ave	0.7207	0.6860		2.38	2.50	-4.8	50.0
13C2 PFHxDA	Ave	0.5104	0.4165		2.04	2.50	-18.4	50.0
13C8 PFOA	Ave	0.8173	0.8360		2.50	2.45	2.3	50.0
13C8 PFOS	Ave	0.0612	0.0625		2.44	2.39	2.0	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_005.d
Lims ID: CCVL
Client ID:
Sample Type: CCVL
Inject. Date: 04-Jun-2020 09:29:46 ALS Bottle#: 51 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCVL (19)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 08:13:12 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: nadonp Date: 05-Jun-2020 08:13:12
Ratio Calibration: Average of Initial Calibration

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	2.573	2.565	0.008	0.627	10388223	2.37		95.0	7303	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.573	2.573	0.0	1.000	176309	0.0498		99.6	51.9	
D 4 13C5 PFPeA										
267.90 > 223.00	2.939	2.929	0.010	0.716	9313186	2.37		95.0	6805	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.939	2.940	-0.001	1.000	204005	0.0569		114	65.8	
D 9 13C3 PFBS										
301.90 > 80.00	2.972	2.973	-0.001	0.724	7046079	2.30		98.8	6893	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.984	2.973	0.011	1.004	131925	0.0446	Target=2.25	101	199	
298.90 > 99.00	2.972	2.973	-0.001	1.000	58796		2.24(1.13-3.38)		56.9	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.267	3.268	-0.001	0.796	1104442	2.21		94.9	1632	
8 4:2 FTS										
327.00 > 307.00	3.267	3.268	-0.001	1.000	520194	0.5246		112	3968	
D 11 13C2 PFHxA										
315.00 > 270.00	3.308	3.309	-0.001	0.806	9693799	2.48		99.3	6895	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.308	3.309	-0.001	1.000	187468	0.0520	Target=11.49	104	84.0	
313.00 > 119.00	3.308	3.309	-0.001	1.000	15983		11.73(5.74-17.23)		23.8	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.330	3.330	0.0	1.120	101704	0.0468	Target=2.74	99.8	153	
349.00 > 99.00	3.330	3.330	0.0	1.120	36602		2.78(1.37-4.12)		136	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.425	3.426	-0.001	0.834	1774635	2.33		93.0	2561	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.425	3.426	-0.001	1.000	31797	0.0474		94.7	168	
D 18 13C4 PFHpA										
367.00 > 322.00	3.710	3.711	-0.001	0.904	8551148	2.47		98.7	9717	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.710	3.711	-0.001	1.000	171256	0.0508	Target=3.25	102	66.9	
363.00 > 169.00	3.710	3.711	-0.001	1.000	51884		3.30(1.62-4.87)		171	
D 17 18O2 PFHxS										
403.00 > 84.00	3.720	3.721	-0.001	0.906	3474054	2.37		100	5386	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.720	3.721	-0.001	1.000	80256	0.0475	Target=2.90	104	257	
399.00 > 99.00	3.720	3.721	-0.001	1.000	31555		2.54(1.45-4.35)		65.6	
19 DONA										
377.00 > 251.00	3.759	3.760	-0.001	0.843	443742	0.0457	Target=2.01	97.0	968	
377.00 > 85.00	3.759	3.760	-0.001	0.843	218956		2.03(1.00-3.01)		497	
21 6:2 FTS										
427.00 > 407.00	4.082	4.082	0.0	1.000	388065	0.4871		103	1607	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.082	4.082	0.0	0.994	944856	2.35		99.0	2268	
$ 26 13C8 PFOA										
421.00 > 376.00	4.098	4.090	0.008	0.998	7176989	2.50		102	8037	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.098	4.099	-0.001	0.919	43235	0.0468	Target=3.25	98.3	225	
449.00 > 99.00	4.106	4.099	0.007	0.920	14713		2.94(1.63-4.88)		75.2	
D 25 13C4 PFOA										
417.00 > 372.00	4.106	4.099	0.007	1.000	8789478	2.53		101	9110	
* 23 13C2 PFOA										
415.00 > 370.00	4.106	4.099	0.007		8768866	2.50			9317	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.106	4.099	0.007	1.000	198070	0.0556	Target=2.35	111	80.5	M
413.00 > 169.00	4.098	4.099	-0.001	0.998	81835		2.42(1.18-3.53)		135	
$ 28 13C8 PFOS										
507.00 > 99.00	4.461	4.454	0.007	1.087	523730	2.44		102	2403	
D 27 13C4 PFOS										
503.00 > 80.00	4.461	4.462	-0.001	1.087	1458858	2.35		98.2	2308	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.461	4.462	-0.001	1.000	29757	0.0483	Target=2.41	104	78.7	M
499.00 > 99.00	4.454	4.462	-0.008	0.998	12388		2.40(1.21-3.62)		52.3	M
31 Perfluorononanoic acid										
463.00 > 419.00	4.477	4.470	0.007	1.000	125182	0.0464	Target=6.74	92.9	50.2	
463.00 > 169.00	4.469	4.470	-0.001	0.998	18606		6.73(3.37-10.11)		51.1	
D 30 13C5 PFNA										
468.00 > 423.00	4.477	4.470	0.007	1.090	7008521	2.48		99.1	4544	
32 9ClFOS										
531.00 > 351.00	4.657	4.652	0.005	1.044	133902	0.0443		95.1	357	
D 33 13C8 FOSA										
506.00 > 78.00	4.800	4.803	-0.003	1.169	3488199	2.53		101	4470	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.809	4.803	0.006	1.002	65044	0.0507		101	658	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.809	4.803	0.006	1.078	23426	0.0491	Target=1.37	102	119	
549.00 > 99.00	4.800	4.803	-0.003	1.076	14119		1.66(0.69-2.06)		82.9	
D 39 13C2 PFDA										
515.00 > 470.00	4.826	4.820	0.006	1.175	7377292	2.41		96.5	7823	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.826	4.820	0.006	1.000	129801	0.0491	Target=8.07	98.3	157	
513.00 > 169.00	4.817	4.820	-0.003	0.998	15110		8.59(4.04-12.11)		78.8	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.826	4.820	0.006	1.175	1206397	2.38		99.2	2180	
36 8:2 FTS										
527.00 > 507.00	4.826	4.828	-0.002	1.000	381582	0.4932		103	1607	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.986	4.978	0.008	1.214	2669349	2.35		94.0	2184	
41 NMeFOSAA										M
570.00 > 419.00	4.997	4.989	0.008	1.002	381961	0.5052		101	386	M
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.119	5.111	0.008	1.147	17111	0.0485	Target=1.31	101	208	
599.00 > 99.00	5.110	5.111	-0.001	1.145	13399		1.28(0.65-1.96)		77.4	
D 43 13C2 PFUnA										
565.00 > 520.00	5.137	5.130	0.007	1.251	7044884	2.46		98.5	6876	
45 Perfluoroundecanoic acid										M
563.00 > 519.00	5.137	5.139	-0.002	1.000	101441	0.0486	Target=6.70	97.2	164	M
563.00 > 169.00	5.137	5.139	-0.002	1.000	17953		5.65(3.35-10.05)		108	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.146	5.139	0.007	1.253	2894363	2.50		99.9	2792	
46 NEtFOSA										
584.00 > 419.00	5.146	5.148	-0.002	1.000	388566	0.4780		95.6	812	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.267	5.258	0.009	1.283	9313530	11.4		90.9	4404	
48 N-MeFOSE-M										
616.00 > 59.00	5.277	5.268	0.009	1.002	41485	0.0567		113	133	
51 11ClFOS										
631.00 > 451.00	5.277	5.268	0.009	1.183	139528	0.0421		89.4	664	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.287	5.279	0.008	1.288	1565504	2.42		96.7	37.6	
50 NMeFOSA										
512.00 > 169.00	5.287	5.289	-0.002	1.000	30589	0.0529		106	73.6	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.425	5.426	-0.001	1.000	147215	0.0536	Target=6.20	107	102	
613.00 > 169.00	5.425	5.426	-0.001	1.000	23233		6.34(3.10-9.30)		130	
D 56 13C2 PFDoA										
615.00 > 570.00	5.425	5.426	-0.001	1.321	7379009	2.44		97.7	6706	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.435	5.437	-0.002	1.324	11269077	12.1		96.9	13103	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 10:2 FTS										
627.00 > 607.00	5.446	5.437	0.009	1.129	23153	0.0378		78.5	279	
53 N-EtFOSE-M										
630.00 > 59.00	5.446	5.448	-0.002	1.002	42624	0.0471		94.2	191	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.457	5.458	-0.001	1.329	1580066	2.38		95.0	443	
55 N-EtFOSA-M										
526.00 > 169.00	5.468	5.458	0.010	1.002	33630	0.0509		102	54.8	
59 PFDoS										
699.00 > 80.00	5.640	5.642	-0.002	1.264	13845	0.0424	Target=2.11	87.6	131	
699.00 > 99.00	5.640	5.642	-0.002	1.264	6493		2.13(1.06-3.17)		80.3	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.677	5.678	-0.001	1.047	122971	0.0477	Target=4.98	95.3	284	
663.00 > 169.00	5.677	5.678	-0.001	1.047	27585		4.46(2.49-7.47)		170	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.913	5.901	0.012	1.440	6015030	2.38		95.2	6636	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.913	5.913	0.0	1.000	15395	0.0481	Target=0.96	96.1	71.4	
713.00 > 219.00	5.901	5.913	-0.012	0.998	17363		0.89(0.48-1.43)		242	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.315	6.315	0.0	1.538	3651935	2.04		81.6	4741	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.315	6.315	0.0	1.000	100789	0.0598	Target=5.10	120	106	
813.00 > 169.00	6.315	6.315	0.0	1.000	19571		5.15(2.55-7.64)		295	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.702	6.696	0.006	1.061	43611	0.0557	Target=5.50	111	62.9	
913.00 > 169.00	6.695	6.696	-0.001	1.060	7191		6.06(2.75-8.25)		147	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

LCPFC_LLCCVL_00019 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 08:13:13 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_005.d

Injection Date: 04-Jun-2020 09:29:46 Instrument ID: A18

Lims ID: CCVL

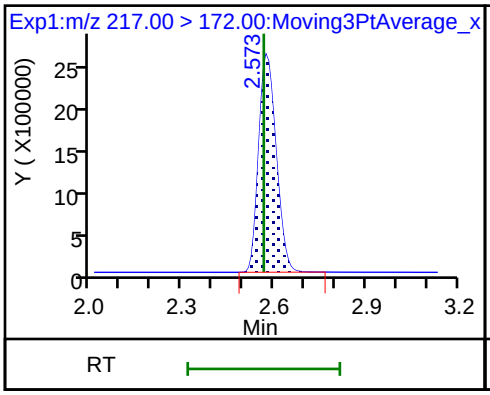
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 3

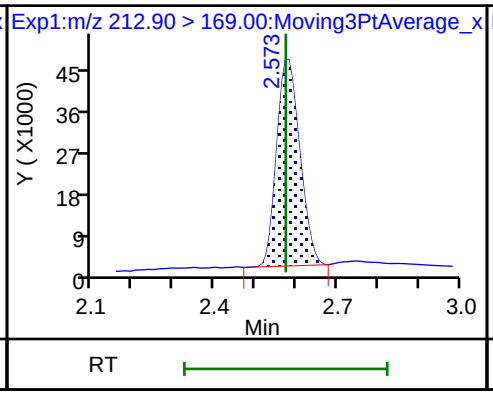
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

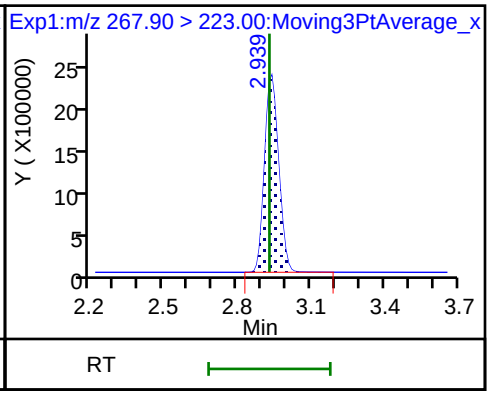
D 1 13C4 PFBA



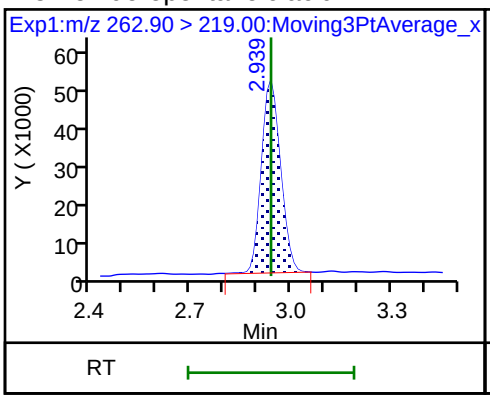
2 Perfluorobutanoic acid



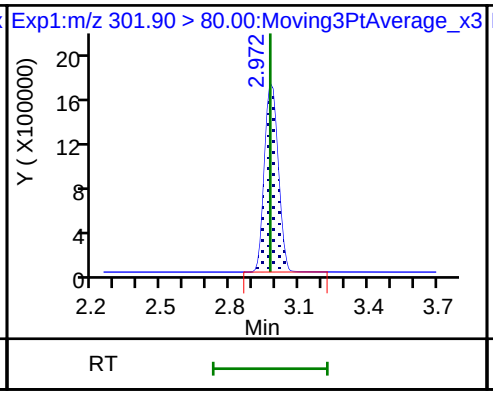
D 4 13C5 PFPeA



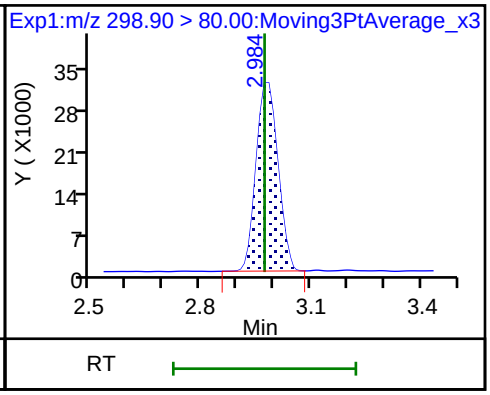
5 Perfluoropentanoic acid



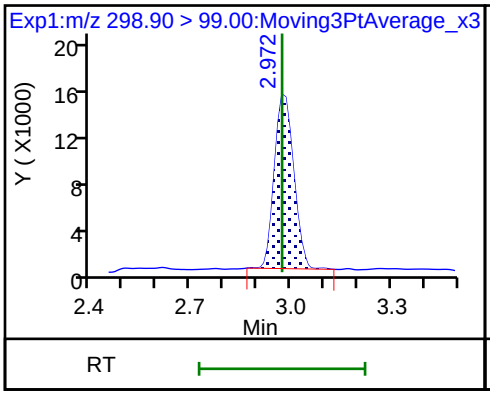
D 9 13C3 PFBS



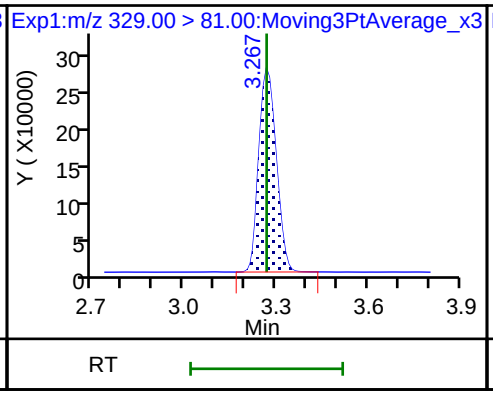
6 Perfluorobutanesulfonic acid



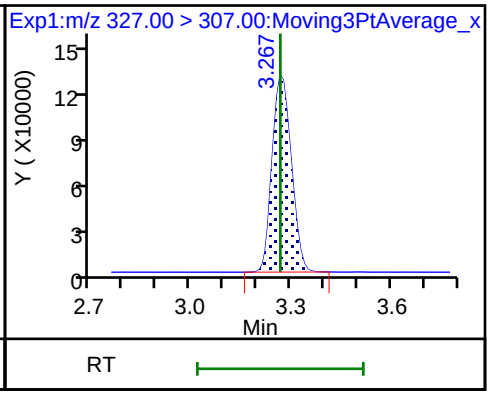
6 Perfluorobutanesulfonic acid



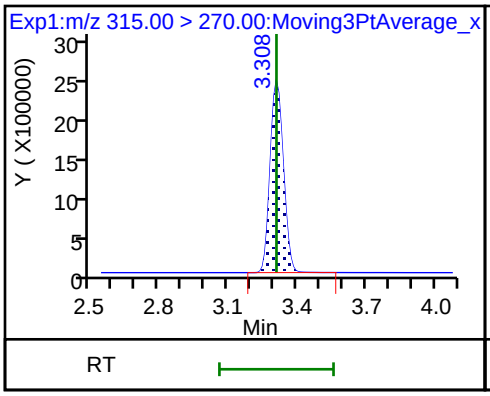
D 7 M2-4:2 FTS



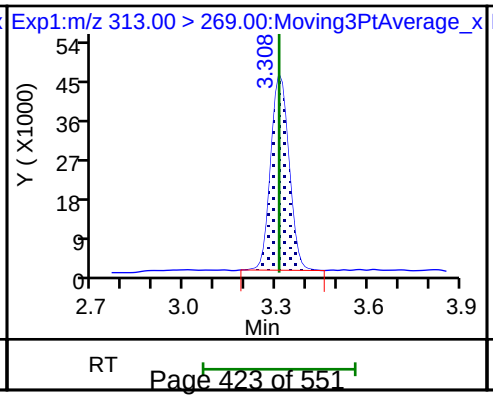
8 4:2 FTS



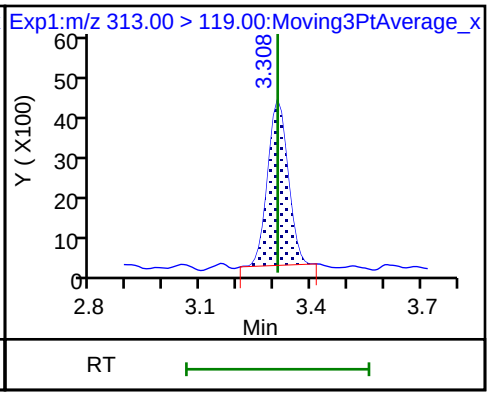
D 11 13C2 PFHxA



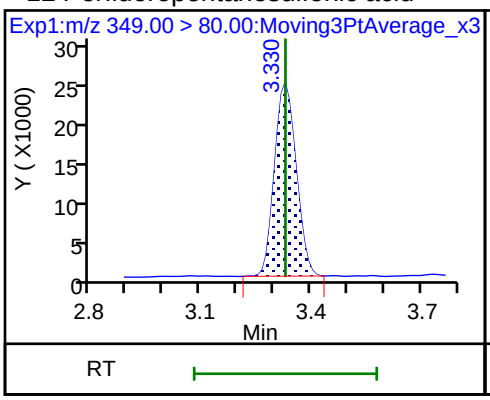
10 Perfluorohexanoic acid



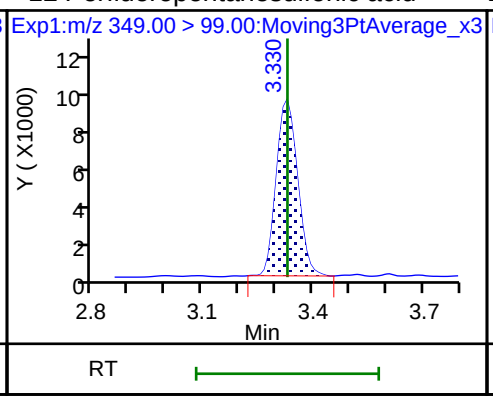
10 Perfluorohexanoic acid



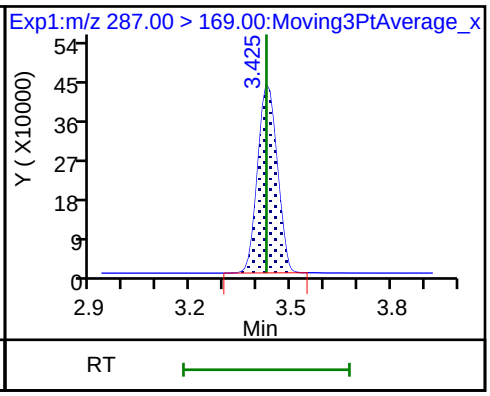
12 Perfluoropentanesulfonic acid



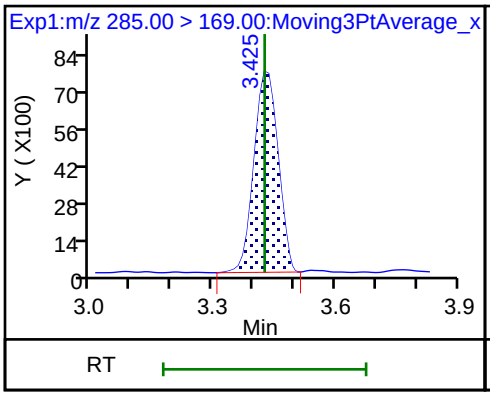
12 Perfluoropentanesulfonic acid



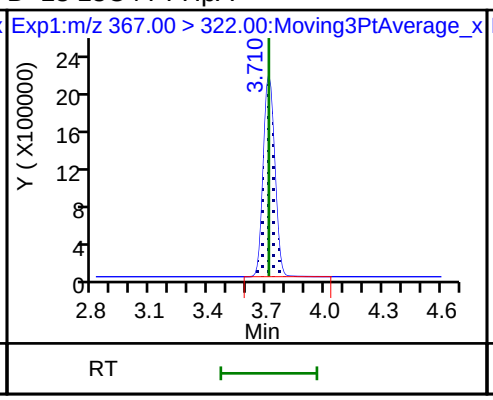
D 14 13C3 HFPO-DA



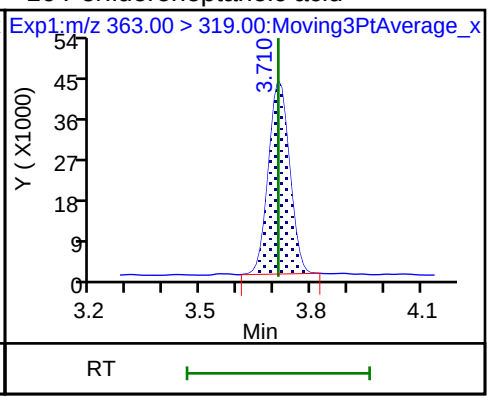
13 HPFO-DA



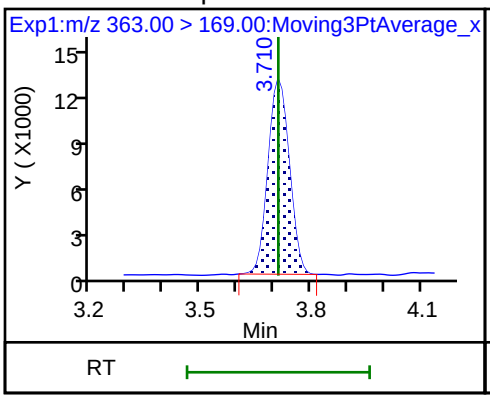
D 18 13C4 PFHpA



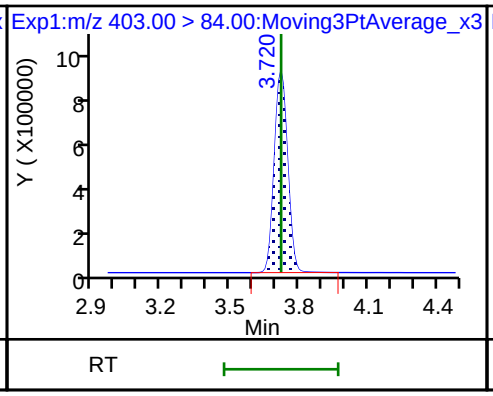
16 Perfluoroheptanoic acid



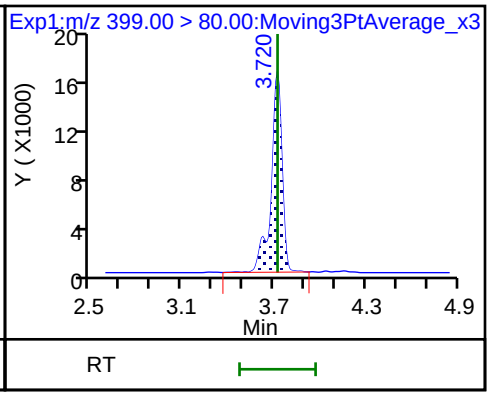
16 Perfluoroheptanoic acid



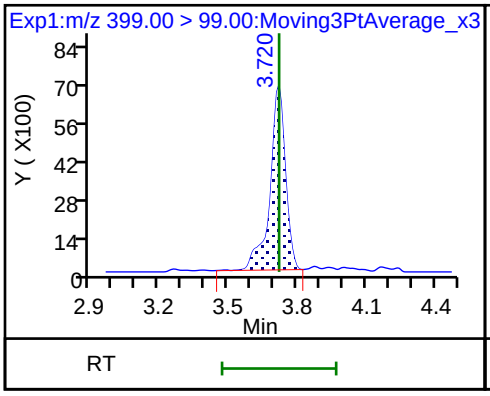
D 17 18O2 PFHxS



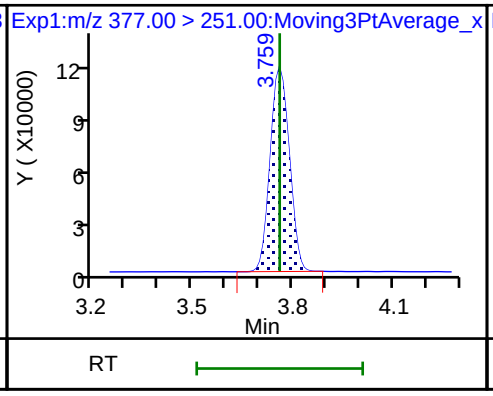
15 Perfluorohexanesulfonic acid



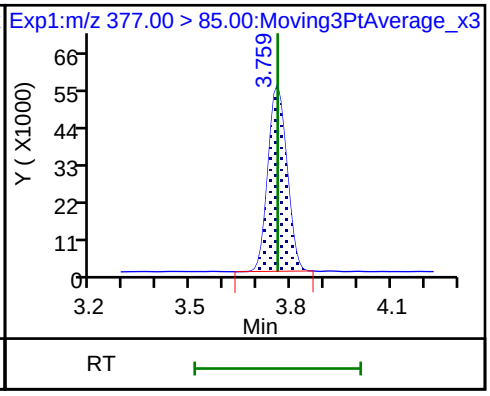
15 Perfluorohexanesulfonic acid



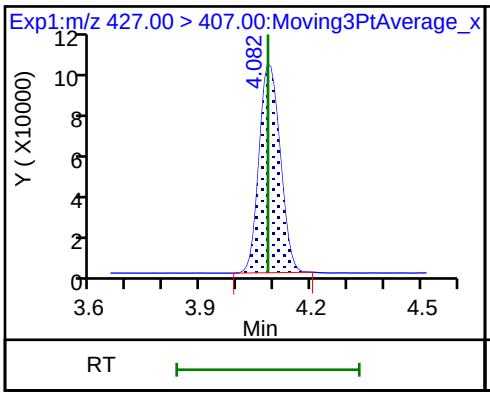
19 DONA



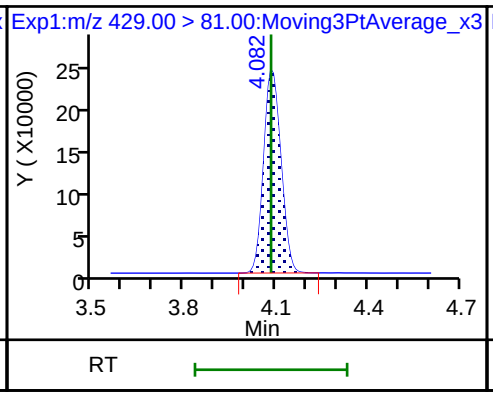
19 DONA



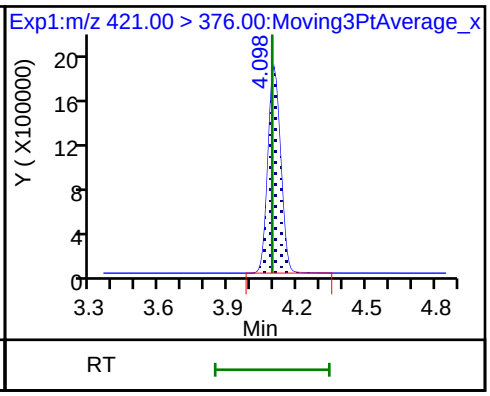
21 6:2 FTS



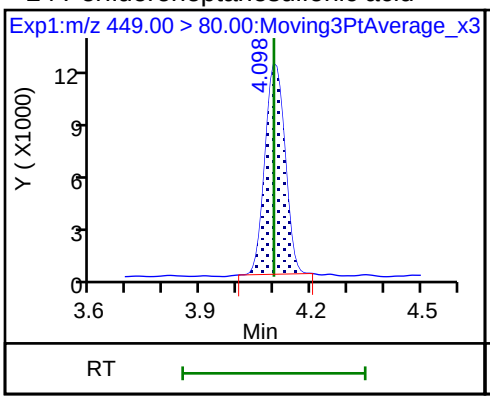
D 20 M2-6:2 FTS



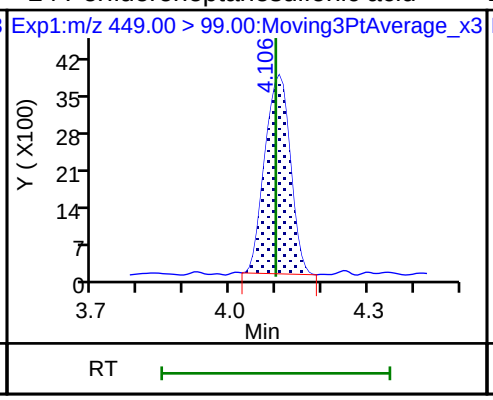
$ 26 13C8 PFOA



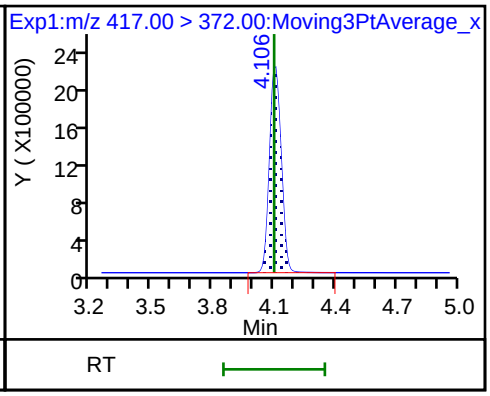
24 Perfluoroheptanesulfonic acid



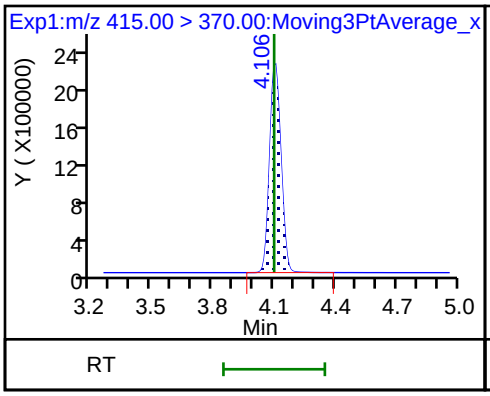
24 Perfluoroheptanesulfonic acid



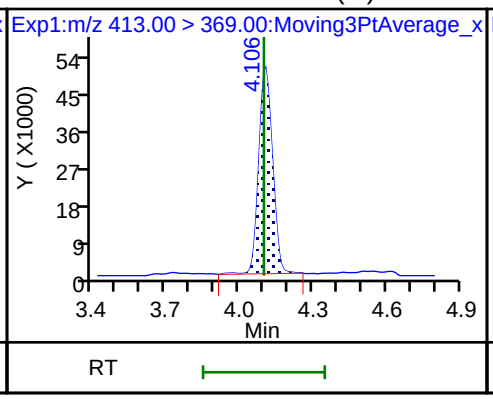
D 25 13C4 PFOA



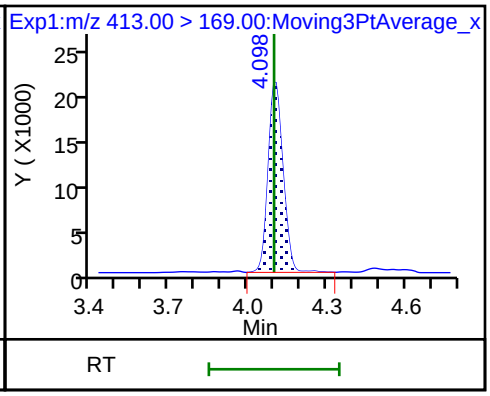
* 23 13C2 PFOA



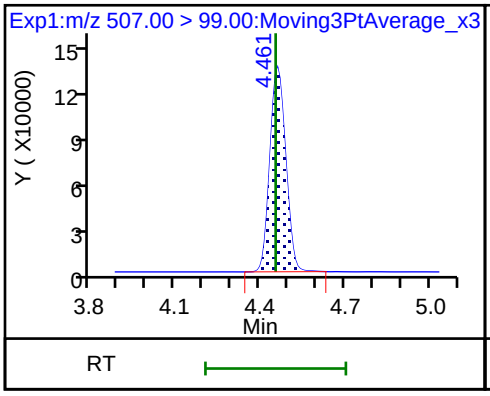
22 Perfluorooctanoic acid (M)



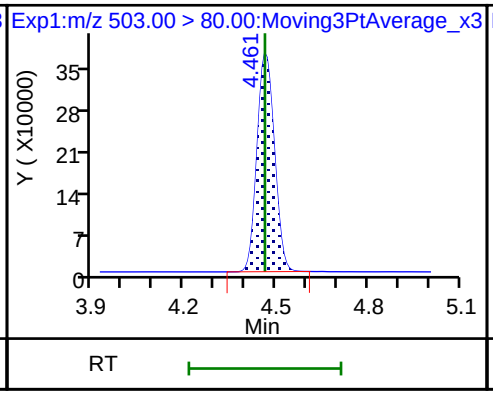
22 Perfluorooctanoic acid



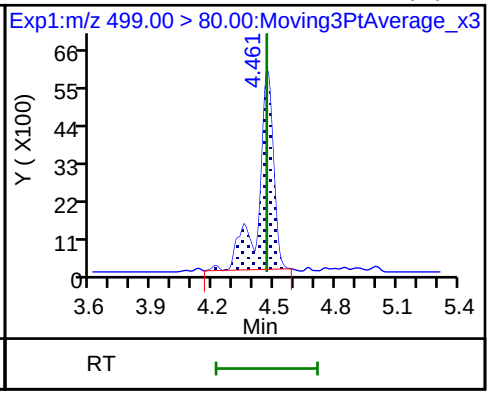
$ 28 13C8 PFOS



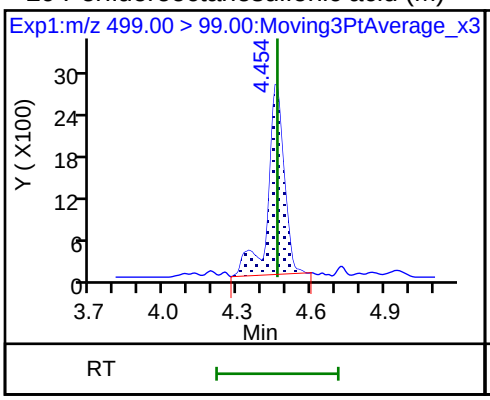
D 27 13C4 PFOS



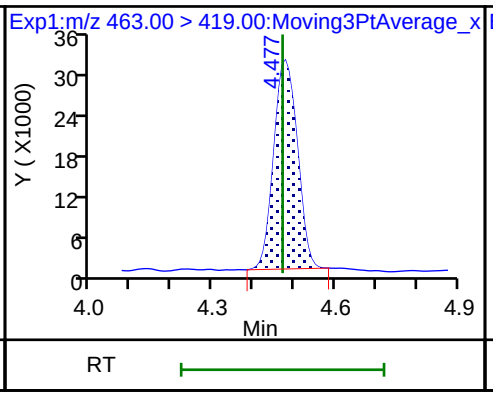
29 Perfluorooctanesulfonic acid (M)



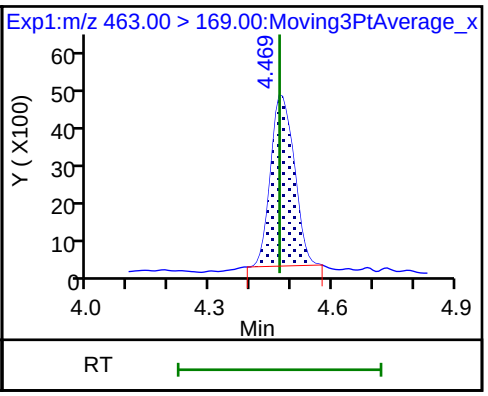
29 Perfluorooctanesulfonic acid (M)



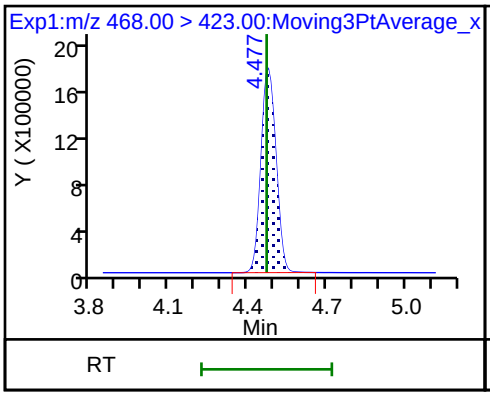
31 Perfluorononanoic acid



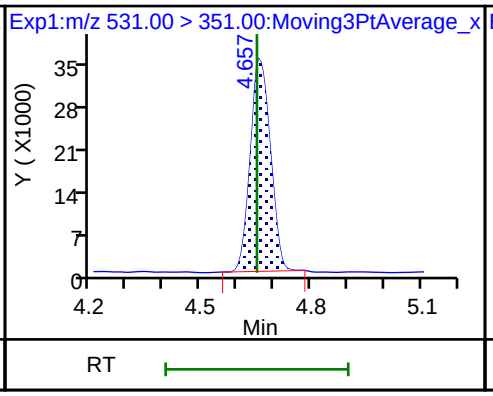
31 Perfluorononanoic acid



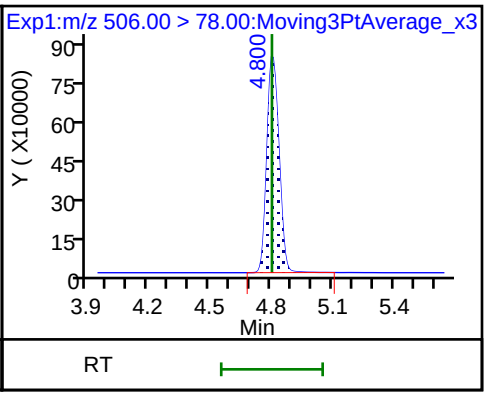
D 30 13C5 PFNA



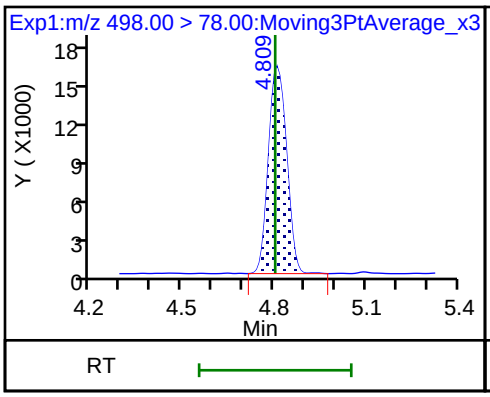
32 9ClFOS



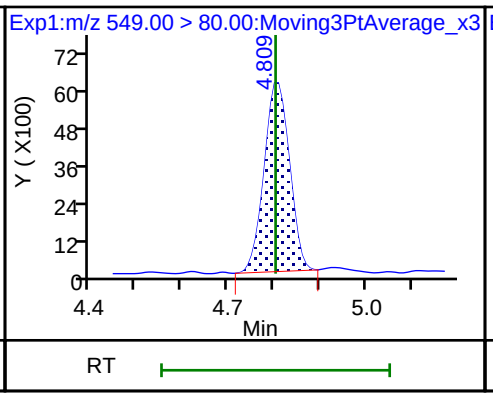
D 33 13C8 FOSA



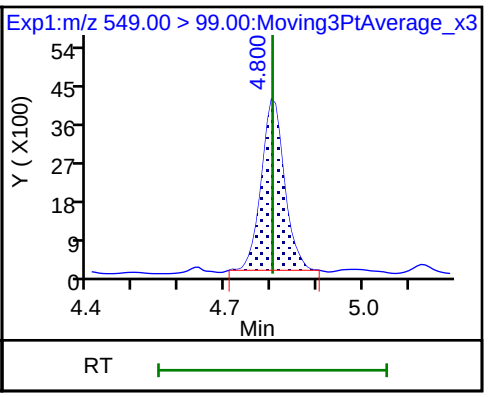
34 Perfluorooctanesulfonamide



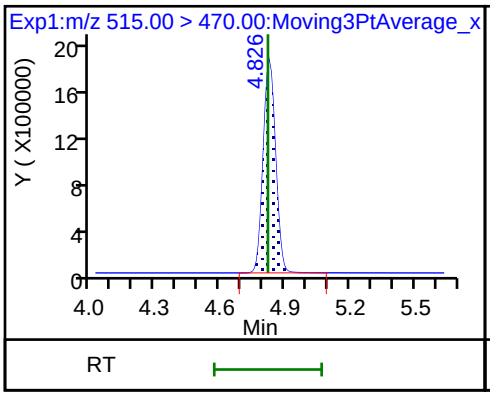
35 Perfluorononanesulfonic acid



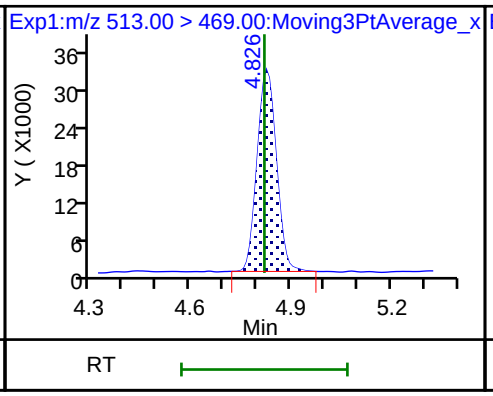
35 Perfluorononanesulfonic acid



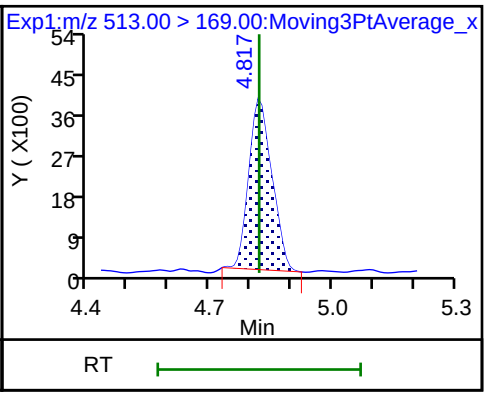
D 39 13C2 PFDA



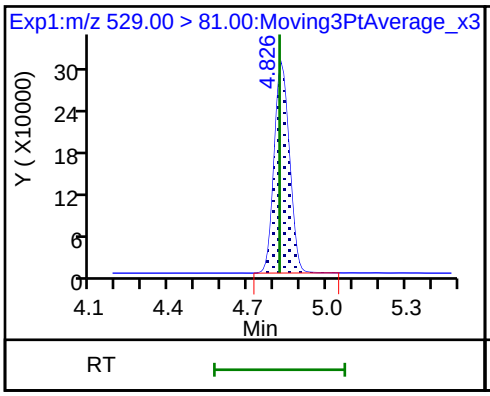
37 Perfluorodecanoic acid



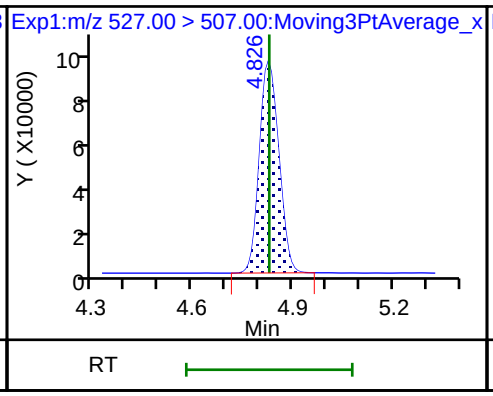
37 Perfluorodecanoic acid



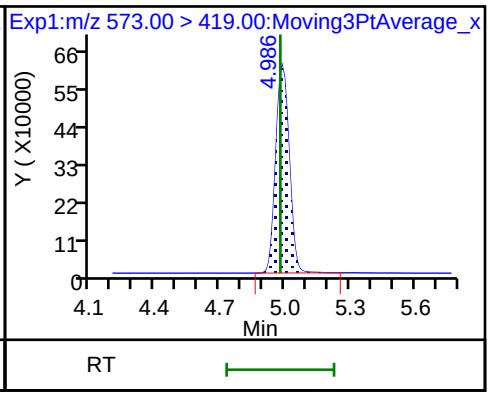
D 38 M2-8:2 FTS



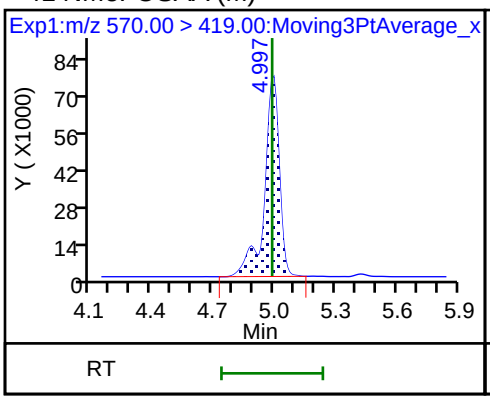
36 8:2 FTS



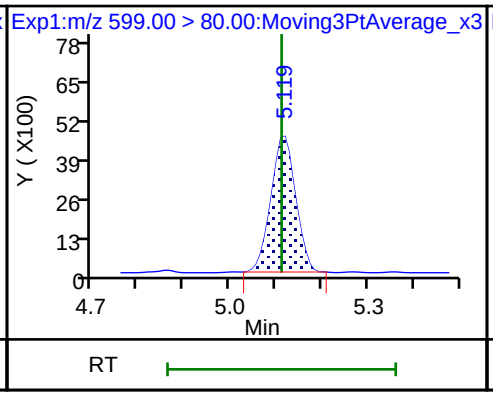
D 40 d3-NMeFOSAA



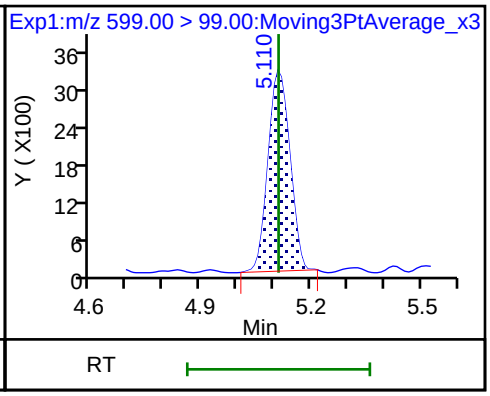
41 NMeFOSAA (M)



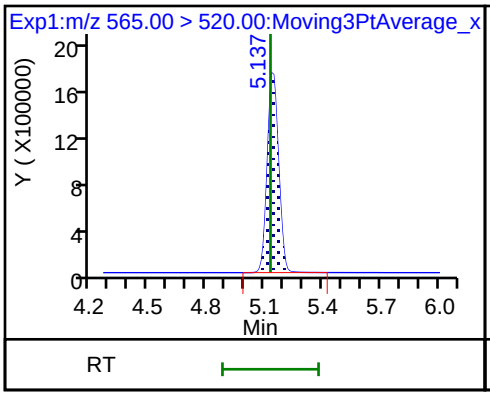
42 Perfluorodecanesulfonic acid



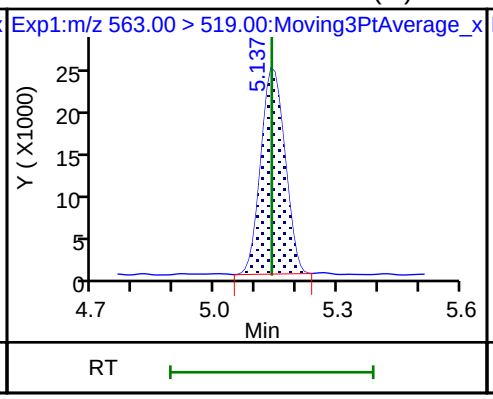
42 Perfluorodecanesulfonic acid



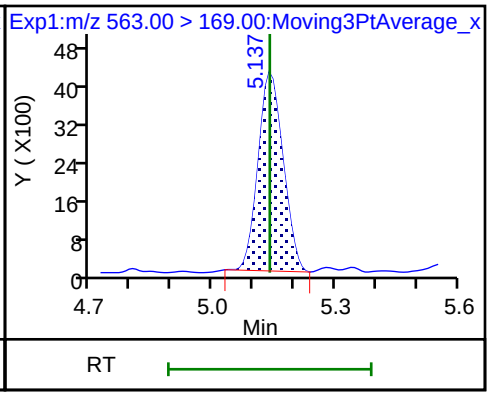
D 43 13C2 PFUnA



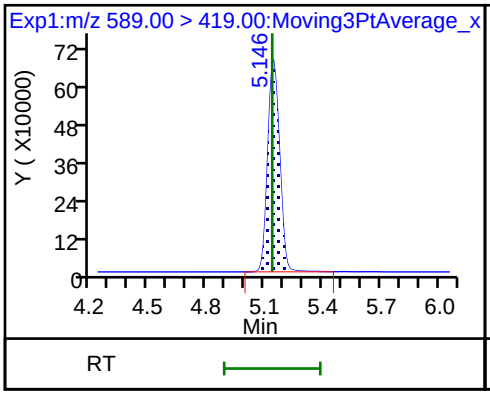
45 Perfluoroundecanoic acid (M)



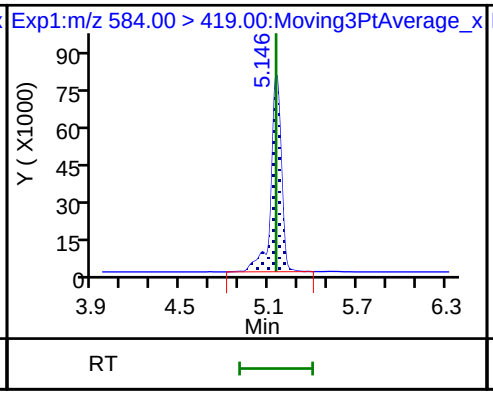
45 Perfluoroundecanoic acid



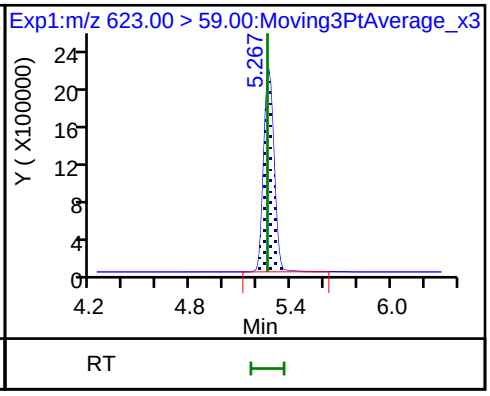
D 44 d5-NEtFOSAA



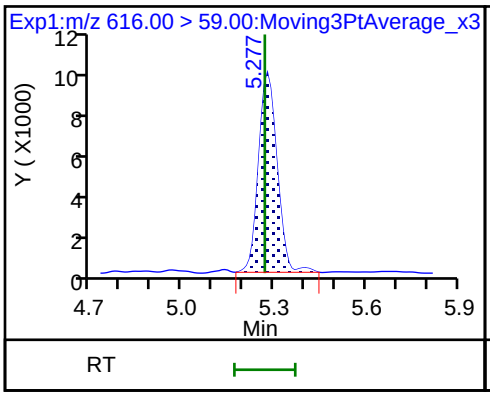
46 NEtFOSA



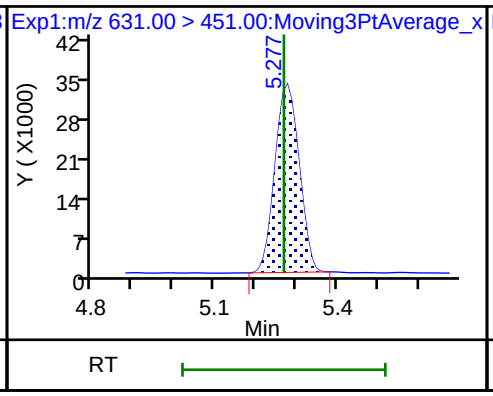
D 47 d7-N-MeFOSE-M



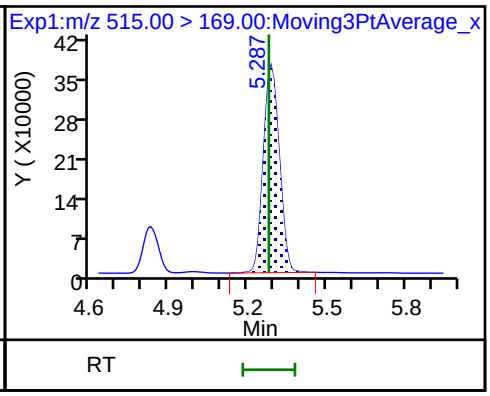
48 N-MeFOSE-M



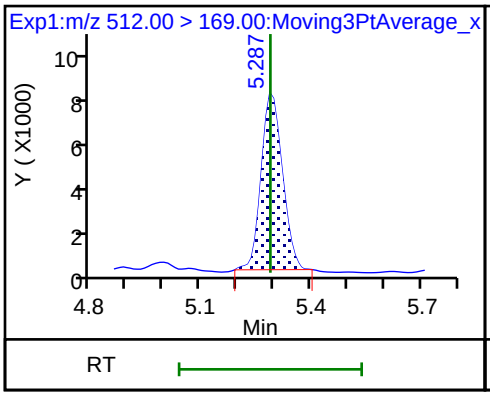
51 11ClFOS



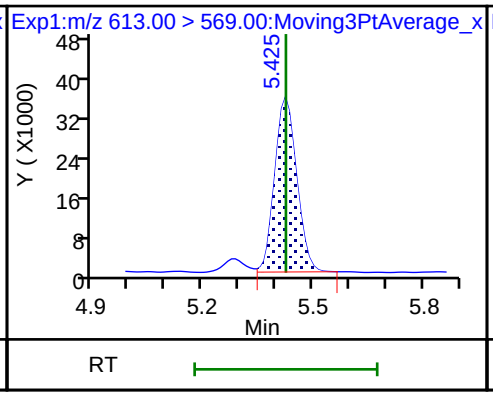
D 49 d-N-MeFOSA-M



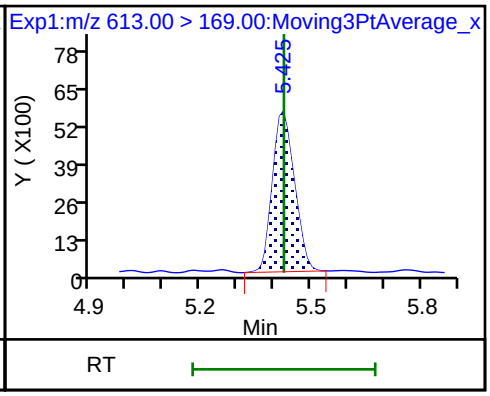
50 NMeFOSA



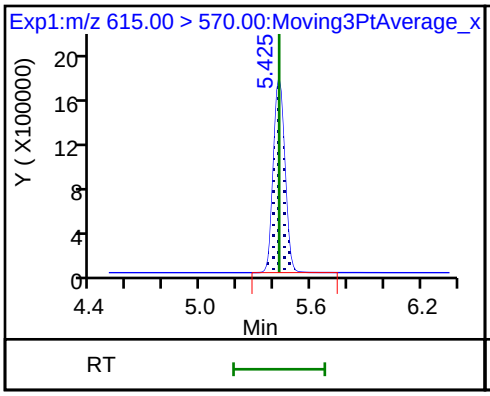
57 Perfluorododecanoic acid



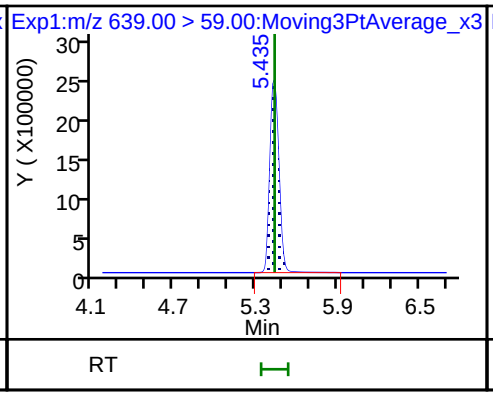
57 Perfluorododecanoic acid



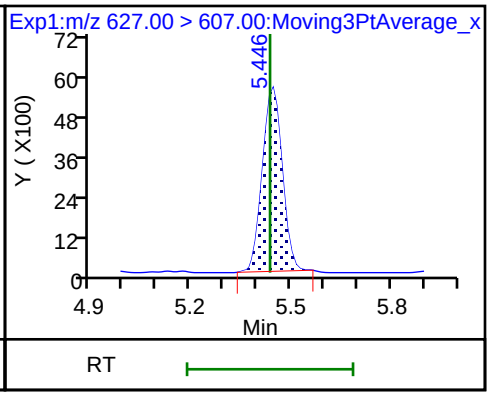
D 56 13C2 PFDoA



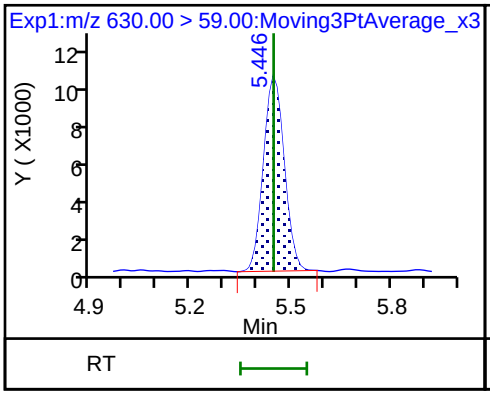
D 52 d9-N-EtFOSE-M



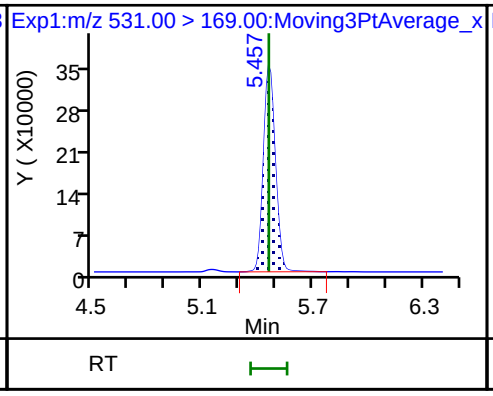
58 10:2 FTS



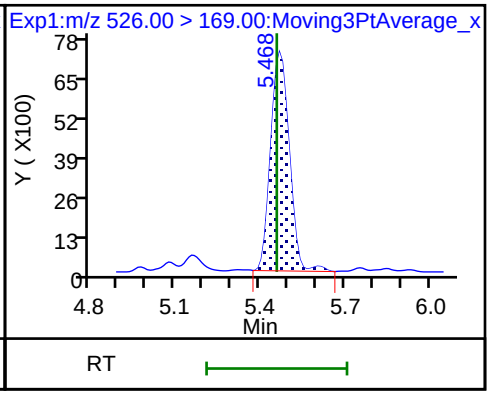
53 N-EtFOSE-M



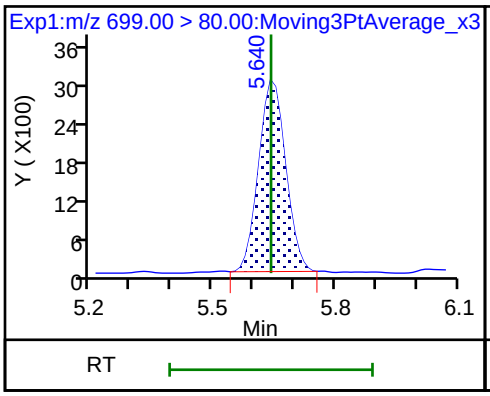
D 54 d-N-EtFOSA-M



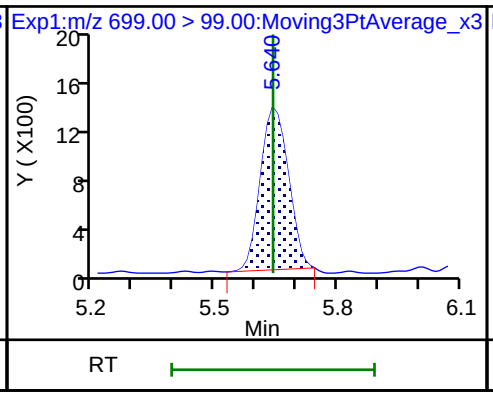
55 N-EtFOSA-M



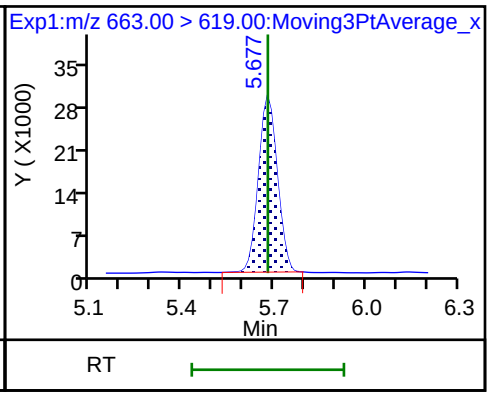
59 PFDoS



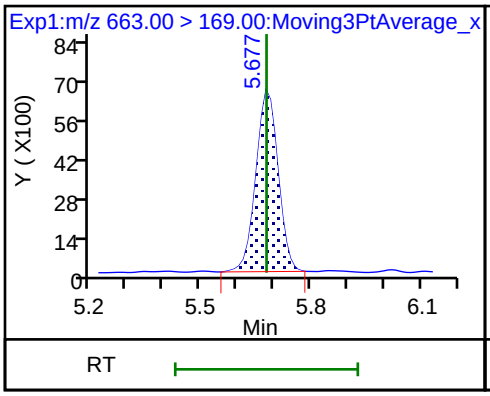
59 PFDoS



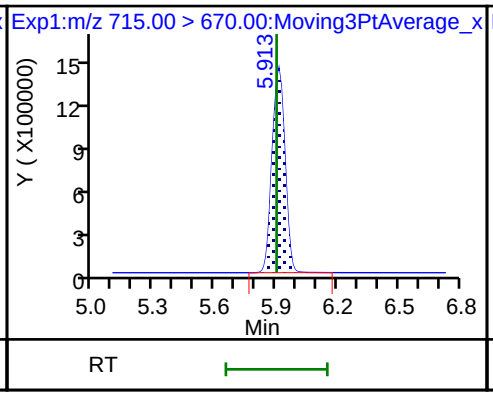
60 Perfluorotridecanoic acid



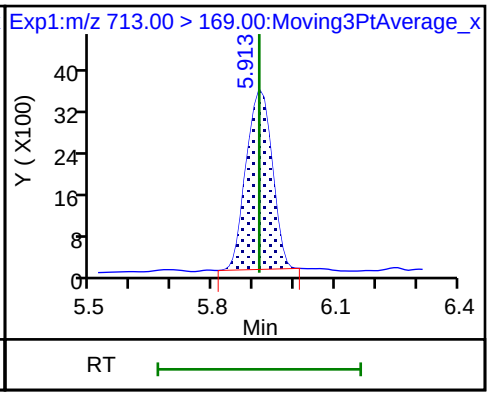
60 Perfluorotridecanoic acid



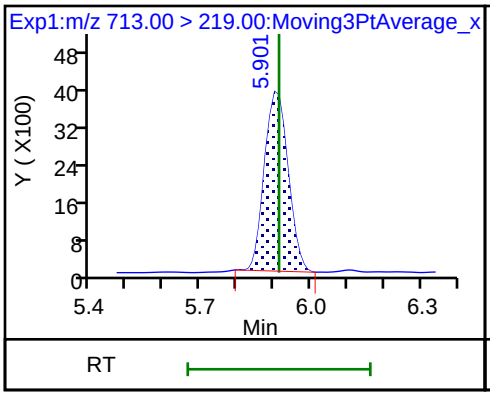
D 61 13C2 PFTeDA



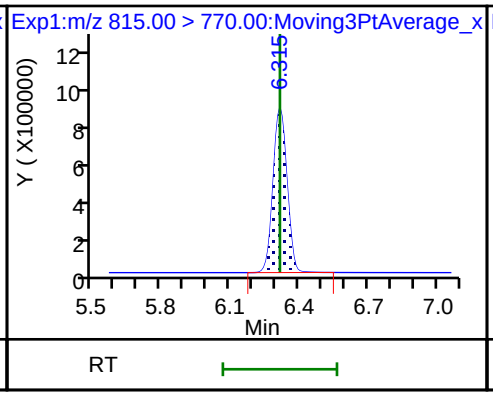
62 Perfluorotetradecanoic acid



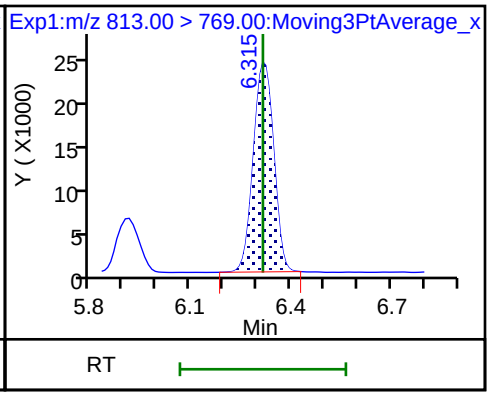
62 Perfluorotetradecanoic acid



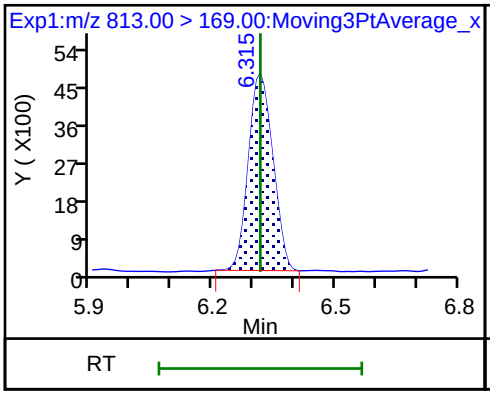
D 64 13C2 PFHxDA



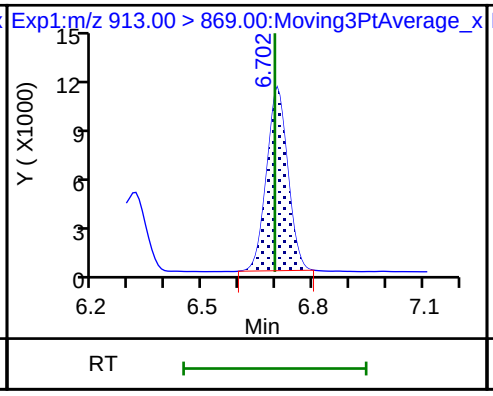
63 Perfluorohexadecanoic acid



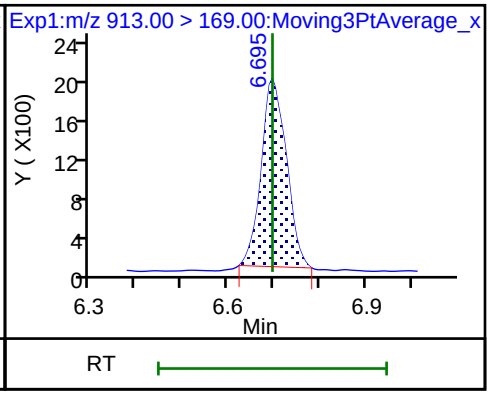
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

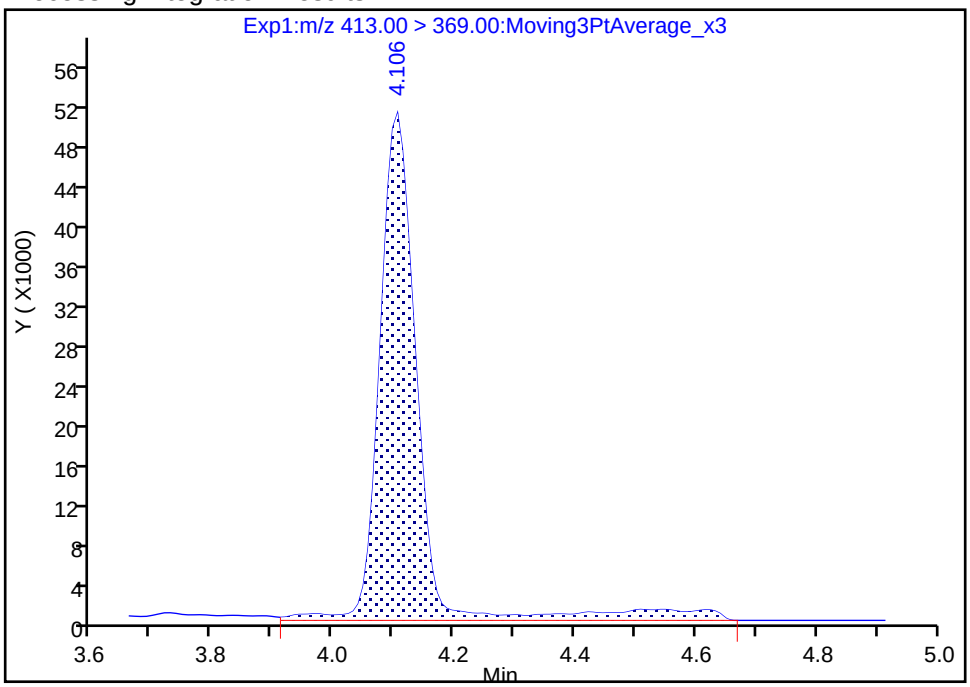
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_005.d
Injection Date: 04-Jun-2020 09:29:46 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

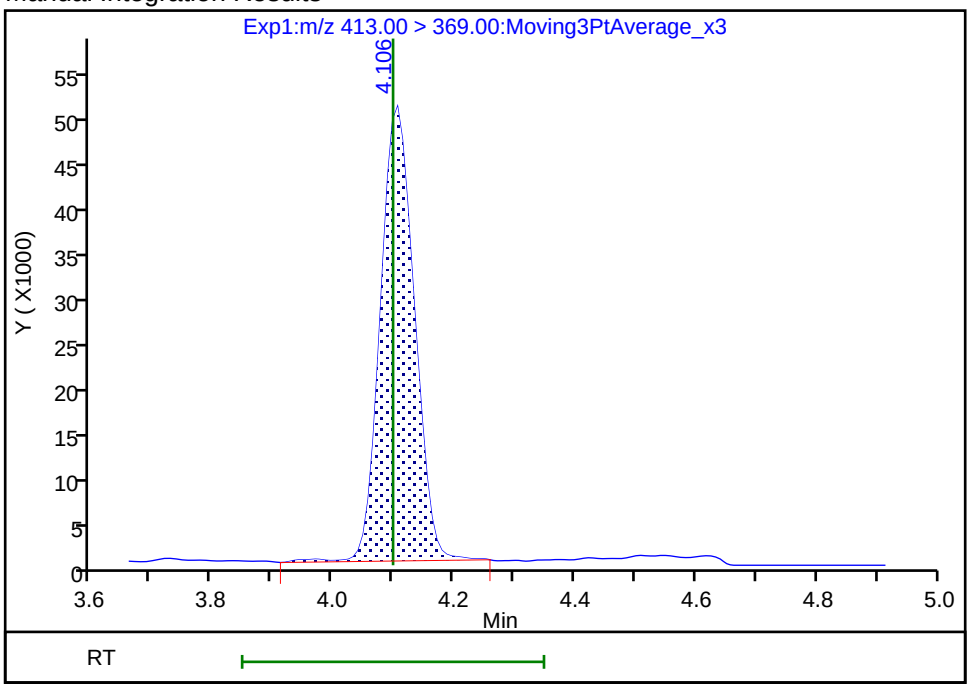
Processing Integration Results

RT: 4.11
Area: 225757
Amount: 0.063417
Amount Units: ng/ml



Manual Integration Results

RT: 4.11
Area: 198070
Amount: 0.055639
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:12:27
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

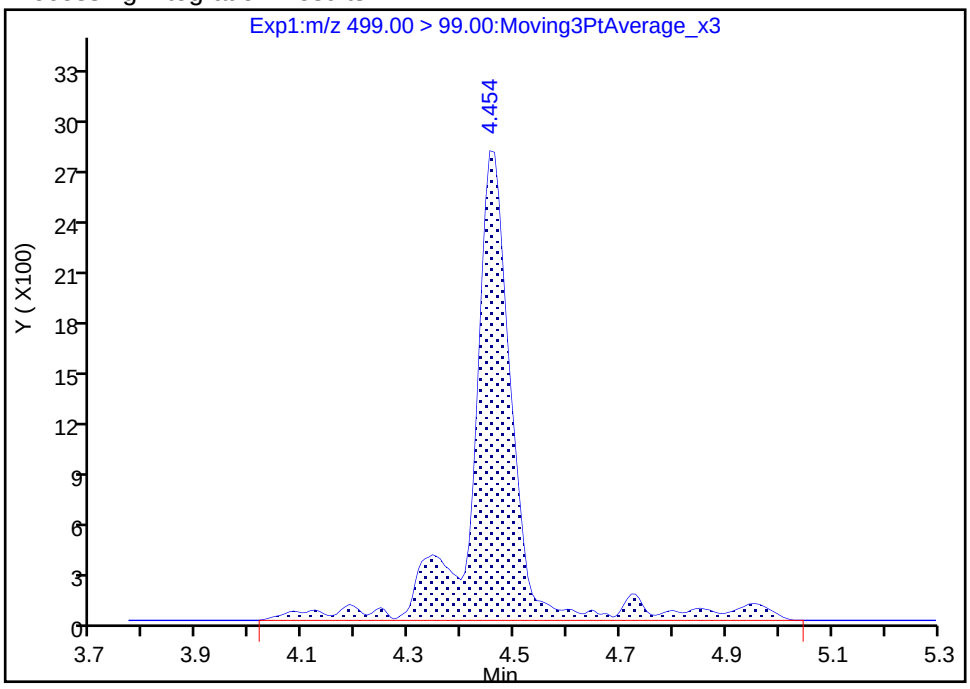
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_005.d
Injection Date: 04-Jun-2020 09:29:46 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 2

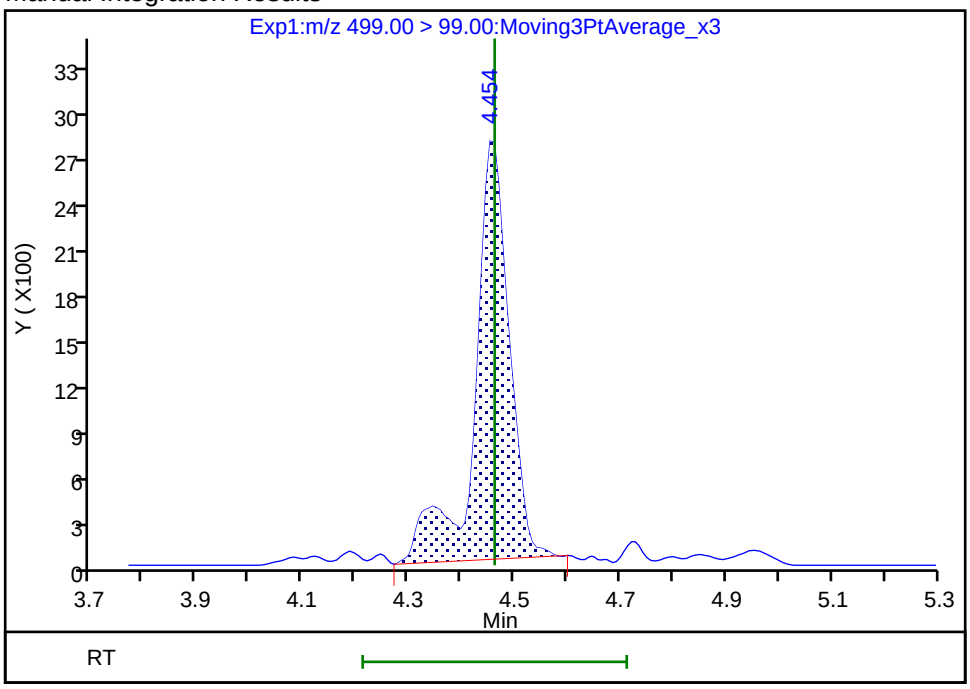
RT: 4.45
Area: 15205
Amount: 0.050493
Amount Units: ng/ml

Processing Integration Results



RT: 4.45
Area: 12388
Amount: 0.048334
Amount Units: ng/ml

Manual Integration Results



Reviewer: nadonp, 05-Jun-2020 08:12:35
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

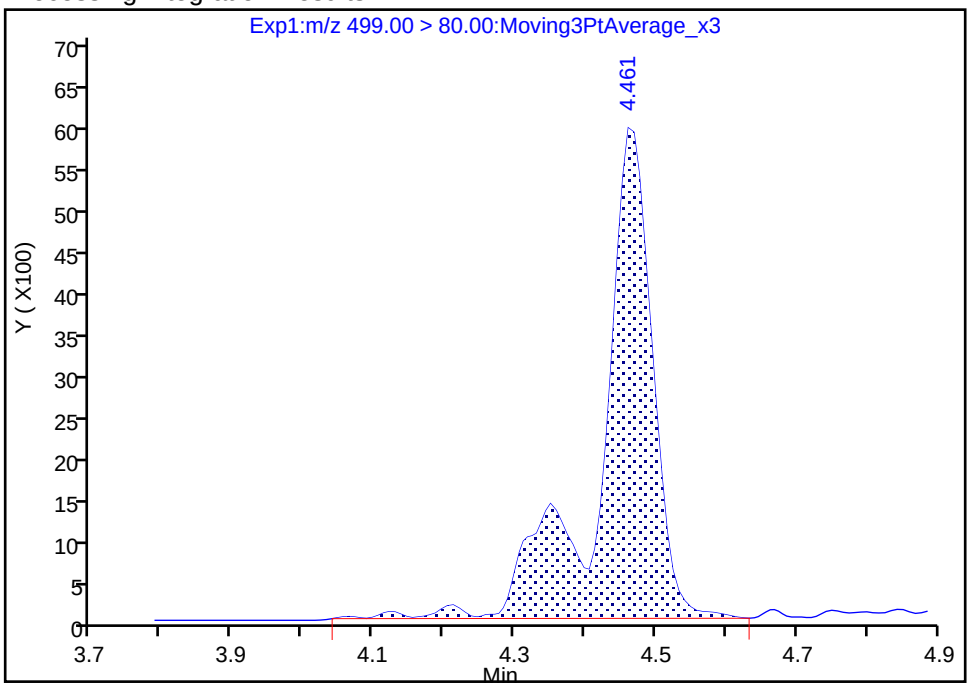
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_005.d
Injection Date: 04-Jun-2020 09:29:46 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

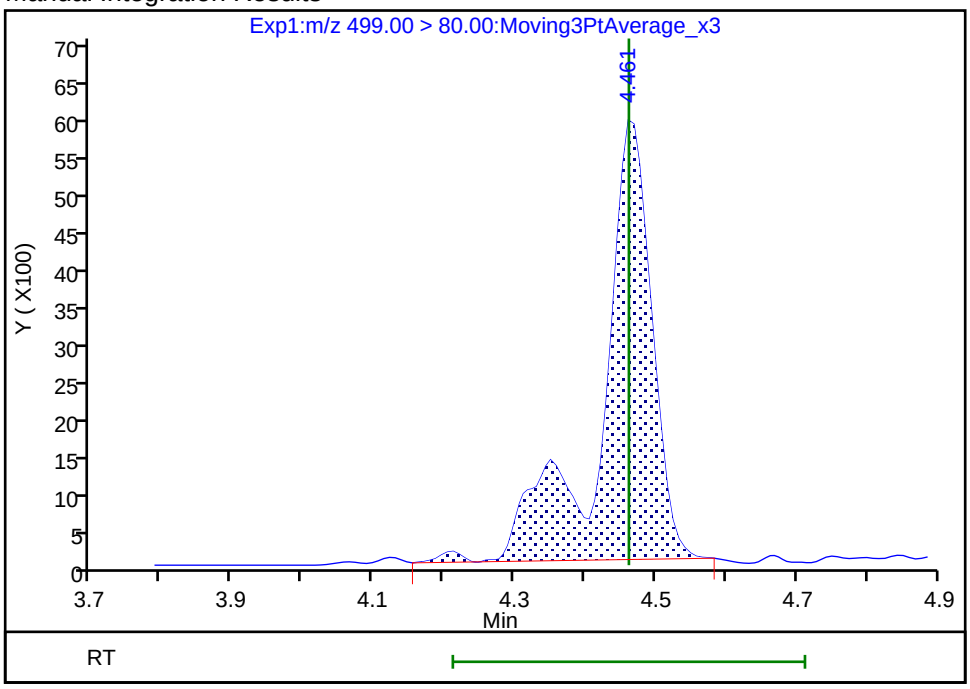
Processing Integration Results

RT: 4.46
Area: 31086
Amount: 0.050493
Amount Units: ng/ml



Manual Integration Results

RT: 4.46
Area: 29757
Amount: 0.048334
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:12:42
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

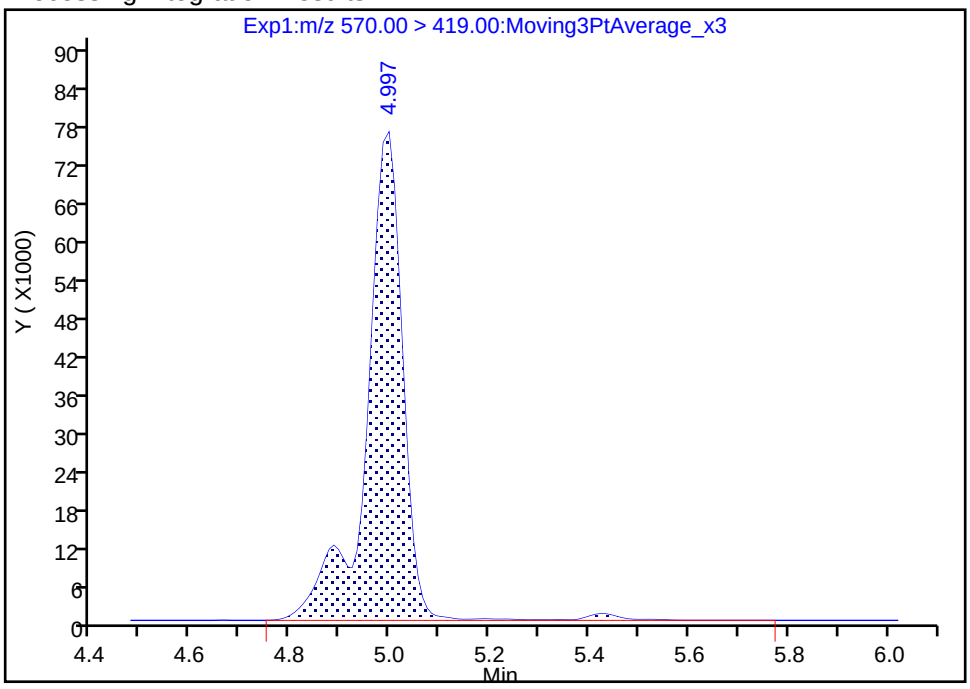
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_005.d				
Injection Date:	04-Jun-2020 09:29:46	Instrument ID:	A18		
Lims ID:	CCVL				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	51	Worklist Smp#:	3
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 NMeFOSAA, CAS: 2355-31-9

Signal: 1

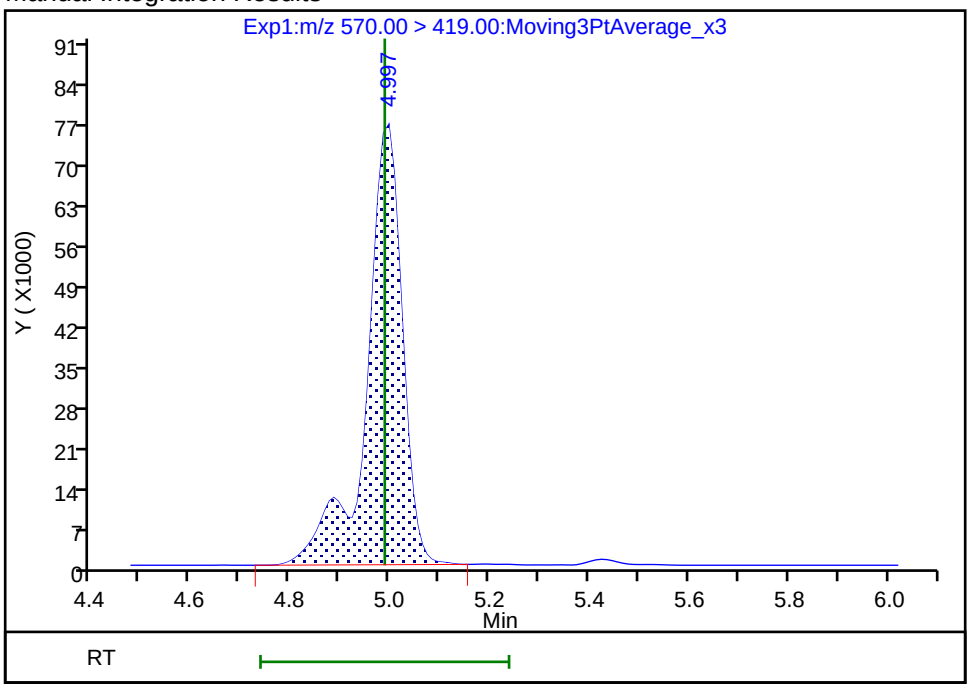
Processing Integration Results

RT: 5.00
Area: 389823
Amount: 0.515631
Amount Units: ng/ml



Manual Integration Results

RT: 5.00
Area: 381961
Amount: 0.505232
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:12:54
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

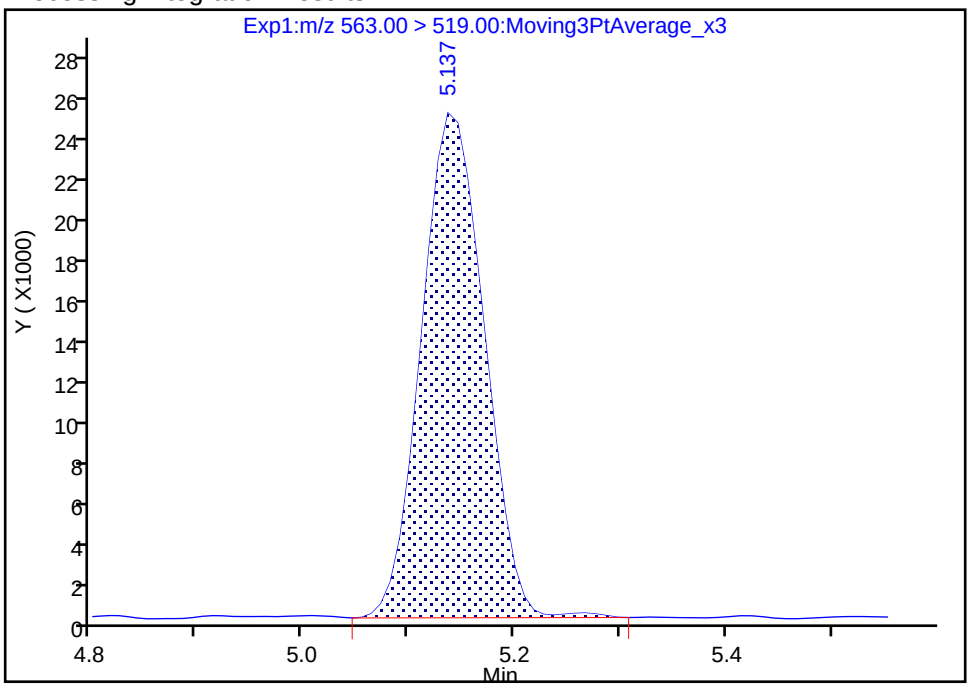
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_005.d
Injection Date: 04-Jun-2020 09:29:46 Instrument ID: A18
Lims ID: CCVL
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 51 Worklist Smp#: 3
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

45 Perfluoroundecanoic acid, CAS: 2058-94-8

Signal: 1

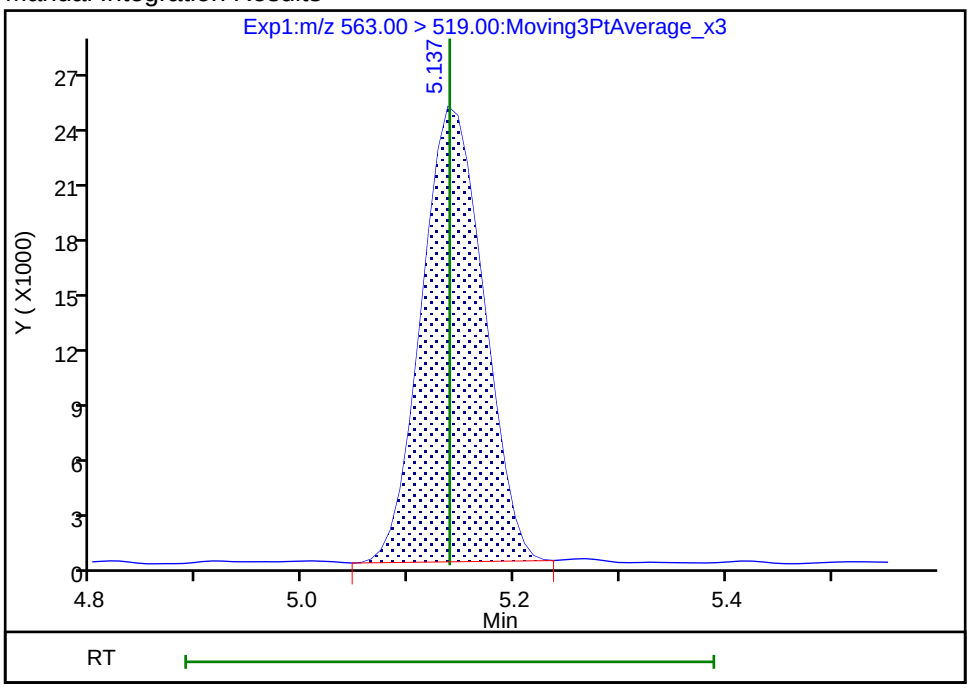
Processing Integration Results

RT: 5.14
Area: 102692
Amount: 0.049200
Amount Units: ng/ml



Manual Integration Results

RT: 5.14
Area: 101441
Amount: 0.048600
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:13:02
Audit Action: Manually Integrated Audit Reason: Baseline

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383436/4 Calibration Date: 06/04/2020 09:38

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.04_A18_PFC_A_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8517	0.8402		0.987	1.00	-1.3	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9630	0.9599		0.997	1.00	-0.3	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9751	0.9710		0.880	0.884	-0.4	50.0
4:2 FTS	AveID	2.096	2.143		0.955	0.934	2.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9300	0.9350		1.01	1.00	0.5	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7168	0.7167		0.938	0.938	-0.0	50.0
HFPO-DA (GenX)	AveID	0.9456	0.9391		0.993	1.00	-0.7	40.0
Perfluoroheptanoic acid	AveID	0.9856	0.9563		0.970	1.00	-3.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.151	1.128		0.892	0.910	-2.0	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	15.91	17.00		1.01	0.942	6.9	50.0
6:2 FTS	AveID	2.003	1.994		0.944	0.948	-0.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.514	1.607		1.01	0.952	6.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.013	0.9906		0.978	1.00	-2.2	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.009	1.030		0.948	0.928	2.1	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9614	1.030		1.07	1.00	7.1	40.0
F-53B Major	AveID	4.948	5.114		0.963	0.932	3.4	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7814	0.8412		1.03	0.960	7.7	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9186	0.9301		1.01	1.00	1.2	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.8950	0.8770		0.980	1.00	-2.0	40.0
8:2 FTS	AveID	1.536	1.527		0.953	0.958	-0.6	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7080	0.7228		1.02	1.00	2.1	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5780	0.6278		1.05	0.964	8.6	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7407	0.7934		1.07	1.00	7.1	40.0
NEtFOSAA	AveID	0.7021	0.6493		0.925	1.00	-7.5	40.0
F-53B Minor	AveID	5.427	5.657		0.982	0.942	4.3	50.0
NMeFOSE	AveID	0.9823	1.058		1.08	1.00	7.7	40.0
NMeFOSA	AveID	0.9235	1.031		1.12	1.00	11.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9313	0.8866		0.952	1.00	-4.8	40.0
10:2 FTS	AveID	1.215	1.251		0.993	0.964	3.0	50.0
NEtFOSE	AveID	1.004	1.122		1.12	1.00	11.8	40.0
NEtFOSA	AveID	1.045	1.132		1.08	1.00	8.3	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.5352	0.5260		0.951	0.968	-1.7	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8742	0.8865		1.01	1.00	1.4	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383436/4 Calibration Date: 06/04/2020 09:38

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.04_A18_PFC_A_006.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1331	0.1352		1.02	1.00	1.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9700		1.09	1.00	9.2	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5363	0.5441		1.01	1.00	1.4	50.0
13C4 PFBA	Ave	1.247	1.242		2.49	2.50	-0.4	50.0
13C5 PFPeA	Ave	1.118	1.066		2.38	2.50	-4.7	50.0
13C3 PFBS	Ave	0.8747	0.8718		2.32	2.33	-0.3	50.0
M2-4:2 FTS	Ave	0.1422	0.1300		2.13	2.34	-8.6	50.0
13C2 PFHxA	Ave	1.114	1.092		2.45	2.50	-2.0	50.0
13C3 HFPO-DA	Ave	0.2176	0.2066		2.37	2.50	-5.1	50.0
13C4 PFHpA	Ave	0.9885	0.9775		2.47	2.50	-1.1	50.0
18O2 PFHxS	Ave	0.4173	0.4111		2.33	2.37	-1.5	50.0
M2-6:2 FTS	Ave	0.1146	0.1074		2.22	2.38	-6.3	50.0
13C4 PFOA	Ave	0.9904	0.9743		2.46	2.50	-1.6	50.0
13C4 PFOS	Ave	0.1771	0.1695		2.29	2.39	-4.3	50.0
13C5 PFNA	Ave	0.8069	0.7699		2.39	2.50	-4.6	50.0
13C8 FOSA	Ave	0.3929	0.3906		2.49	2.50	-0.6	50.0
13C2 PFDA	Ave	0.8716	0.8558		2.45	2.50	-1.8	50.0
M2-8:2 FTS	Ave	0.1448	0.1349		2.23	2.40	-6.8	50.0
d3-NMeFOSAA	Ave	0.3238	0.3127		2.41	2.50	-3.4	50.0
13C2 PFUnA	Ave	0.8155	0.7668		2.35	2.50	-6.0	50.0
d5-NEtFOSAA	Ave	0.3303	0.3269		2.47	2.50	-1.0	50.0
d7-N-MeFOSE-M	Ave	0.2336	0.2363		12.6	12.5	1.1	50.0
d-N-MeFOSA-M	Ave	0.1846	0.1677		2.27	2.50	-9.1	50.0
13C2 PFDoA	Ave	0.8615	0.8835		2.56	2.50	2.6	50.0
d9-N-EtFOSE-M	Ave	0.2653	0.2479		11.7	12.5	-6.5	50.0
d-N-EtFOSA-M	Ave	0.1896	0.1647		2.17	2.50	-13.2	50.0
13C2 PFTeDA	Ave	0.7207	0.7231		2.51	2.50	0.3	50.0
13C2 PFHxDA	Ave	0.5104	0.4919		2.41	2.50	-3.6	50.0
13C8 PFOA	Ave	0.8173	0.8044		2.41	2.45	-1.6	50.0
13C8 PFOS	Ave	0.0612	0.0587		2.29	2.39	-4.2	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_006.d
Lims ID: CCV L4
Client ID:
Sample Type: CCVIS
Inject. Date: 04-Jun-2020 09:38:55 ALS Bottle#: 52 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4 (26)
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 08:15:35 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: nadonp Date: 05-Jun-2020 08:15:35
Ratio Calibration: Average of Initial Calibration

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	2.565	2.565	0.0	0.626	11275211	2.49		99.6	13876	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.573	2.573	0.0	1.003	3789523	0.9865		98.7	1076	
D 4 13C5 PFPeA										
267.90 > 223.00	2.929	2.929	0.0	0.715	9670587	2.38		95.3	7052	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.940	2.940	0.0	1.004	3713089	1.00		99.7	974	
D 9 13C3 PFBS										
301.90 > 80.00	2.973	2.973	0.0	0.725	7357623	2.32		99.7	5301	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.973	2.973	0.0	1.000	2716312	0.8803	Target=2.25	99.6	2370	
298.90 > 99.00	2.973	2.973	0.0	1.000	1198178		2.27(1.13-3.38)		1001	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.268	3.268	0.0	0.797	1101508	2.13		91.4	1742	
8 4:2 FTS										
327.00 > 307.00	3.268	3.268	0.0	1.000	944103	0.9546		102	4509	
D 11 13C2 PFHxA										
315.00 > 270.00	3.309	3.309	0.0	0.807	9908166	2.45		98.0	7190	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.309	3.309	0.0	1.000	3705755	1.01	Target=11.49	101	1384	
313.00 > 119.00	3.309	3.309	0.0	1.000	325026		11.40(5.74-17.23)		450	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.330	3.330	0.0	1.120	2127370	0.9378	Target=2.74	100.0	1961	
349.00 > 99.00	3.330	3.330	0.0	1.120	799675		2.66(1.37-4.12)		1598	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.426	3.426	0.0	0.836	1874646	2.37		94.9	4566	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.426	3.426	0.0	1.000	704179	0.99		99.3	2136	
D 18 13C4 PFHpA										
367.00 > 322.00	3.711	3.711	0.0	0.905	8870161	2.47		98.9	6030	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.711	3.711	0.0	1.000	3392878	0.9702	Target=3.25	97.0	1120	
363.00 > 169.00	3.711	3.711	0.0	1.000	1052124		3.22(1.62-4.87)		1794	
D 17 18O2 PFHxS										
403.00 > 84.00	3.721	3.721	0.0	0.908	3529457	2.33		98.5	3575	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.721	3.721	0.0	1.000	1531683	0.8915	Target=2.90	98.0	2394	
399.00 > 99.00	3.721	3.721	0.0	1.000	532592		2.88(1.45-4.35)		1795	
19 DONA										
377.00 > 251.00	3.760	3.760	0.0	0.843	9853972	1.01	Target=2.01	107	8490	
377.00 > 85.00	3.760	3.760	0.0	0.843	4840214		2.04(1.00-3.01)		4360	
21 6:2 FTS										
427.00 > 407.00	4.082	4.082	0.0	1.000	736662	0.9437		99.6	1884	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.082	4.082	0.0	0.996	925692	2.22		93.7	2326	
$ 26 13C8 PFOA										
421.00 > 376.00	4.090	4.090	0.0	0.998	7146363	2.41		98.4	5251	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.099	4.099	0.0	0.919	941201	1.01	Target=3.25	106	1915	
449.00 > 99.00	4.099	4.099	0.0	0.919	286992		3.28(1.63-4.88)		962	
D 25 13C4 PFOA										
417.00 > 372.00	4.099	4.099	0.0	1.000	8841308	2.46		98.4	5748	
* 23 13C2 PFOA										
415.00 > 370.00	4.099	4.099	0.0		9074725	2.50			7094	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.099	4.099	0.0	1.000	3503116	0.9783	Target=2.35	97.8	1101	M
413.00 > 169.00	4.099	4.099	0.0	1.000	1462002		2.40(1.18-3.53)		3752	
$ 28 13C8 PFOS										
507.00 > 99.00	4.454	4.454	0.0	1.087	508834	2.29		95.8	1117	
D 27 13C4 PFOS										
503.00 > 80.00	4.462	4.462	0.0	1.089	1470391	2.29		95.7	2627	
29 Perfluorooctanesulfonic acid										M
499.00 > 80.00	4.462	4.462	0.0	1.000	588160	0.9479	Target=2.41	102	840	M
499.00 > 99.00	4.462	4.462	0.0	1.000	236454		2.49(1.21-3.62)		635	
31 Perfluorononanoic acid										
463.00 > 419.00	4.470	4.470	0.0	1.000	2877689	1.07	Target=6.74	107	1021	
463.00 > 169.00	4.478	4.470	0.008	1.002	422602		6.81(3.37-10.11)		1048	
D 30 13C5 PFNA										
468.00 > 423.00	4.470	4.470	0.0	1.091	6986386	2.39		95.4	6199	
32 9ClFOS										
531.00 > 351.00	4.652	4.652	0.0	1.043	2932396	0.9632		103	2859	
D 33 13C8 FOSA										
506.00 > 78.00	4.803	4.803	0.0	1.172	3544458	2.49		99.4	3426	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.803	4.803	0.0	1.000	1318609	1.01		101	2190	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.803	4.803	0.0	1.076	496831	1.03	Target=1.37	108	2516	
549.00 > 99.00	4.794	4.803	-0.009	1.074	378573		1.31(0.69-2.06)		2309	
D 39 13C2 PFDA										
515.00 > 470.00	4.820	4.820	0.0	1.176	7766429	2.45		98.2	7402	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.820	4.820	0.0	1.000	2724555	0.9799	Target=8.07	98.0	2073	
513.00 > 169.00	4.820	4.820	0.0	1.000	371521		7.33(4.04-12.11)		354	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.820	4.820	0.0	1.176	1172659	2.23		93.2	2091	
36 8:2 FTS										
527.00 > 507.00	4.828	4.828	0.0	1.002	716431	0.9527		99.4	3354	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.978	4.978	0.0	1.214	2838002	2.41		96.6	2895	
41 NMeFOSAA										
570.00 > 419.00	4.989	4.989	0.0	1.002	820492	1.02		102	10653	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.111	5.111	0.0	1.145	372332	1.05	Target=1.31	109	1310	
599.00 > 99.00	5.111	5.111	0.0	1.145	280854		1.33(0.65-1.96)		1460	
D 43 13C2 PFUnA										
565.00 > 520.00	5.130	5.130	0.0	1.252	6958418	2.35		94.0	8381	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.139	5.139	0.0	1.002	2208282	1.07	Target=6.70	107	1993	
563.00 > 169.00	5.139	5.139	0.0	1.002	341930		6.46(3.35-10.05)		1379	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.139	5.139	0.0	1.254	2966664	2.47		99.0	2395	
46 NEtFOSA										
584.00 > 419.00	5.148	5.148	0.0	1.002	770535	0.9248		92.5	1152	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.258	5.258	0.0	1.283	10719710	12.6		101	13422	
48 N-MeFOSE-M										
616.00 > 59.00	5.268	5.268	0.0	1.002	907241	1.08		108	1432	
51 11ClFOS										
631.00 > 451.00	5.268	5.268	0.0	1.181	3278732	0.9821		104	5912	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.279	5.279	0.0	1.288	1522215	2.27		90.9	33.1	
50 NMeFOSA										
512.00 > 169.00	5.289	5.289	0.0	1.002	627816	1.12		112	479	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.426	5.426	0.0	1.000	2843129	0.9519	Target=6.20	95.2	1525	
613.00 > 169.00	5.426	5.426	0.0	1.000	511427		5.56(3.10-9.30)		2137	
D 56 13C2 PFDoA										
615.00 > 570.00	5.426	5.426	0.0	1.324	8017432	2.56		103	14748	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.437	5.437	0.0	1.326	11249679	11.7		93.5	4838	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 10:2 FTS										
627.00 > 607.00	5.437	5.437	0.0	1.128	590586	0.99		103	3178	
53 N-EtFOSE-M										
630.00 > 59.00	5.448	5.448	0.0	1.002	1010166	1.12		112	1746	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.458	5.458	0.0	1.332	1494612	2.17		86.8	376	
55 N-EtFOSA-M										
526.00 > 169.00	5.458	5.458	0.0	1.000	676717	1.08		108	461	
59 PFDoS										
699.00 > 80.00	5.642	5.642	0.0	1.264	313239	0.9514	Target=2.11	98.3	1257	
699.00 > 99.00	5.642	5.642	0.0	1.264	155985		2.01(1.06-3.17)		1707	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.678	5.678	0.0	1.047	2843107	1.01	Target=4.98	101	2903	
663.00 > 169.00	5.678	5.678	0.0	1.047	575228		4.94(2.49-7.47)		1448	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.901	5.901	0.0	1.440	6562210	2.51		100	4675	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.913	5.913	0.0	1.002	354821	1.02	Target=0.96	102	1278	
713.00 > 219.00	5.901	5.913	-0.012	1.000	350881		1.01(0.48-1.43)		1716	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.315	6.315	0.0	1.541	4464018	2.41		96.4	6084	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.315	6.315	0.0	1.000	1732101	1.09	Target=5.10	109	1348	
813.00 > 169.00	6.315	6.315	0.0	1.000	320306		5.41(2.55-7.64)		2363	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.696	6.696	0.0	1.060	971481	1.01	Target=5.50	101	725	
913.00 > 169.00	6.696	6.696	0.0	1.060	163625		5.94(2.75-8.25)		1480	

QC Flag Legend

Review Flags

M - Manually Integrated

Reagents:

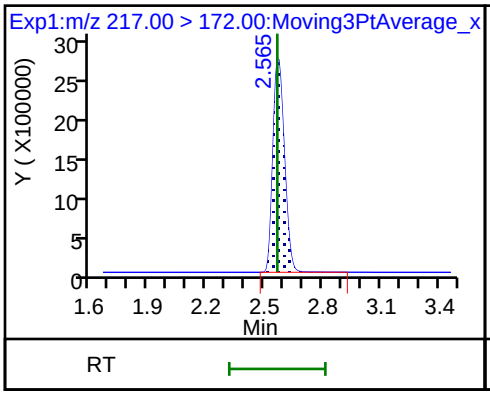
LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 08:15:36 Chrom Revision: 2.3 03-Jun-2020 23:27:16

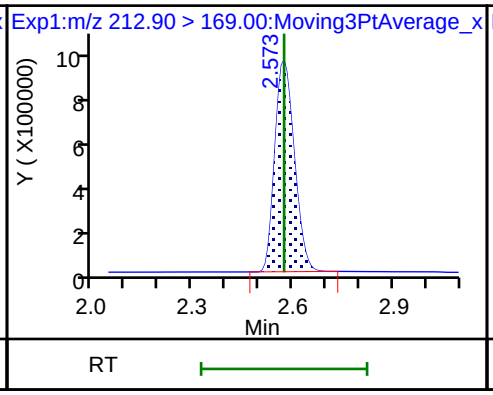
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_006.d
Injection Date: 04-Jun-2020 09:38:55 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL

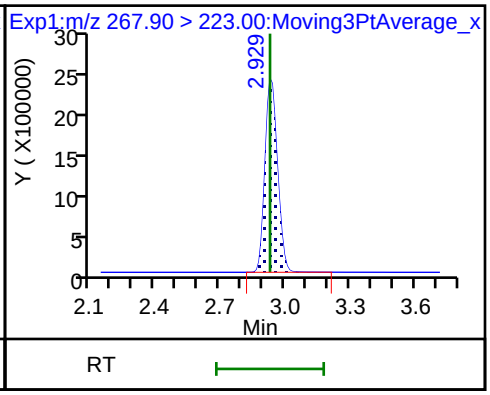
D 1 13C4 PFBA



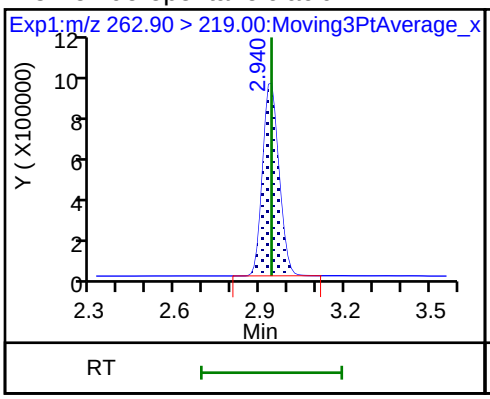
2 Perfluorobutanoic acid



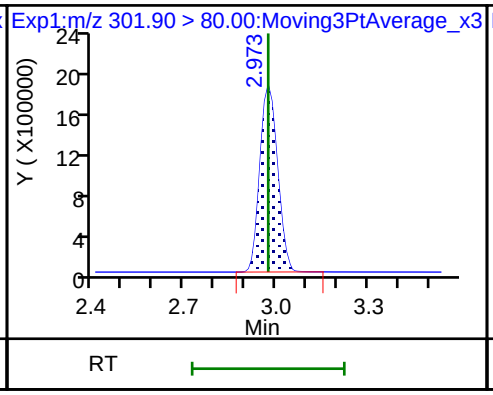
D 4 13C5 PFPeA



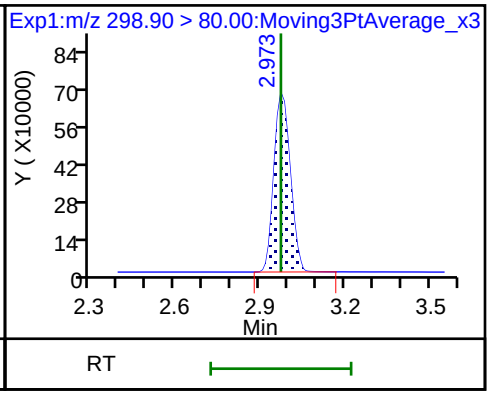
5 Perfluoropentanoic acid



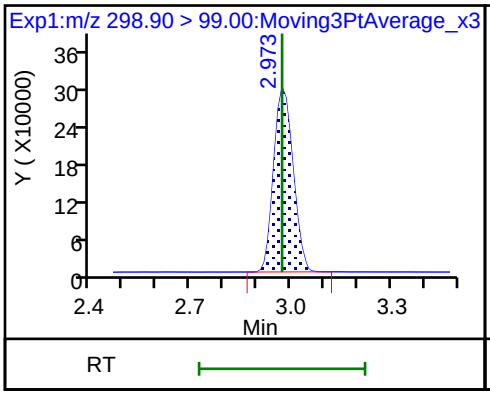
D 9 13C3 PFBS



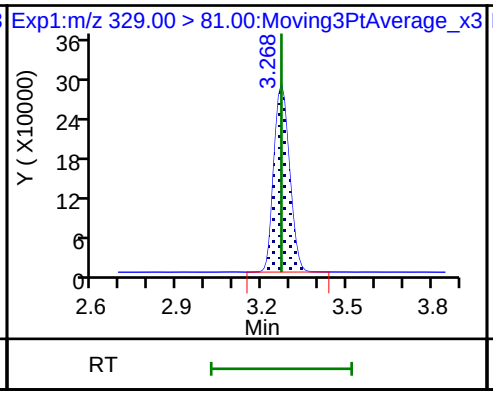
6 Perfluorobutanesulfonic acid



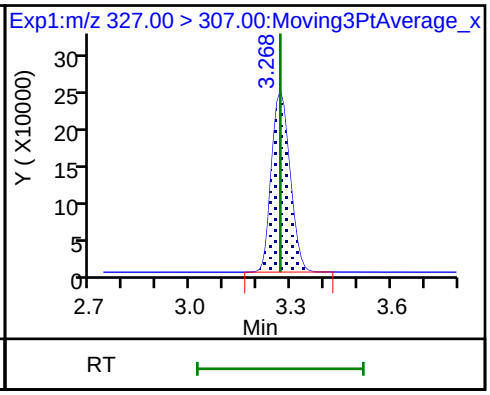
6 Perfluorobutanesulfonic acid



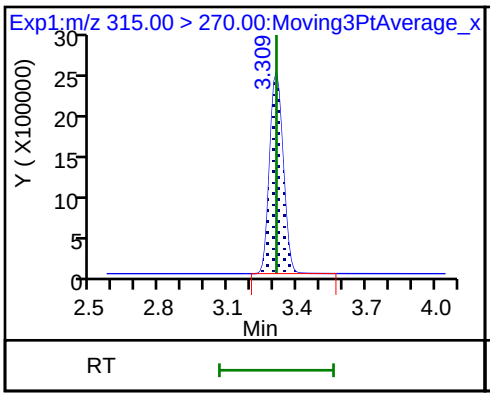
D 7 M2-4:2 FTS



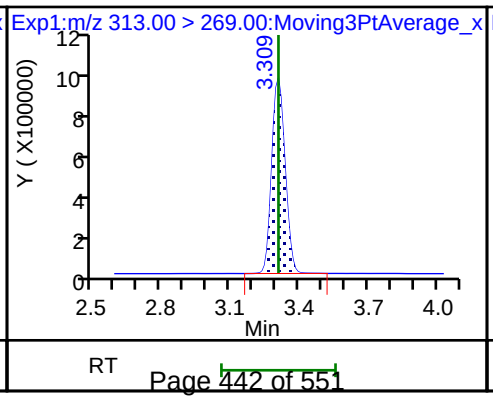
8 4:2 FTS



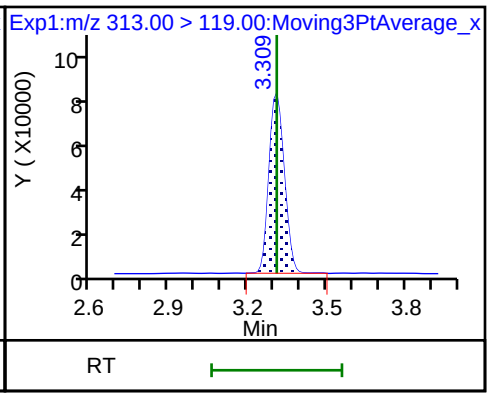
D 11 13C2 PFHxA



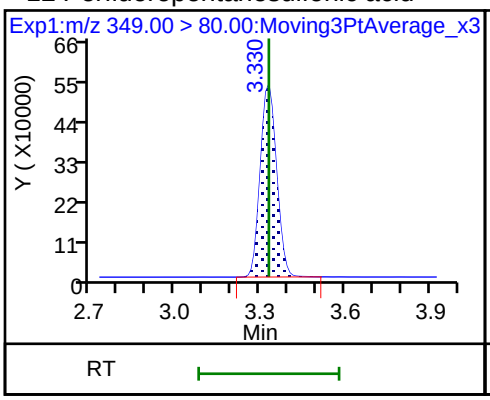
10 Perfluorohexanoic acid



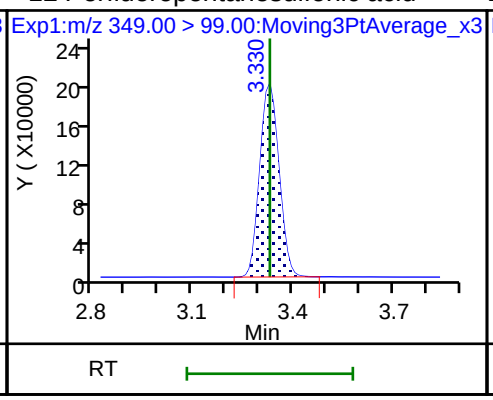
10 Perfluorohexanoic acid



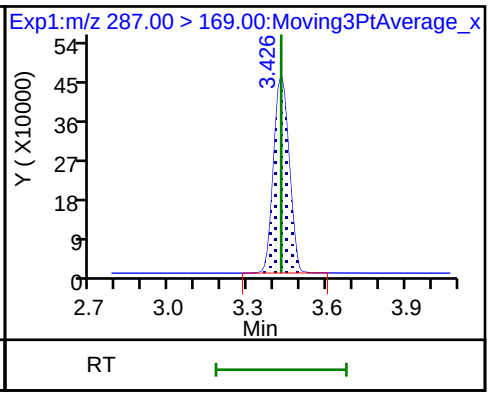
12 Perfluoropentanesulfonic acid



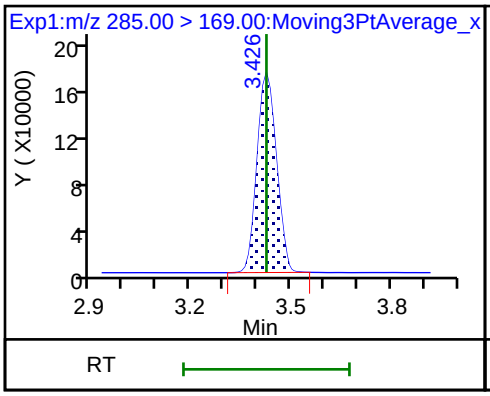
12 Perfluoropentanesulfonic acid



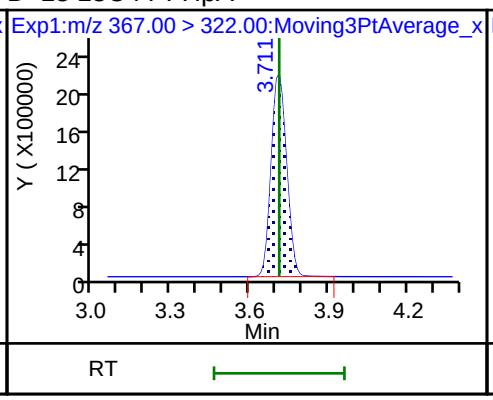
D 14 13C3 HFPO-DA



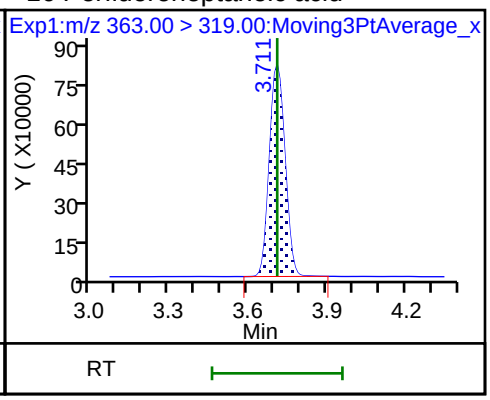
13 HPFO-DA



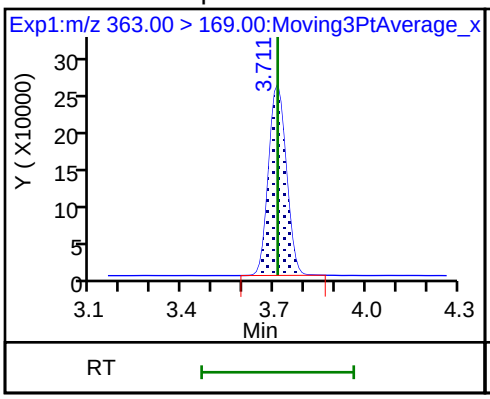
D 18 13C4 PFHpA



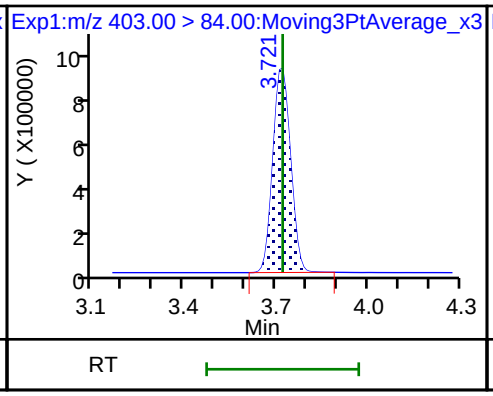
16 Perfluoroheptanoic acid



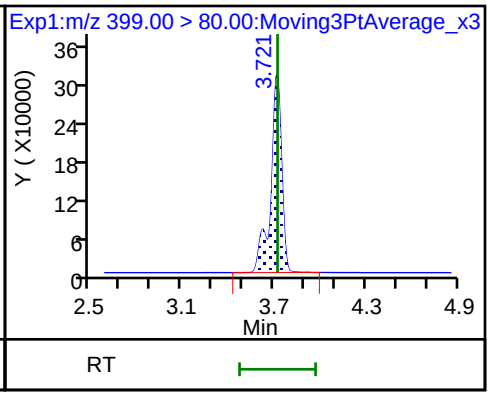
16 Perfluoroheptanoic acid



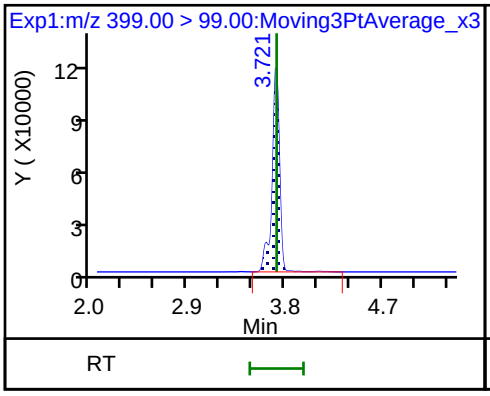
D 17 18O2 PFHxS



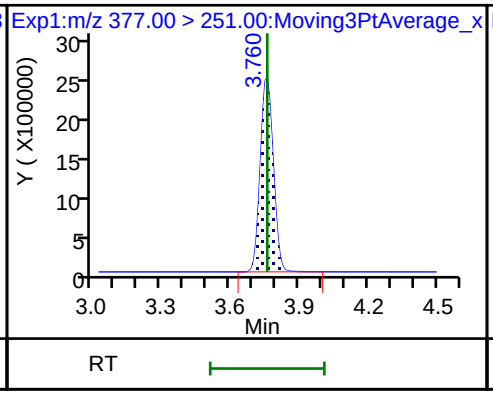
15 Perfluorohexanesulfonic acid



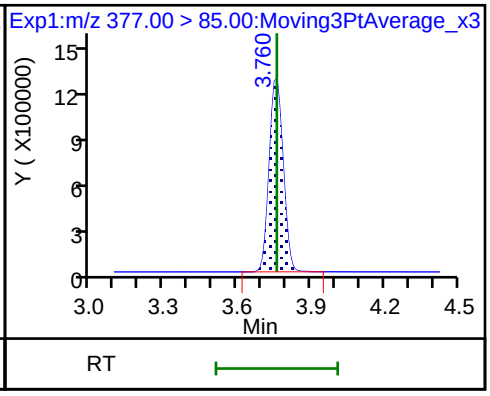
15 Perfluorohexanesulfonic acid



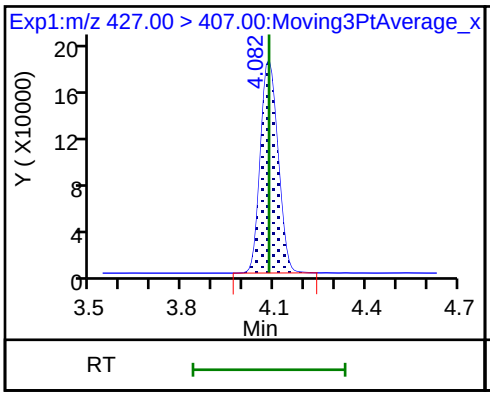
19 DONA



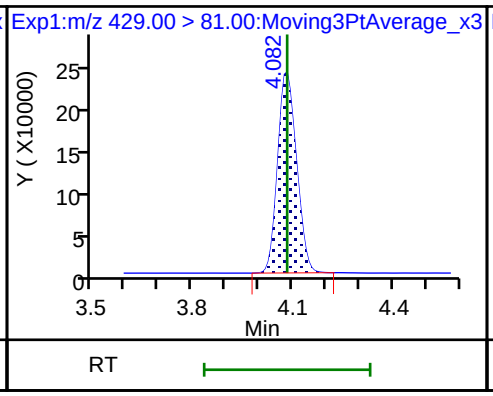
19 DONA



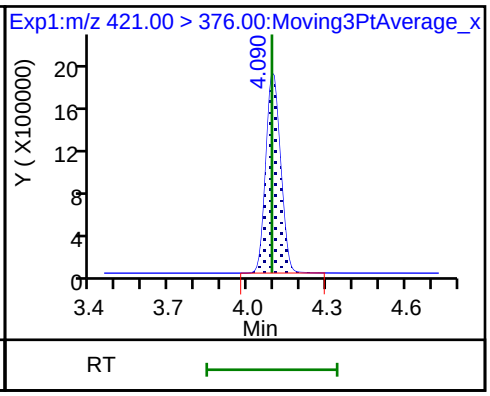
21 6:2 FTS



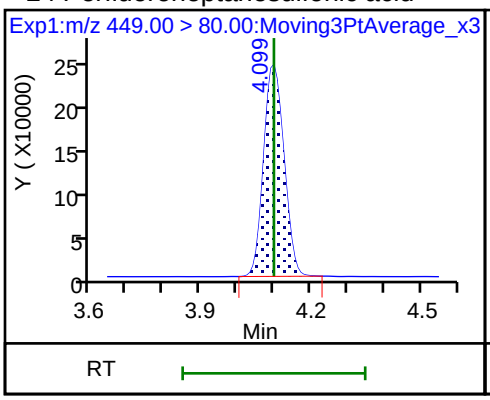
D 20 M2-6:2 FTS



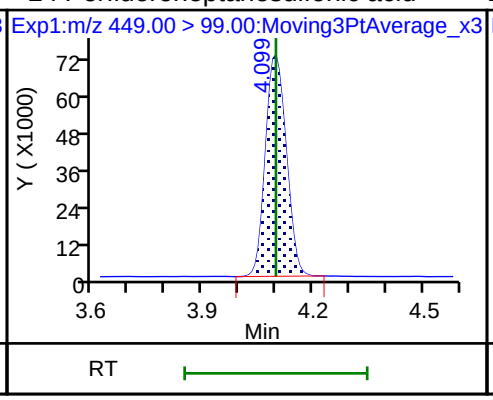
$ 26 13C8 PFOA



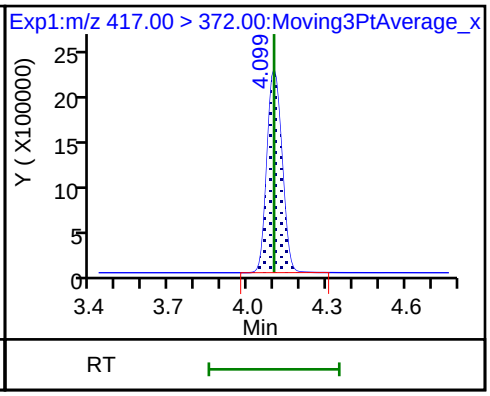
24 Perfluoroheptanesulfonic acid



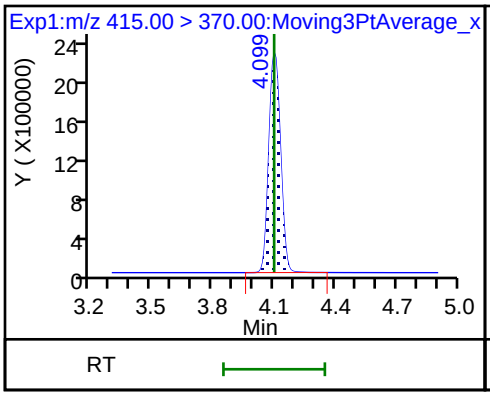
24 Perfluoroheptanesulfonic acid



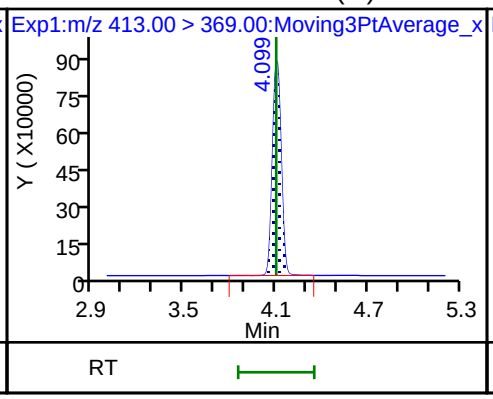
D 25 13C4 PFOA



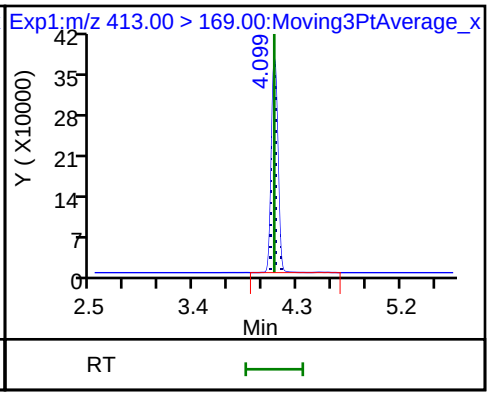
* 23 13C2 PFOA



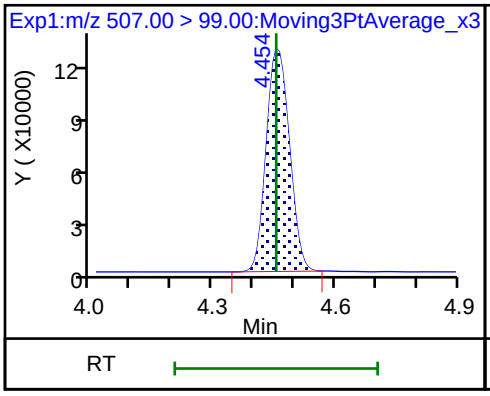
22 Perfluorooctanoic acid (M)



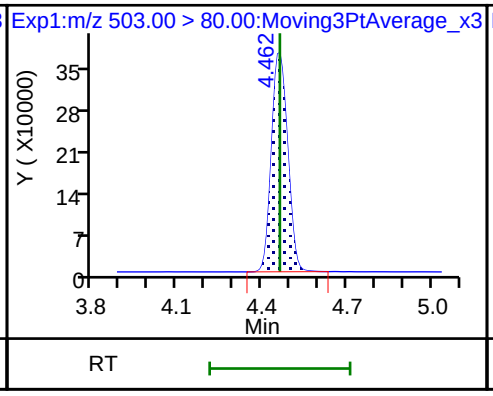
22 Perfluorooctanoic acid



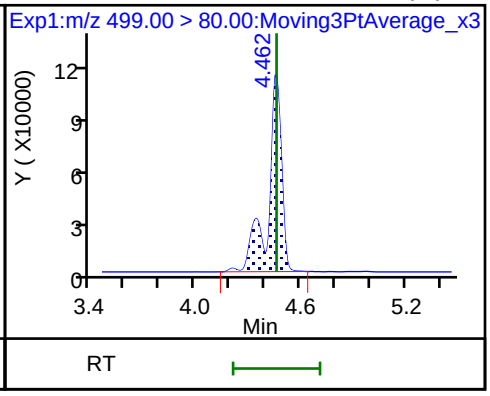
$ 28 13C8 PFOS



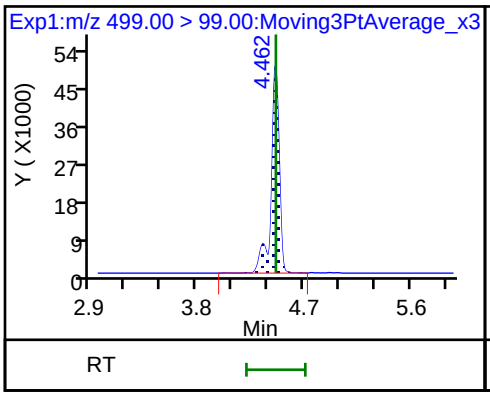
D 27 13C4 PFOS



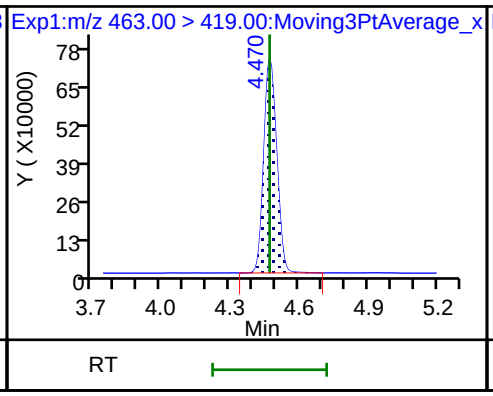
29 Perfluorooctanesulfonic acid (M)



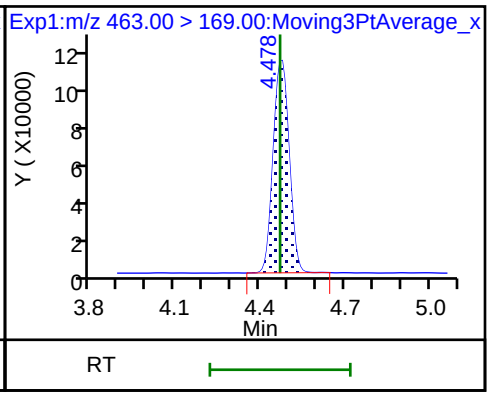
29 Perfluorooctanesulfonic acid



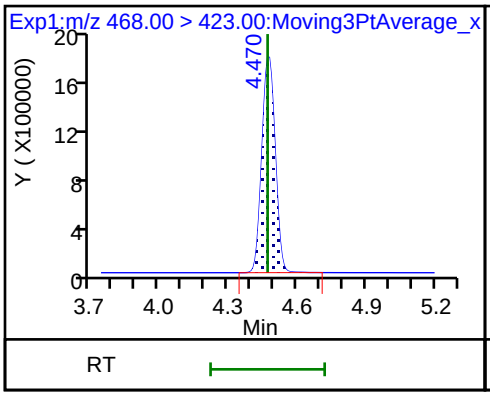
31 Perfluorononanoic acid



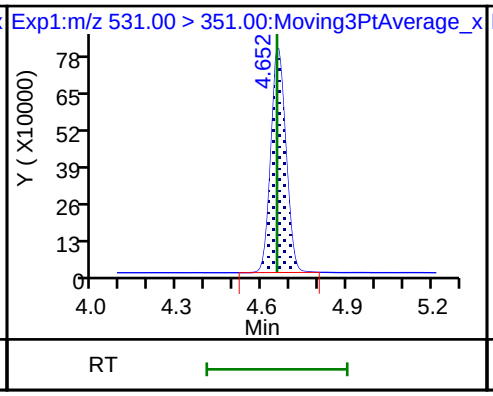
31 Perfluorononanoic acid



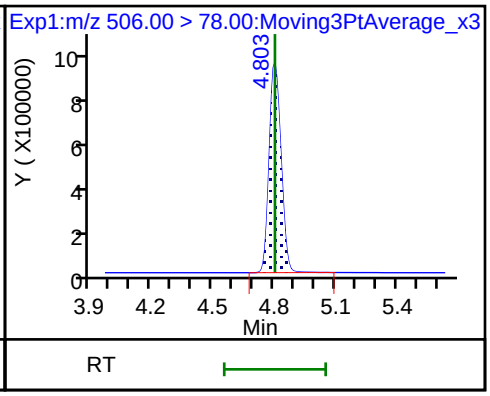
D 30 13C5 PFNA



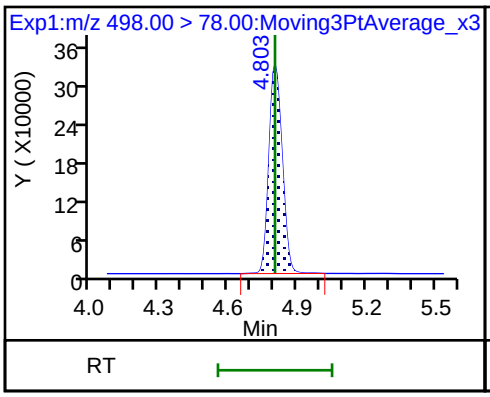
32 9ClFOS



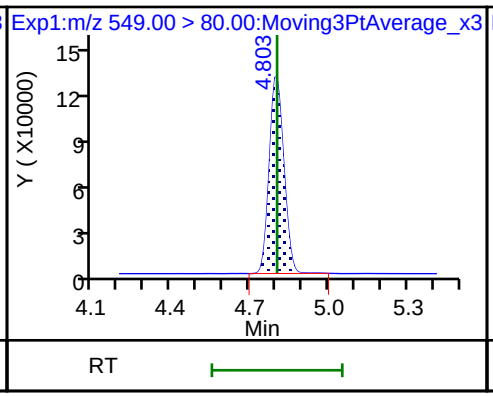
D 33 13C8 FOSA



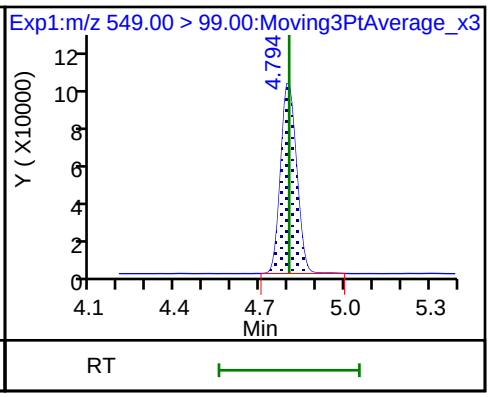
34 Perfluorooctanesulfonamide



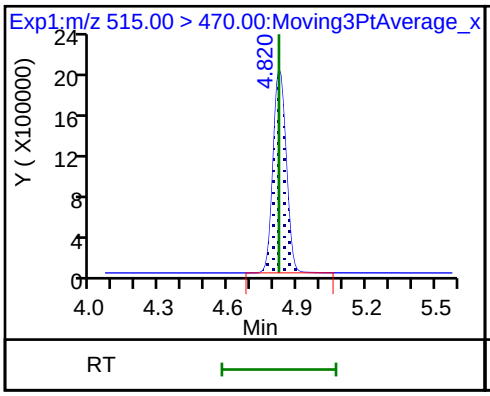
35 Perfluorononanesulfonic acid



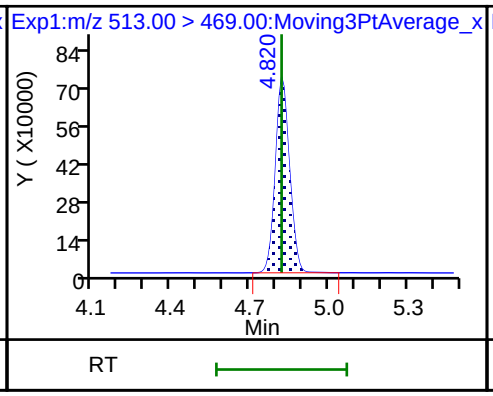
35 Perfluorononanesulfonic acid



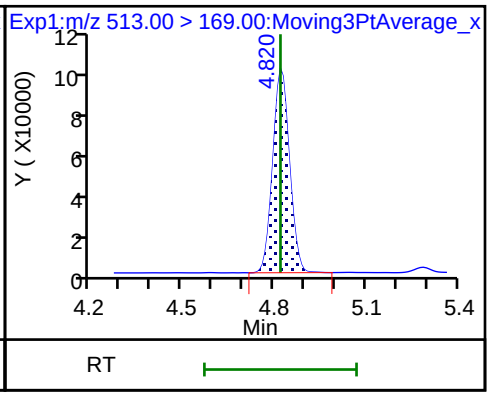
D 39 13C2 PFDA



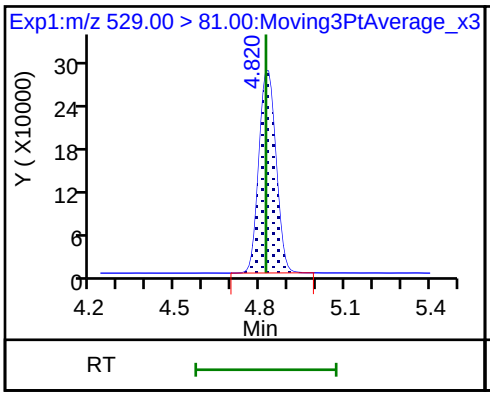
37 Perfluorodecanoic acid



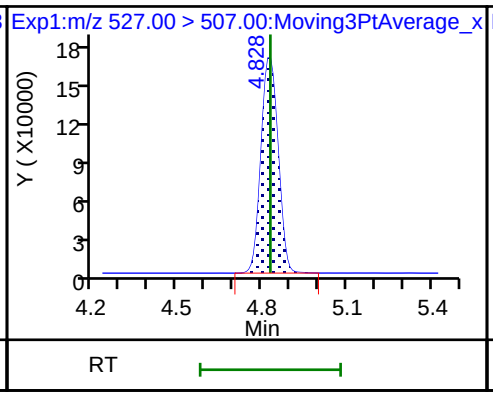
37 Perfluorodecanoic acid



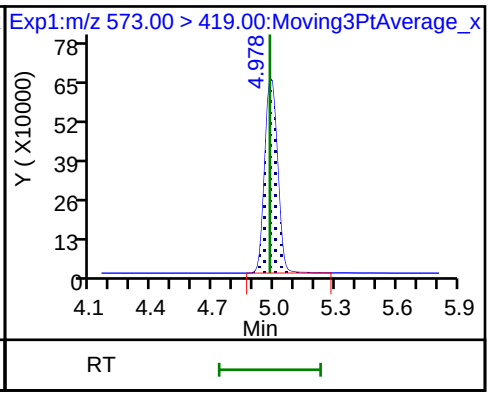
D 38 M2-8:2 FTS



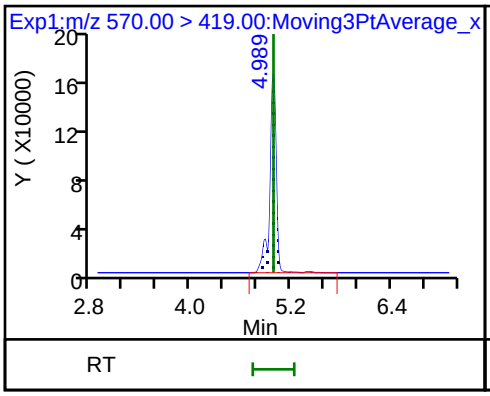
36 8:2 FTS



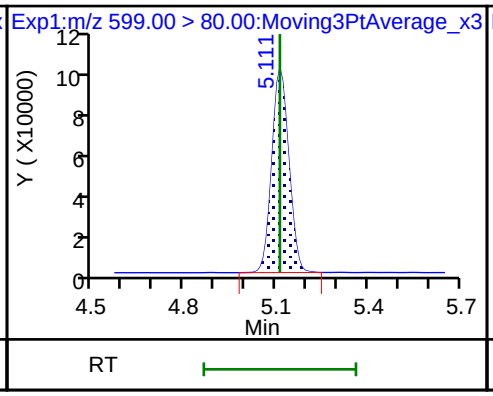
D 40 d3-NMeFOSAA



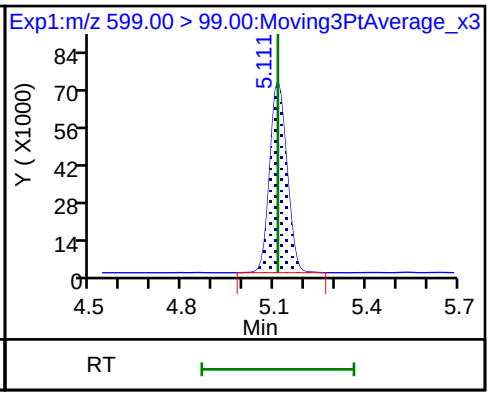
41 NMeFOSAA



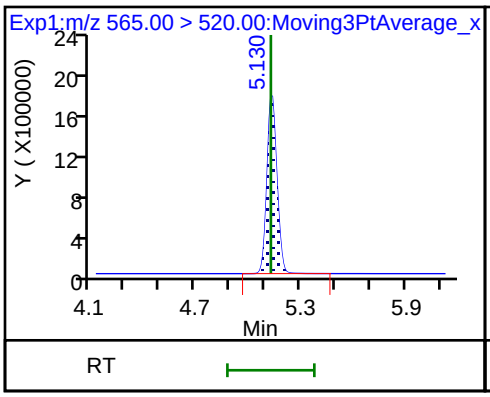
42 Perfluorodecanesulfonic acid



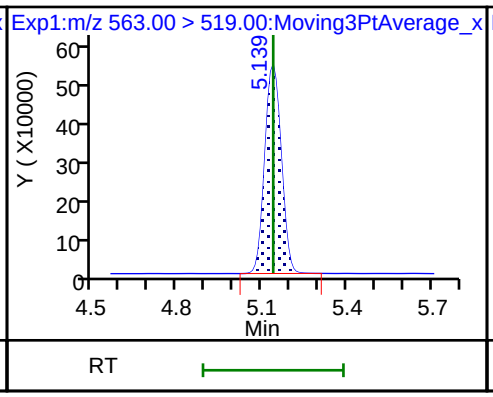
42 Perfluorodecanesulfonic acid



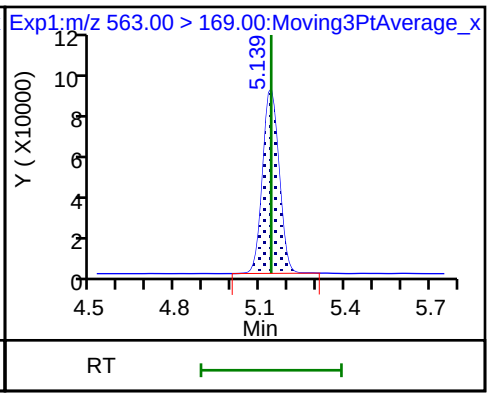
D 43 13C2 PFUnA



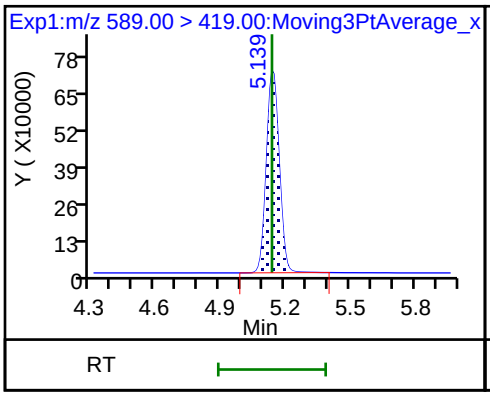
45 Perfluoroundecanoic acid



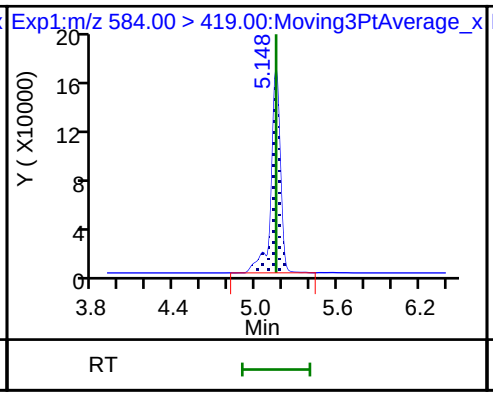
45 Perfluoroundecanoic acid



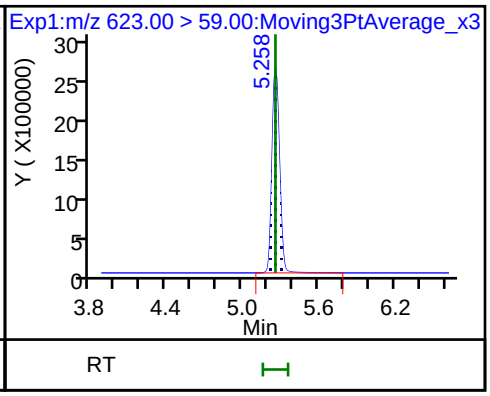
D 44 d5-NEtFOSAA



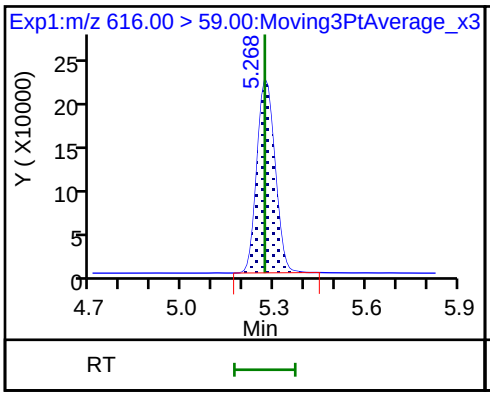
46 NEtFOSA



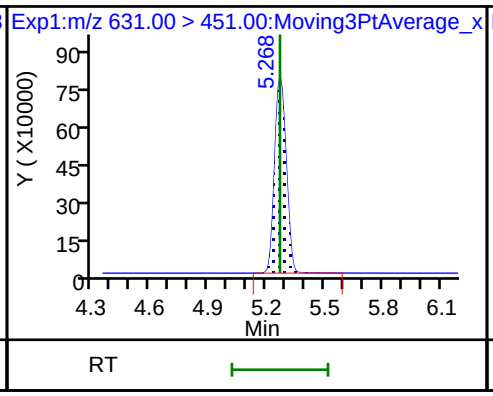
D 47 d7-N-MeFOSE-M



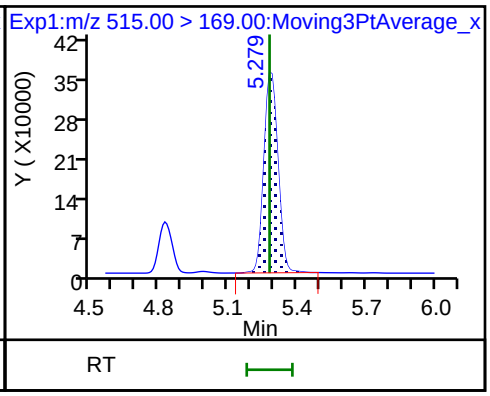
48 N-MeFOSE-M



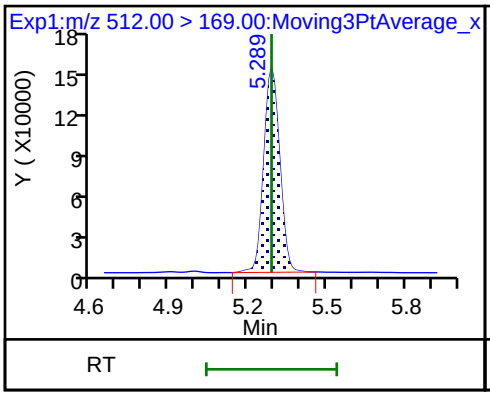
51 11ClFOS



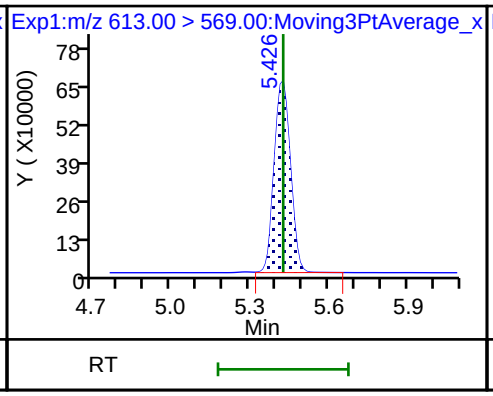
D 49 d-N-MeFOSA-M



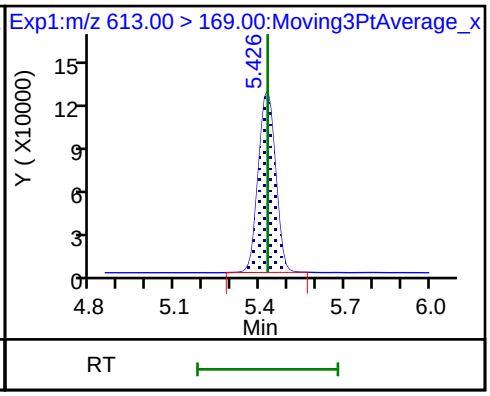
50 NMeFOSA



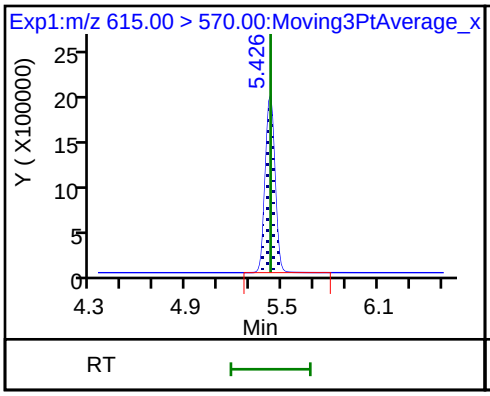
57 Perfluorododecanoic acid



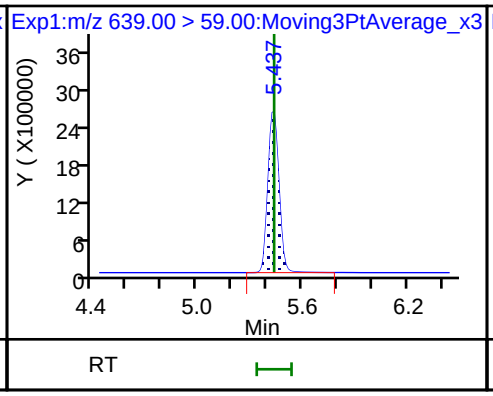
57 Perfluorododecanoic acid



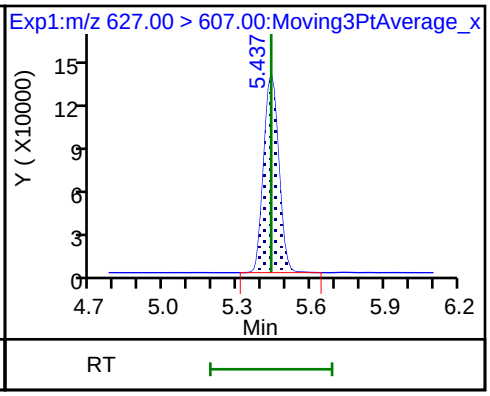
D 56 13C2 PFDoA



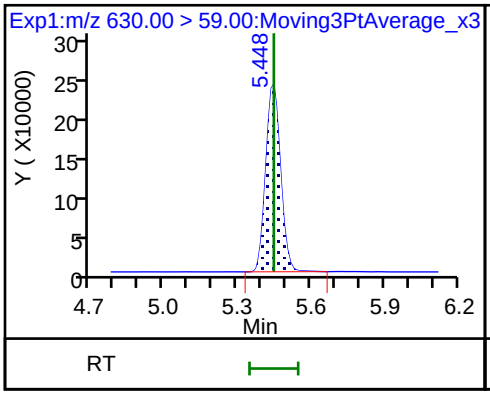
D 52 d9-N-EtFOSE-M



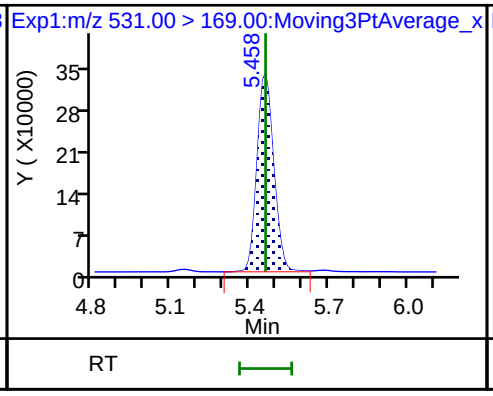
58 10:2 FTS



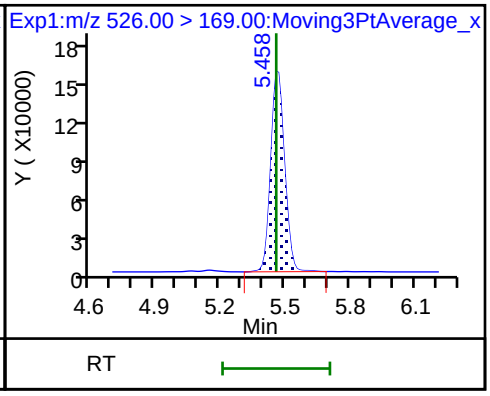
53 N-EtFOSE-M



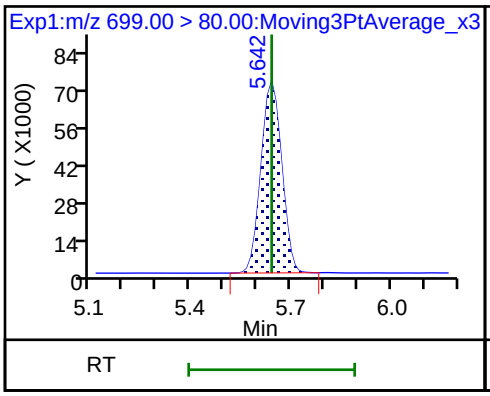
D 54 d-N-EtFOSA-M



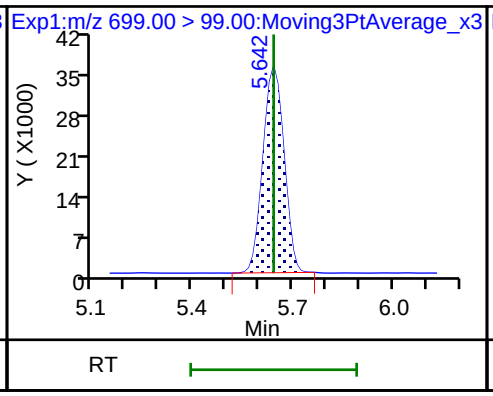
55 N-EtFOSA-M



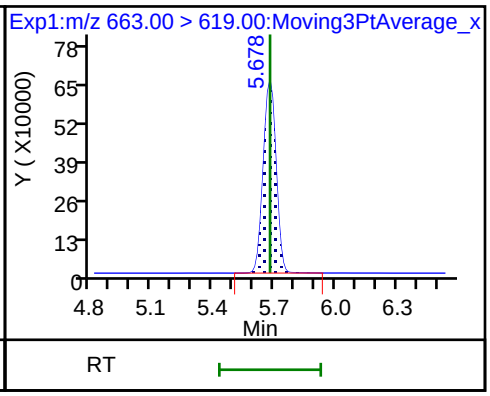
59 PFDoS



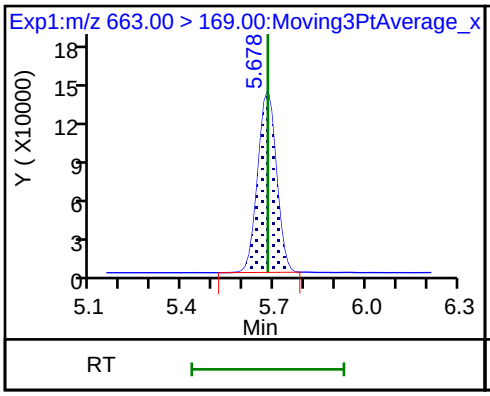
59 PFDoS



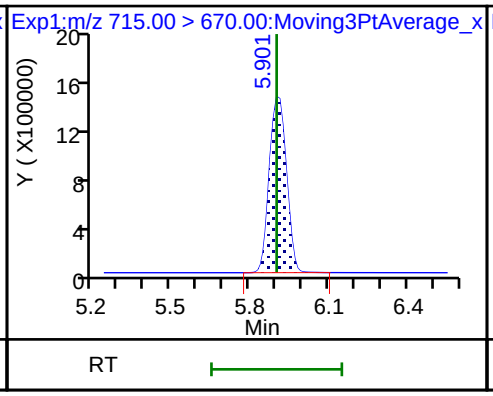
60 Perfluorotridecanoic acid



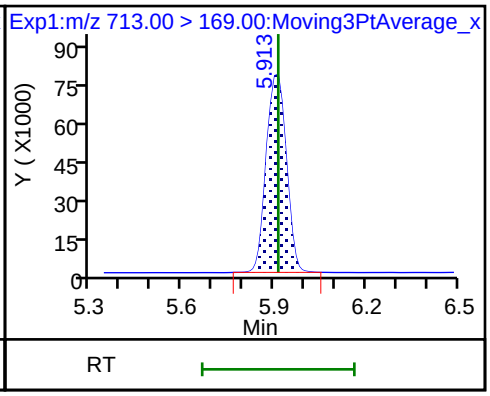
60 Perfluorotridecanoic acid



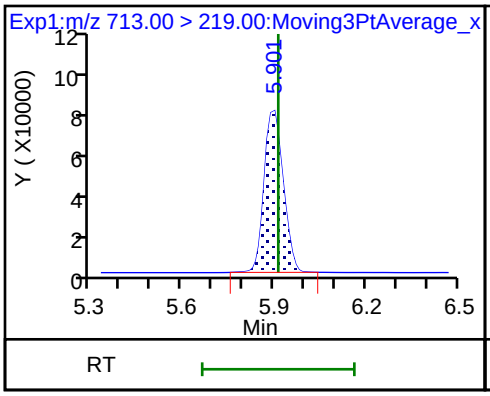
D 61 13C2 PFTeDA



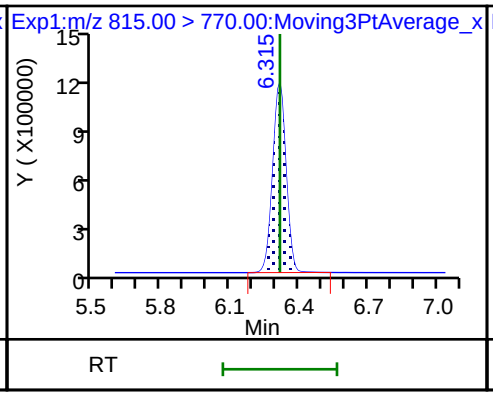
62 Perfluorotetradecanoic acid



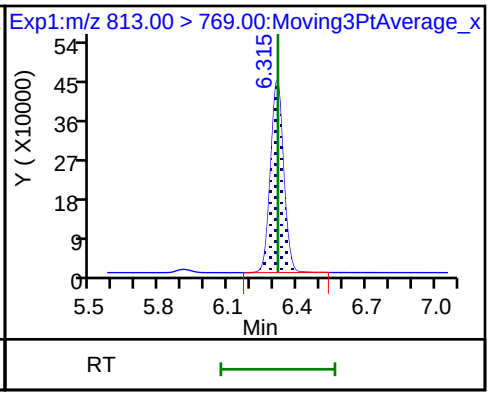
62 Perfluorotetradecanoic acid



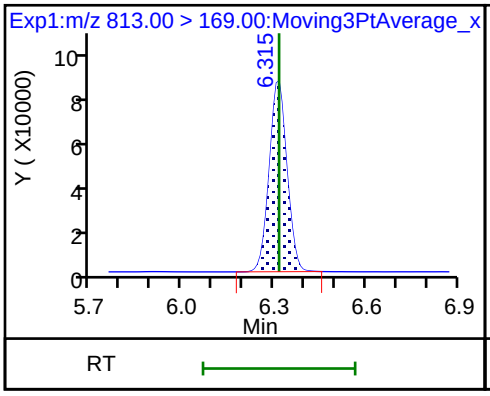
D 64 13C2 PFHxDA



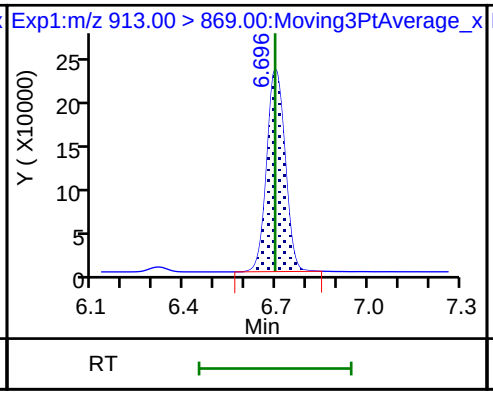
63 Perfluorohexadecanoic acid



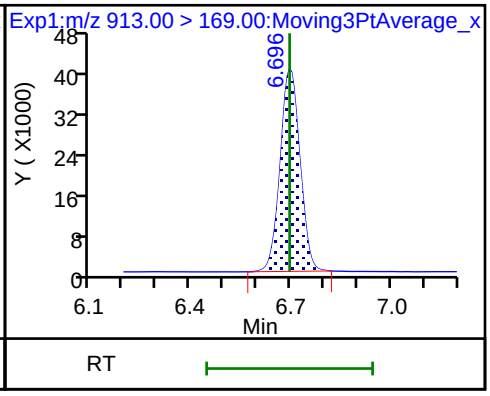
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

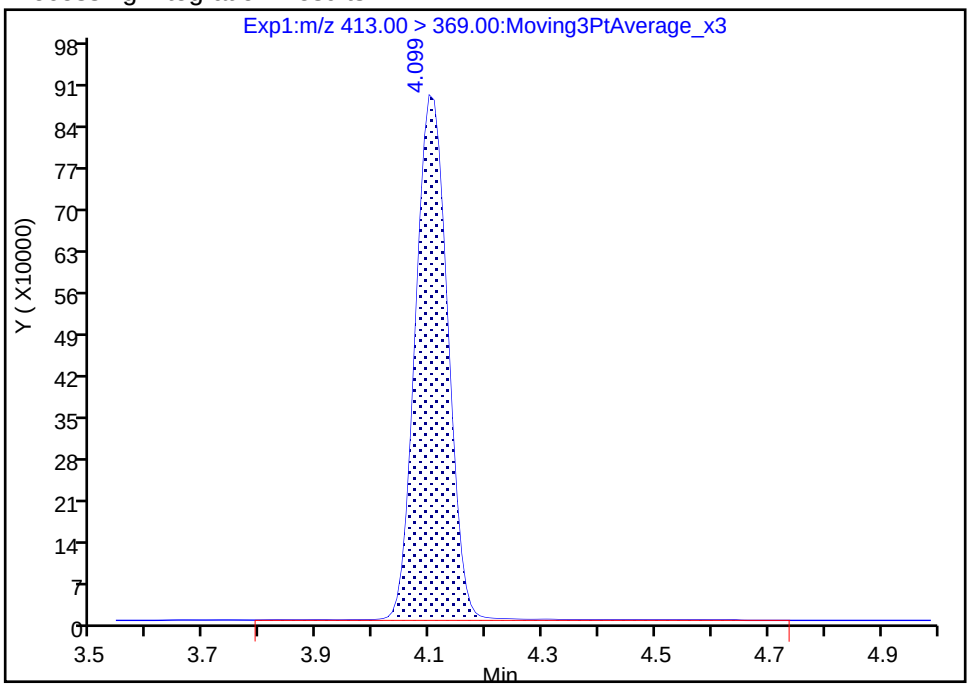
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_006.d
Injection Date: 04-Jun-2020 09:38:55 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 4
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

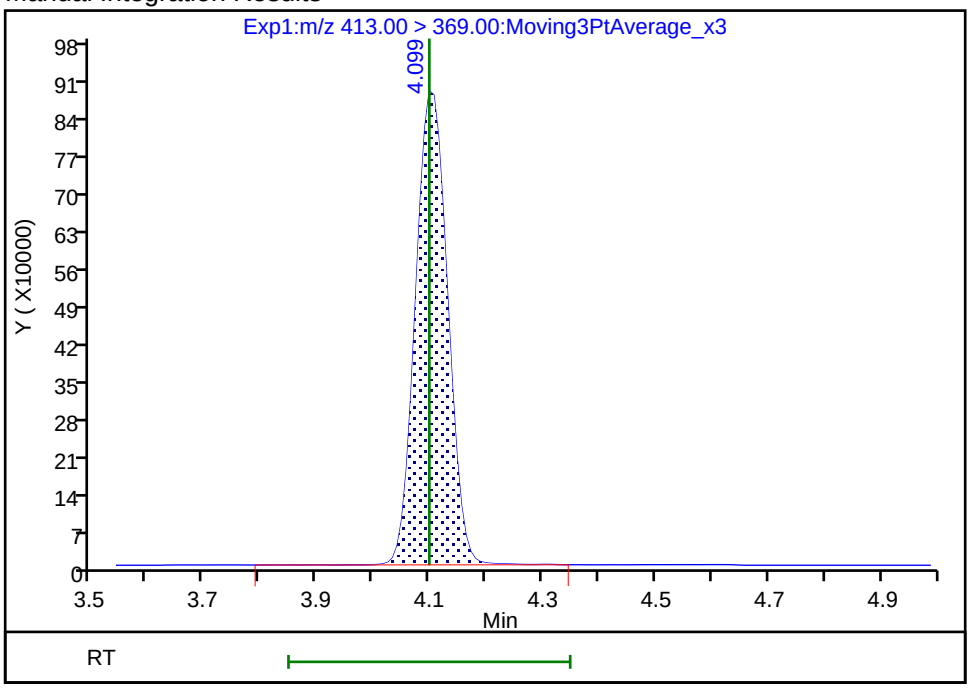
Processing Integration Results

RT: 4.10
Area: 3543480
Amount: 0.989550
Amount Units: ng/ml



Manual Integration Results

RT: 4.10
Area: 3503116
Amount: 0.978278
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:15:14
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

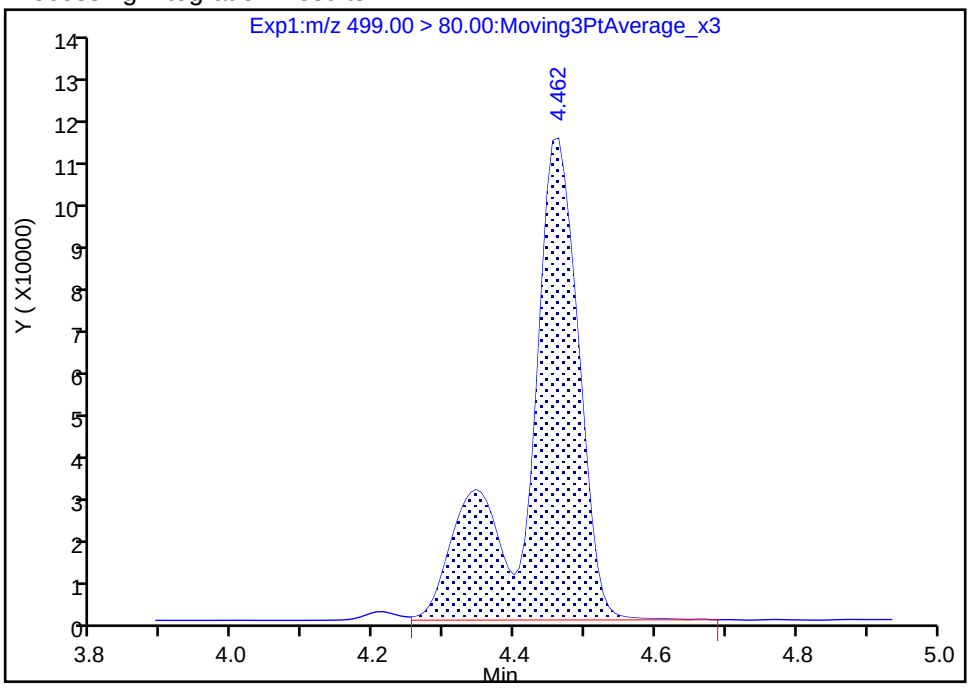
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_006.d				
Injection Date:	04-Jun-2020 09:38:55	Instrument ID:	A18		
Lims ID:	CCV L4				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	52	Worklist Smp#:	4
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

29 Perfluorooctanesulfonic acid, CAS: 1763-23-1

Signal: 1

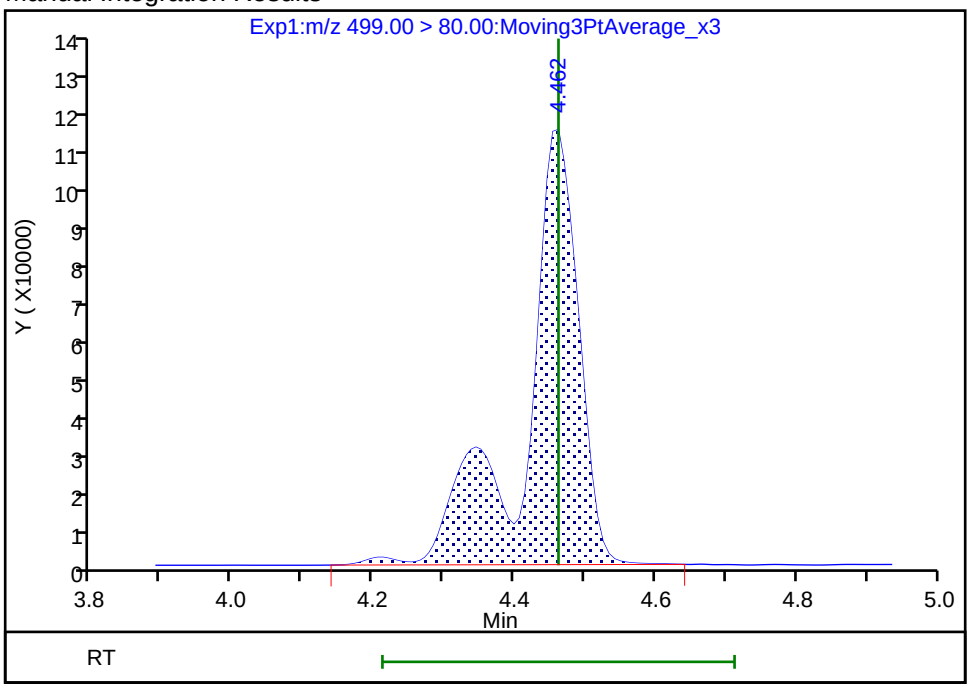
Processing Integration Results

RT: 4.46
Area: 583505
Amount: 0.940356
Amount Units: ng/ml



Manual Integration Results

RT: 4.46
Area: 588160
Amount: 0.947858
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:15:21

Audit Action: Manually Integrated Audit Reason: Isomers

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383436/12 Calibration Date: 06/04/2020 10:53

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.04_A18_PFC_AA_031.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8517	0.8975		2.63	2.50	5.4	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9630	0.9834		2.55	2.50	2.1	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9751	1.003		2.27	2.21	2.8	50.0
4:2 FTS	AveID	2.096	2.184		2.43	2.34	4.2	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9300	0.9219		2.48	2.50	-0.9	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7168	0.7365		2.41	2.35	2.8	50.0
HFPO-DA (GenX)	AveID	0.9456	0.9515		2.52	2.50	0.6	40.0
Perfluoroheptanoic acid	AveID	0.9856	1.026		2.60	2.50	4.1	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.151	1.149		2.27	2.28	-0.2	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	15.91	16.07		2.38	2.36	1.0	50.0
6:2 FTS	AveID	2.003	2.126		2.52	2.37	6.1	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.514	1.533		2.41	2.38	1.3	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.013	1.007		2.49	2.50	-0.6	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.009	1.024		2.36	2.32	1.5	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9614	0.9833		2.56	2.50	2.3	40.0
F-53B Major	AveID	4.948	5.107		2.40	2.33	3.2	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7814	0.8102		2.49	2.40	3.7	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9186	0.9595		2.61	2.50	4.5	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.8950	0.9870		2.76	2.50	10.3	40.0
8:2 FTS	AveID	1.536	1.572		2.45	2.40	2.4	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7080	0.7536		2.66	2.50	6.4	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5780	0.6151		2.56	2.41	6.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7407	0.7463		2.52	2.50	0.8	40.0
NEtFOSAA	AveID	0.7021	0.6768		2.41	2.50	-3.6	40.0
F-53B Minor	AveID	5.427	5.537		2.40	2.36	2.0	50.0
NMeFOSE	AveID	0.9823	1.018		2.59	2.50	3.7	40.0
NMeFOSA	AveID	0.9235	1.063		2.88	2.50	15.1	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9313	0.999		2.68	2.50	7.3	40.0
10:2 FTS	AveID	1.215	1.266		2.51	2.41	4.2	50.0
NEtFOSE	AveID	1.004	1.066		2.65	2.50	6.2	40.0
NEtFOSA	AveID	1.045	1.157		2.77	2.50	10.7	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.5352	0.5219		2.36	2.42	-2.5	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8742	0.8655		2.47	2.50	-1.0	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383436/12 Calibration Date: 06/04/2020 10:53

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.04_A18_PFC_AA_031.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1331	0.1441		2.70	2.50	8.2	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8905		2.53	2.50	1.3	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5363	0.5302		2.47	2.50	-1.1	50.0
13C4 PFBA	Ave	1.247	1.265		2.54	2.50	1.4	50.0
13C5 PFPeA	Ave	1.118	1.118		2.50	2.50	-0.0	50.0
13C3 PFBS	Ave	0.8747	0.9499		2.52	2.33	8.6	50.0
M2-4:2 FTS	Ave	0.1422	0.1491		2.45	2.34	4.9	50.0
13C2 PFHxA	Ave	1.114	1.183		2.66	2.50	6.3	50.0
13C3 HFPO-DA	Ave	0.2176	0.2291		2.63	2.50	5.3	50.0
13C4 PFHpA	Ave	0.9885	1.016		2.57	2.50	2.8	50.0
18O2 PFHxS	Ave	0.4173	0.4338		2.46	2.37	3.9	50.0
M2-6:2 FTS	Ave	0.1146	0.1179		2.44	2.38	2.8	50.0
13C4 PFOA	Ave	0.9904	0.9869		2.49	2.50	-0.3	50.0
13C4 PFOS	Ave	0.1771	0.1916		2.58	2.39	8.2	50.0
13C5 PFNA	Ave	0.8069	0.8361		2.59	2.50	3.6	50.0
13C8 FOSA	Ave	0.3929	0.4049		2.58	2.50	3.1	50.0
13C2 PFDA	Ave	0.8716	0.8618		2.47	2.50	-1.1	50.0
M2-8:2 FTS	Ave	0.1448	0.1453		2.40	2.40	0.3	50.0
d3-NMeFOSAA	Ave	0.3238	0.3292		2.54	2.50	1.7	50.0
13C2 PFUnA	Ave	0.8155	0.8910		2.73	2.50	9.3	50.0
d5-NEtFOSAA	Ave	0.3303	0.3361		2.54	2.50	1.7	50.0
d7-N-MeFOSE-M	Ave	0.2336	0.2393		12.8	12.5	2.5	50.0
d-N-MeFOSA-M	Ave	0.1846	0.1884		2.55	2.50	2.1	50.0
13C2 PFDoA	Ave	0.8615	0.9374		2.72	2.50	8.8	50.0
d9-N-EtFOSE-M	Ave	0.2653	0.2723		12.8	12.5	2.7	50.0
d-N-EtFOSA-M	Ave	0.1896	0.1859		2.45	2.50	-2.0	50.0
13C2 PFTeDA	Ave	0.7207	0.7435		2.58	2.50	3.2	50.0
13C2 PFHxDA	Ave	0.5104	0.5461		2.67	2.50	7.0	50.0
13C8 PFOA	Ave	0.8173	0.8596		2.57	2.45	5.2	50.0
13C8 PFOS	Ave	0.0612	0.0651		2.54	2.39	6.3	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_AA_031.d
Lims ID: CCV L5
Client ID:
Sample Type: CCV
Inject. Date: 04-Jun-2020 10:53:06 ALS Bottle#: 53 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L5
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 08:27:36 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: nadonp Date: 05-Jun-2020 08:27:36
Ratio Calibration: Average of Initial Calibration

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	2.563	2.565	-0.002	0.626	10211135	2.54		101	7973	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.571	2.573	-0.002	1.003	9164687	2.63		105	1062	
D 4 13C5 PFPeA										
267.90 > 223.00	2.927	2.929	-0.002	0.715	9024532	2.50		100	4019	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.927	2.940	-0.013	1.000	8874550	2.55		102	387	
D 9 13C3 PFBS										
301.90 > 80.00	2.971	2.973	-0.002	0.725	7129770	2.52		109	4975	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.971	2.973	-0.002	1.000	6795478	2.27	Target=2.25	103	3153	
298.90 > 99.00	2.971	2.973	-0.002	1.000	2963289		2.29(1.13-3.38)		1294	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.266	3.268	-0.002	0.797	1124039	2.45		105	1193	
8 4:2 FTS										
327.00 > 307.00	3.266	3.268	-0.002	1.000	2455329	2.43		104	5944	
D 11 13C2 PFHxA										
315.00 > 270.00	3.307	3.309	-0.002	0.807	9550996	2.66		106	5736	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.307	3.309	-0.002	1.000	8805340	2.48	Target=11.49	99.1	632	
313.00 > 119.00	3.307	3.309	-0.002	1.000	764990		11.51(5.74-17.23)		513	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.328	3.330	-0.002	1.120	5296486	2.41	Target=2.74	103	2400	
349.00 > 99.00	3.328	3.330	-0.002	1.120	2000684		2.65(1.37-4.12)		2807	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.424	3.426	-0.002	0.836	1848700	2.63		105	3987	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.424	3.426	-0.002	1.000	1759026	2.52		101	3833	
D 18 13C4 PFHpA										
367.00 > 322.00	3.706	3.711	-0.005	0.905	8197825	2.57		103	5549	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.706	3.711	-0.005	1.000	8407596	2.60	Target=3.25	104	1600	
363.00 > 169.00	3.706	3.711	-0.005	1.000	2584316		3.25(1.62-4.87)		2343	
D 17 18O2 PFHxS										
403.00 > 84.00	3.716	3.721	-0.005	0.907	3311870	2.46		104	4153	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.716	3.721	-0.005	1.000	3660019	2.27	Target=2.90	99.8	2730	
399.00 > 99.00	3.716	3.721	-0.005	1.000	1246063		2.94(1.45-4.35)		2450	
19 DONA										
377.00 > 251.00	3.755	3.760	-0.005	0.842	23412125	2.38	Target=2.01	101	8434	
377.00 > 85.00	3.755	3.760	-0.005	0.842	11480664		2.04(1.00-3.01)		6809	
21 6:2 FTS										
427.00 > 407.00	4.080	4.082	-0.002	1.002	1917059	2.52		106	1112	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.072	4.082	-0.010	0.994	903777	2.44		103	1855	
$ 26 13C8 PFOA										
421.00 > 376.00	4.088	4.090	-0.002	0.998	6792541	2.57		105	6309	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.096	4.099	-0.003	0.919	2257245	2.41	Target=3.25	101	2832	
449.00 > 99.00	4.096	4.099	-0.003	0.919	706297		3.20(1.63-4.88)		1542	
D 25 13C4 PFOA										
417.00 > 372.00	4.096	4.099	-0.003	1.000	7965616	2.49		99.7	5839	
* 23 13C2 PFOA										
415.00 > 370.00	4.096	4.099	-0.003		8071088	2.50			4963	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.096	4.099	-0.003	1.000	8019348	2.49	Target=2.35	99.4	2896	
413.00 > 169.00	4.096	4.099	-0.003	1.000	3467811		2.31(1.18-3.53)		6194	
$ 28 13C8 PFOS										
507.00 > 99.00	4.451	4.454	-0.003	1.087	502187	2.54		106	2743	
D 27 13C4 PFOS										
503.00 > 80.00	4.459	4.462	-0.003	1.089	1478278	2.58		108	2885	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.459	4.462	-0.003	1.000	1469645	2.36	Target=2.41	102	1230	
499.00 > 99.00	4.459	4.462	-0.003	1.000	610708		2.41(1.21-3.62)		993	
31 Perfluorononanoic acid										
463.00 > 419.00	4.467	4.470	-0.003	1.000	6635319	2.56	Target=6.74	102	1790	
463.00 > 169.00	4.467	4.470	-0.003	1.000	934599		7.10(3.37-10.11)		1511	
D 30 13C5 PFNA										
468.00 > 423.00	4.467	4.470	-0.003	1.091	6747947	2.59		104	4773	
32 9ClFOS										
531.00 > 351.00	4.651	4.652	-0.001	1.043	7360341	2.40		103	8108	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.792	4.803	-0.011	1.075	1202744	2.49	Target=1.37	104	2261	
549.00 > 99.00	4.792	4.803	-0.011	1.075	887995		1.35(0.69-2.06)		2570	
D 33 13C8 FOSA										
506.00 > 78.00	4.800	4.803	-0.003	1.172	3267824	2.58		103	2353	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.800	4.803	-0.003	1.000	3135536	2.61		104	2924	
D 39 13C2 PFDA										
515.00 > 470.00	4.817	4.820	-0.003	1.176	6955529	2.47		98.9	8913	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.817	4.820	-0.003	1.000	6864973	2.76	Target=8.07	110	4513	
513.00 > 169.00	4.817	4.820	-0.003	1.000	808113		8.50(4.04-12.11)		315	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.817	4.820	-0.003	1.176	1123285	2.40		100	2255	
36 8:2 FTS										
527.00 > 507.00	4.826	4.828	-0.002	1.002	1766012	2.45		102	4601	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.975	4.978	-0.003	1.215	2657009	2.54		102	1776	
41 NMeFOSAA										
570.00 > 419.00	4.986	4.989	-0.003	1.002	2002413	2.66		106	912	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.110	5.111	-0.001	1.146	916882	2.56	Target=1.31	106	2416	
599.00 > 99.00	5.110	5.111	-0.001	1.146	669823		1.37(0.65-1.96)		2296	
D 43 13C2 PFUnA										
565.00 > 520.00	5.137	5.130	0.007	1.254	7191522	2.73		109	6824	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.137	5.139	-0.002	1.000	5367142	2.52	Target=6.70	101	3786	
563.00 > 169.00	5.137	5.139	-0.002	1.000	774517		6.93(3.35-10.05)		2128	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.137	5.139	-0.002	1.254	2712439	2.54		102	1986	
46 NEtFOSA										
584.00 > 419.00	5.146	5.148	-0.002	1.002	1835672	2.41		96.4	938	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.257	5.258	-0.001	1.283	9657815	12.8		102	8672	
48 N-MeFOSE-M										
616.00 > 59.00	5.267	5.268	-0.001	1.002	1966989	2.59		104	3539	
51 11ClFOS										
631.00 > 451.00	5.267	5.268	-0.001	1.181	8065318	2.40		102	4685	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.287	5.279	0.008	1.291	1520707	2.55		102	26.3	
50 NMeFOSA										
512.00 > 169.00	5.287	5.289	-0.002	1.000	1616825	2.88		115	640	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.414	5.426	-0.012	0.998	7560016	2.68	Target=6.20	107	5613	
613.00 > 169.00	5.414	5.426	-0.012	0.998	1238723		6.10(3.10-9.30)		2550	
D 56 13C2 PFDoA										
615.00 > 570.00	5.425	5.426	-0.001	1.324	7566103	2.72		109	9227	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.425	5.437	-0.012	1.324	10989261	12.8		103	2695	
58 10:2 FTS										
627.00 > 607.00	5.436	5.437	-0.001	1.128	1430821	2.51		104	2800	
53 N-EtFOSE-M										
630.00 > 59.00	5.446	5.448	-0.002	1.004	2342184	2.65		106	2463	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.457	5.458	-0.001	1.332	1500662	2.45		98.0	333	
55 N-EtFOSA-M										
526.00 > 169.00	5.468	5.458	0.010	1.002	1736750	2.77		111	475	
59 PFDoS										
699.00 > 80.00	5.640	5.642	-0.002	1.265	781264	2.36	Target=2.11	97.5	2665	
699.00 > 99.00	5.640	5.642	-0.002	1.265	394258		1.98(1.06-3.17)		2104	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.677	5.678	-0.001	1.047	6548137	2.47	Target=4.98	99.0	4732	
663.00 > 169.00	5.677	5.678	-0.001	1.047	1272843		5.14(2.49-7.47)		2543	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.901	5.901	0.0	1.441	6001054	2.58		103	6727	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.901	5.913	-0.012	1.000	864436	2.70	Target=0.96	108	1681	
713.00 > 219.00	5.901	5.913	-0.012	1.000	935844		0.92(0.48-1.43)		3171	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.307	6.315	-0.008	1.540	4407226	2.67		107	7043	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.307	6.315	-0.008	1.000	3924786	2.53	Target=5.10	101	2326	
813.00 > 169.00	6.307	6.315	-0.008	1.000	759550		5.17(2.55-7.64)		3107	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.689	6.696	-0.007	1.061	2336771	2.47	Target=5.50	98.9	1422	
913.00 > 169.00	6.689	6.696	-0.007	1.061	400476		5.83(2.75-8.25)		1842	

Reagents:

LCPFC_LL5_00027 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 08:27:38 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_AA_031.d

Injection Date: 04-Jun-2020 10:53:06 Instrument ID: A18

Lims ID: CCV L5

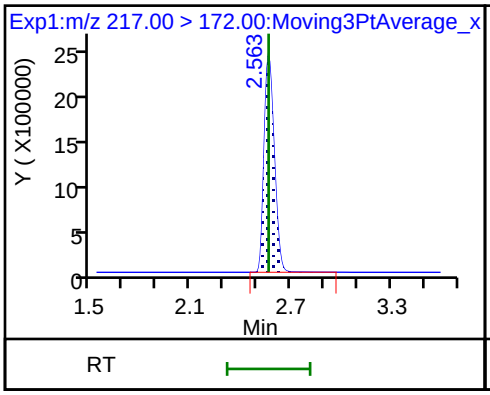
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 53 Worklist Smp#: 12

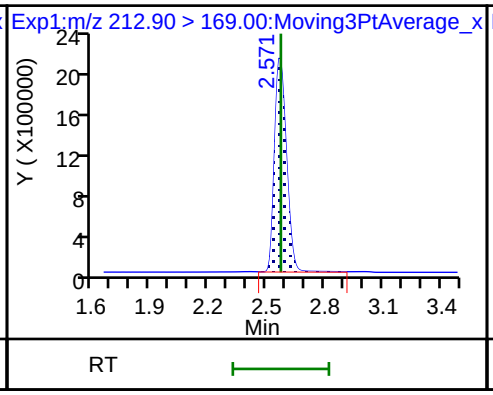
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

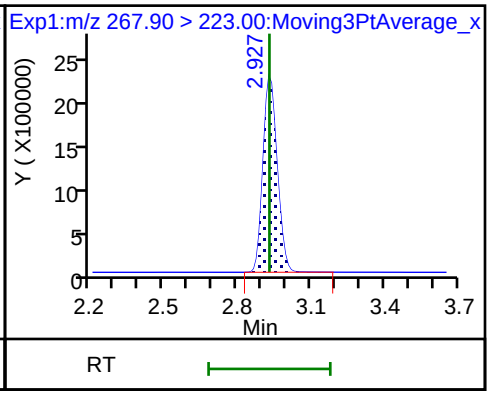
D 1 13C4 PFBA



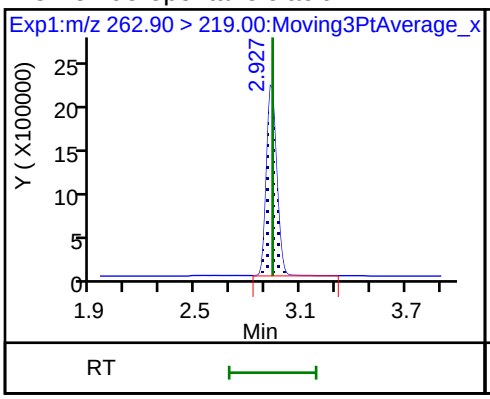
2 Perfluorobutanoic acid



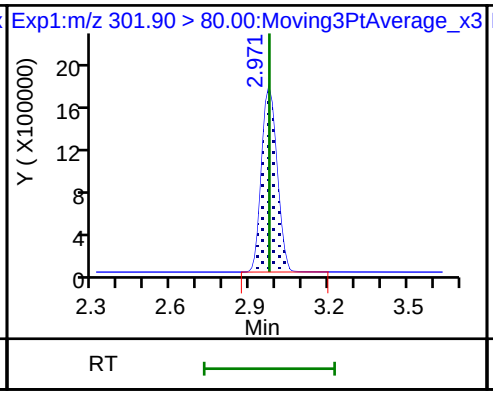
D 4 13C5 PFPeA



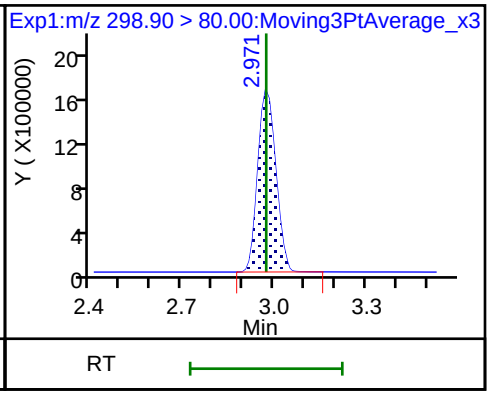
5 Perfluoropentanoic acid



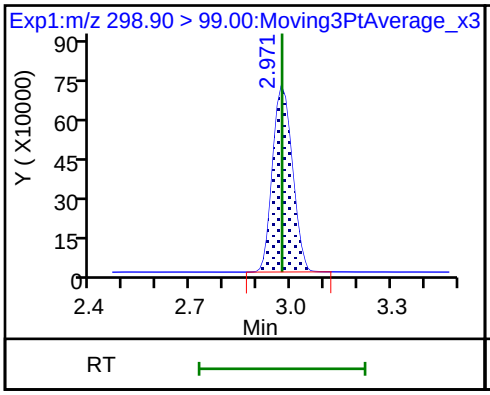
D 9 13C3 PFBS



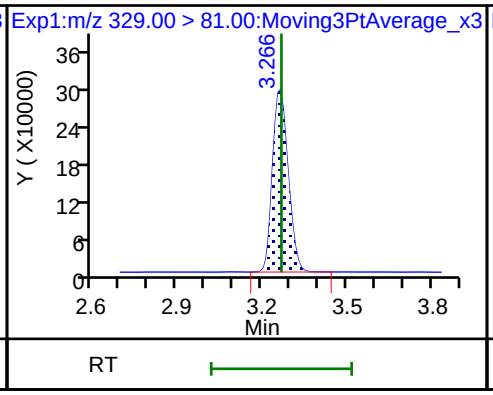
6 Perfluorobutanesulfonic acid



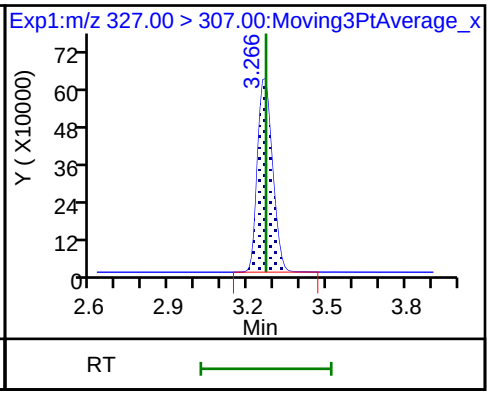
6 Perfluorobutanesulfonic acid



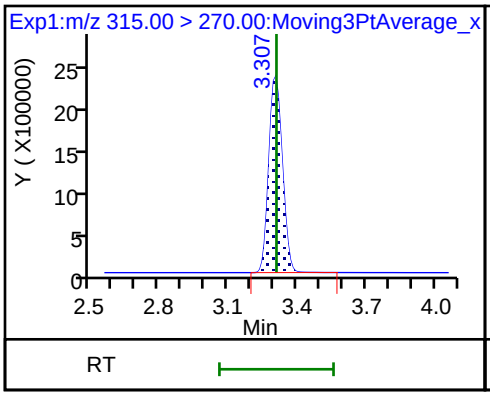
D 7 M2-4:2 FTS



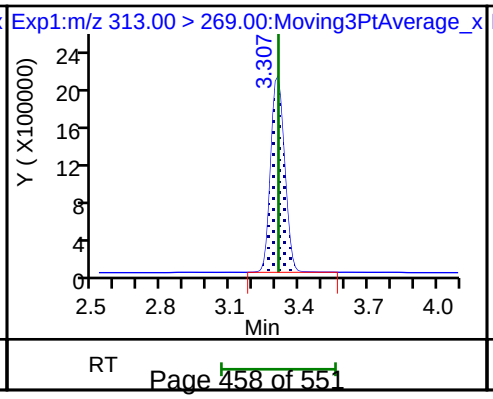
8 4:2 FTS



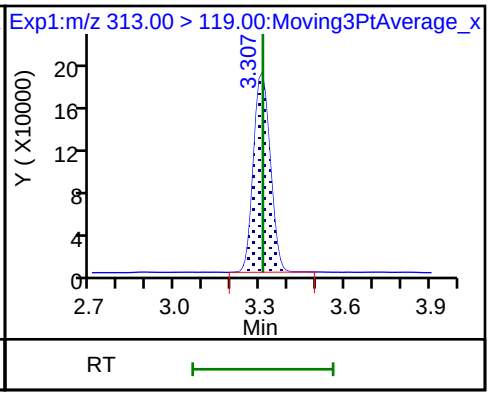
D 11 13C2 PFHxA



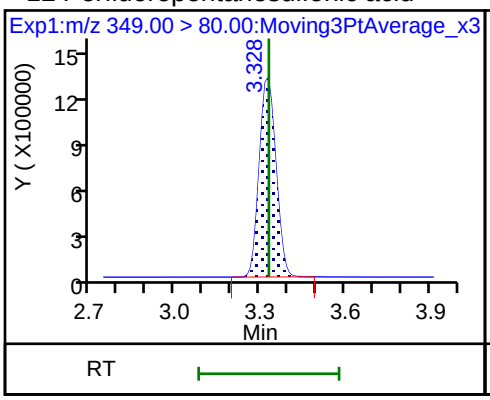
10 Perfluorohexanoic acid



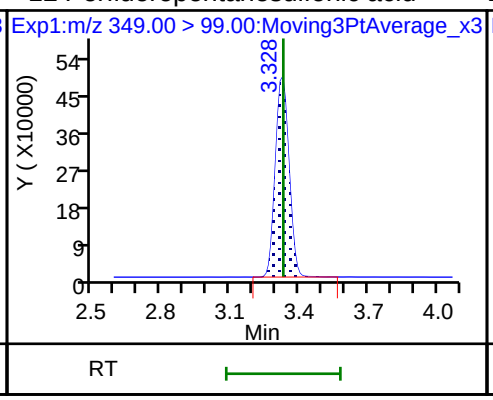
10 Perfluorohexanoic acid



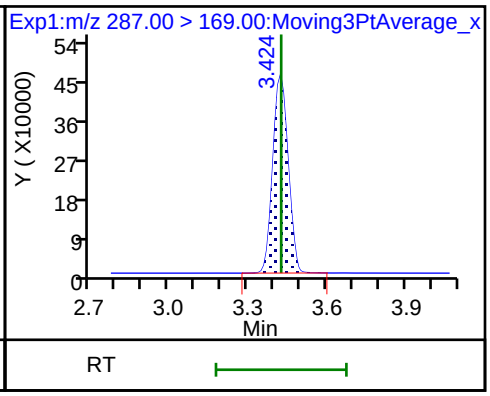
12 Perfluoropentanesulfonic acid



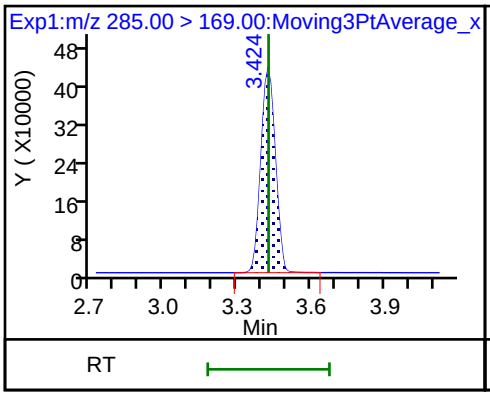
12 Perfluoropentanesulfonic acid



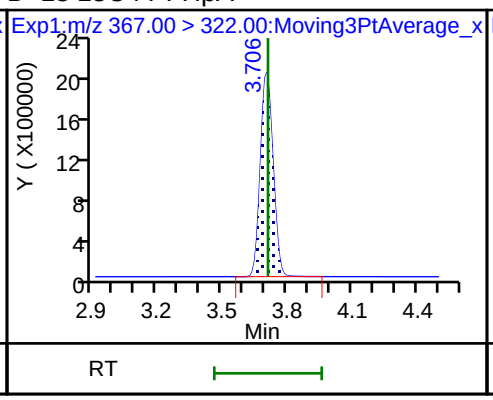
D 14 13C3 HFPO-DA



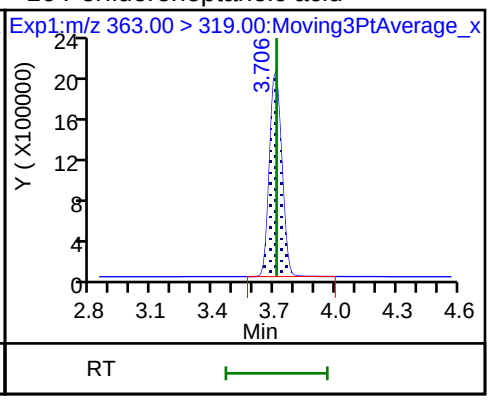
13 HPFO-DA



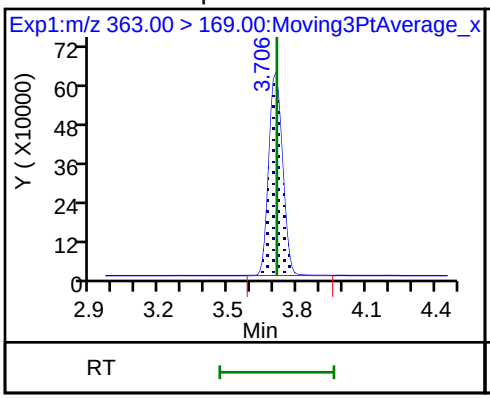
D 18 13C4 PFHpA



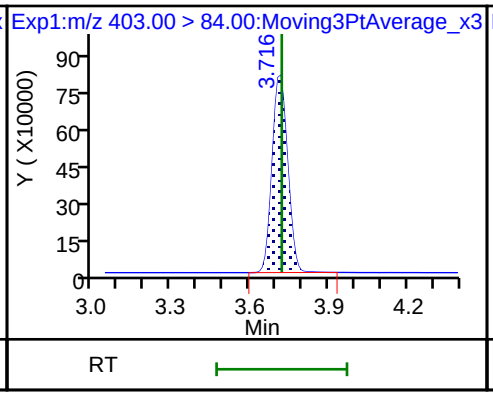
16 Perfluoroheptanoic acid



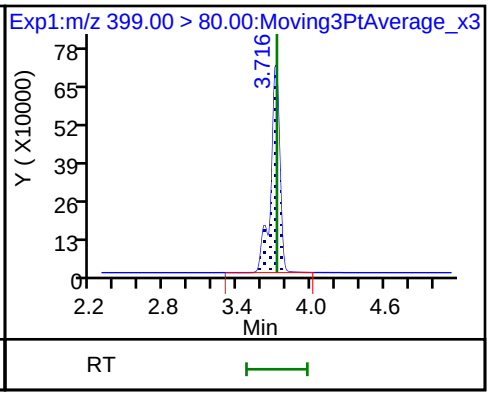
16 Perfluoroheptanoic acid



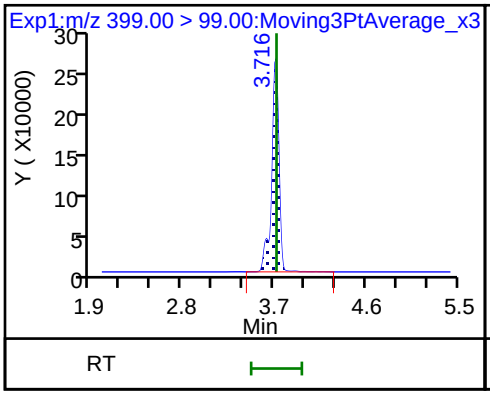
D 17 18O2 PFHxS



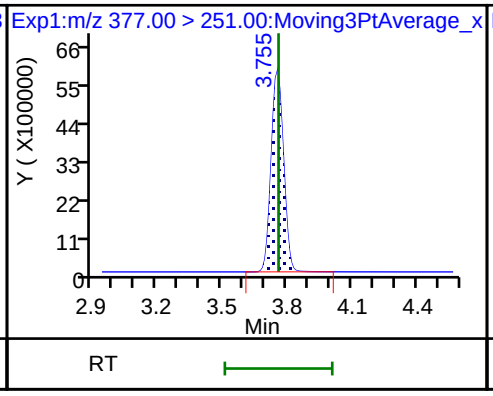
15 Perfluorohexanesulfonic acid



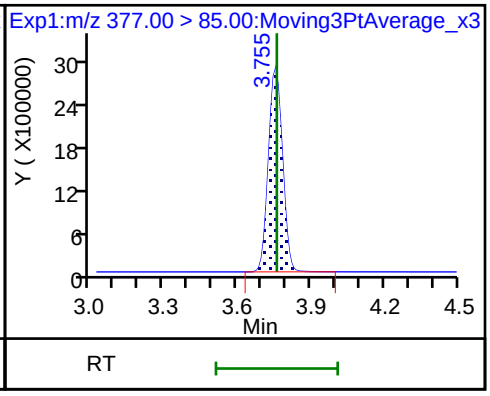
15 Perfluorohexanesulfonic acid



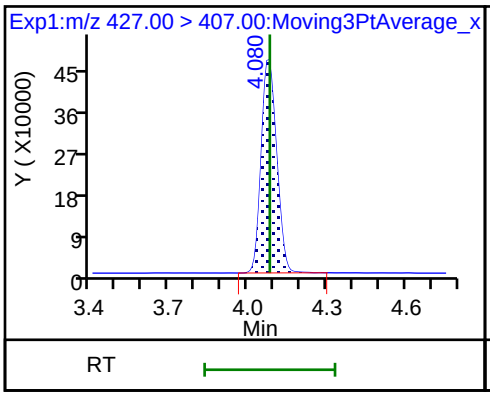
19 DONA



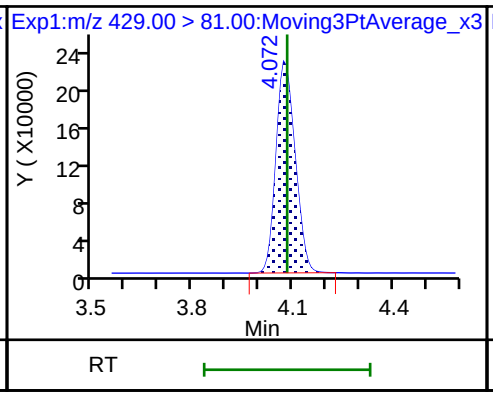
19 DONA



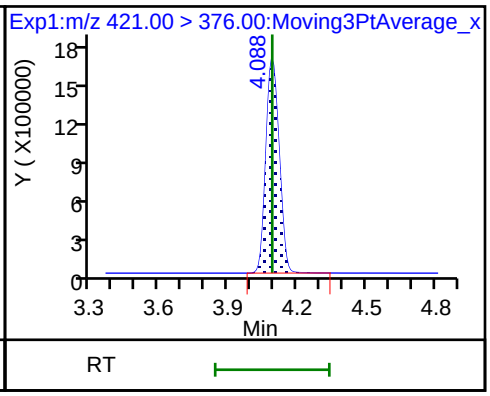
21 6:2 FTS



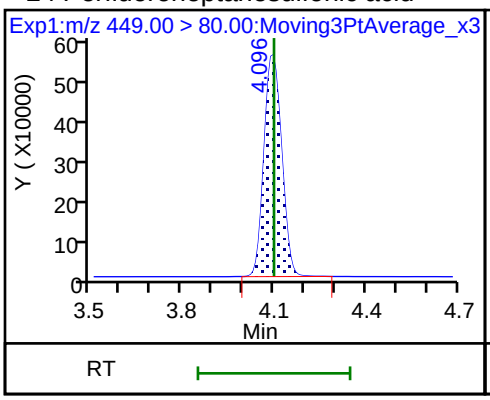
D 20 M2-6:2 FTS



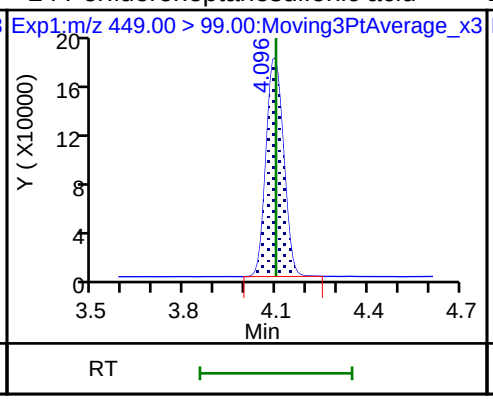
$ 26 13C8 PFOA



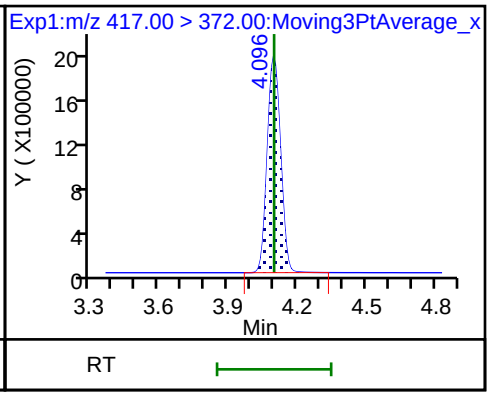
24 Perfluoroheptanesulfonic acid



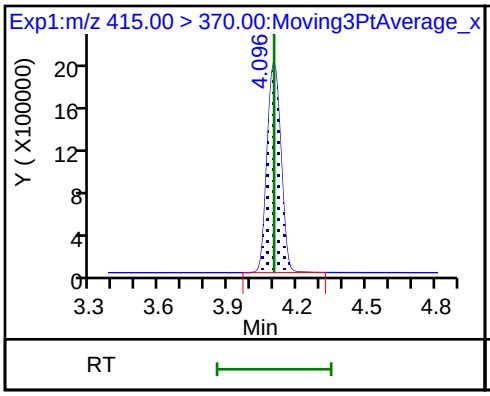
24 Perfluoroheptanesulfonic acid



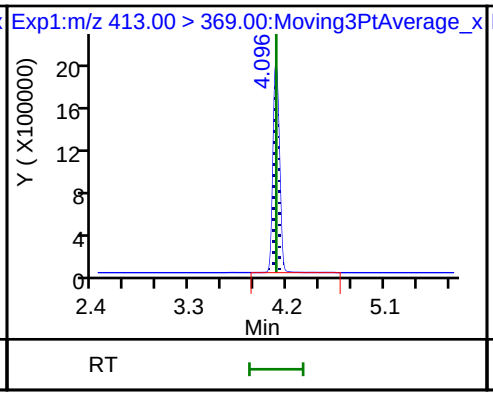
D 25 13C4 PFOA



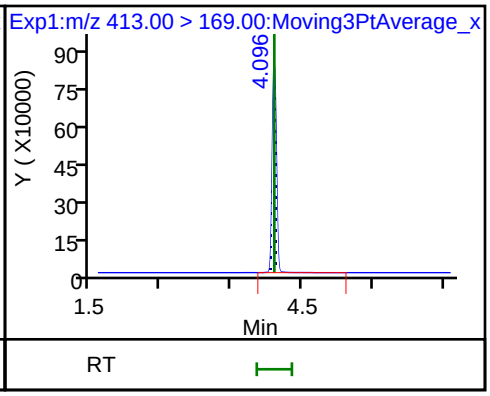
* 23 13C2 PFOA



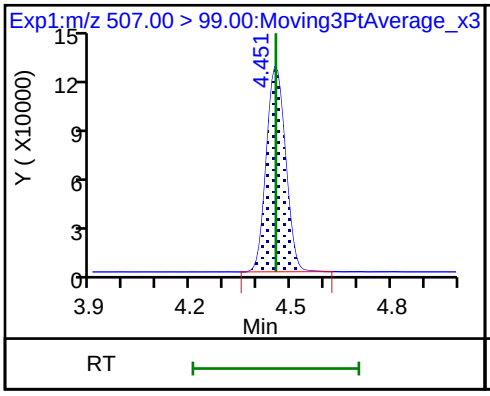
22 Perfluorooctanoic acid



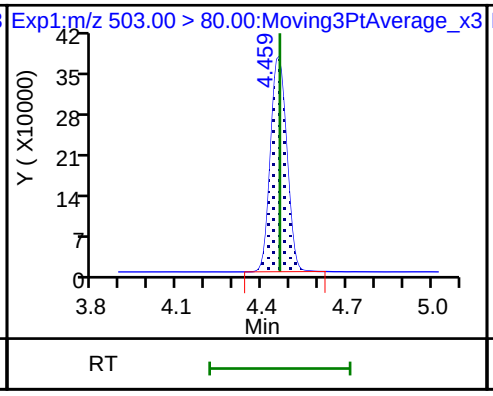
22 Perfluorooctanoic acid



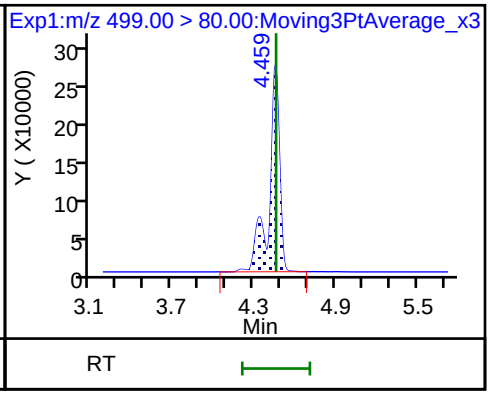
$ 28 13C8 PFOS



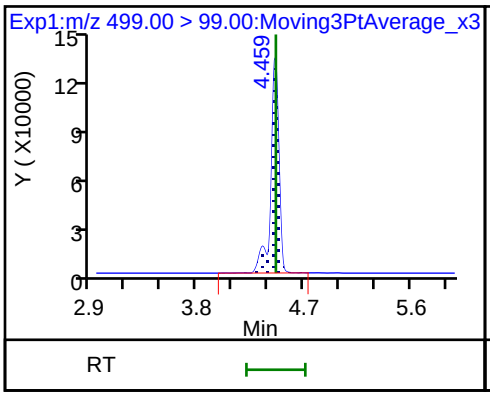
D 27 13C4 PFOS



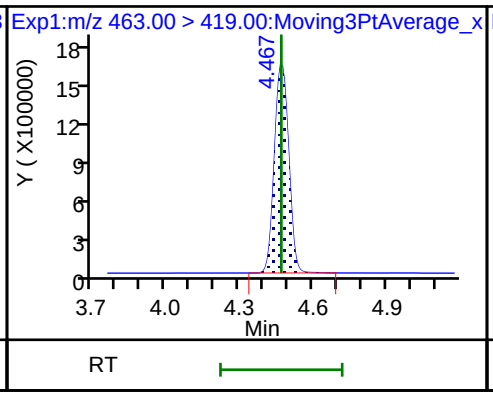
29 Perfluorooctanesulfonic acid



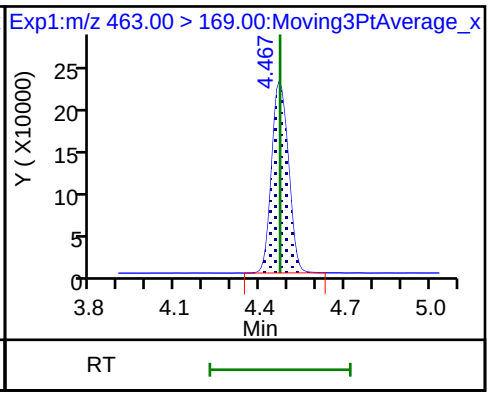
29 Perfluorooctanesulfonic acid



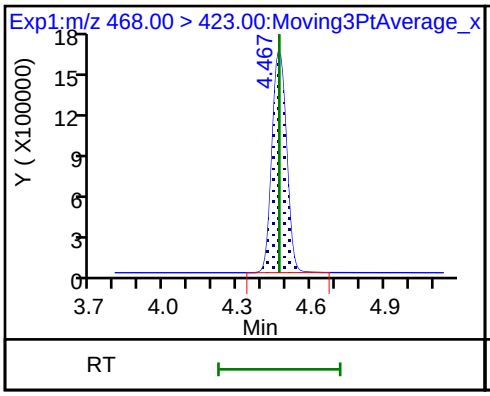
31 Perfluorononanoic acid



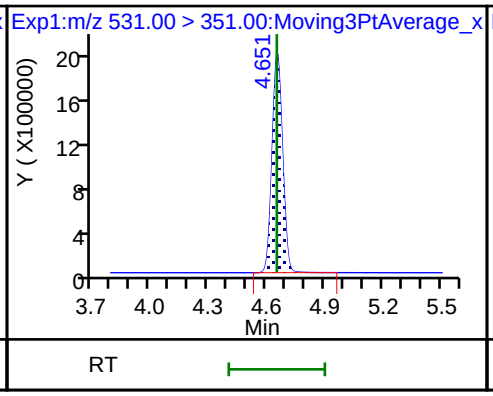
31 Perfluorononanoic acid



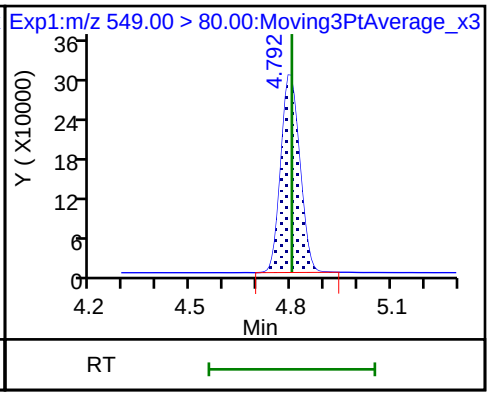
D 30 13C5 PFNA



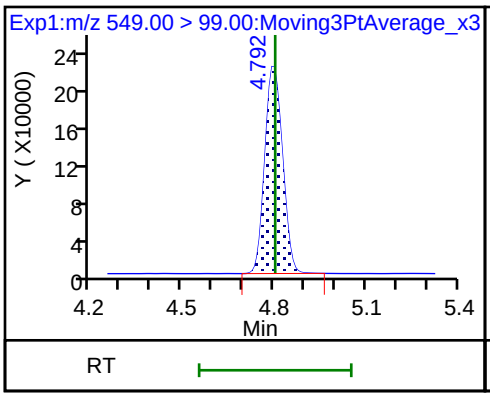
32 9ClFOS



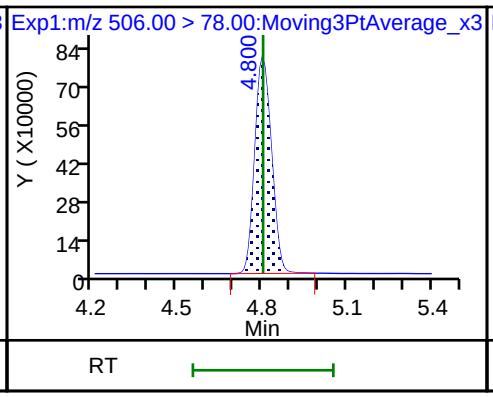
35 Perfluorononanesulfonic acid



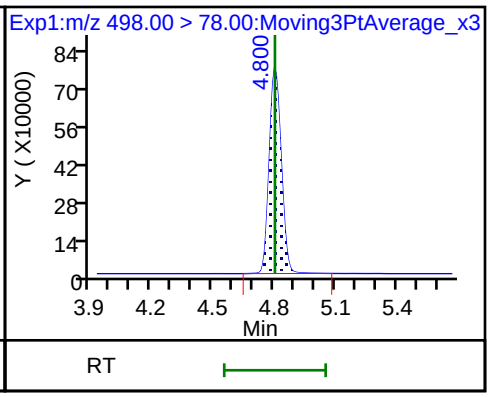
35 Perfluorononanesulfonic acid



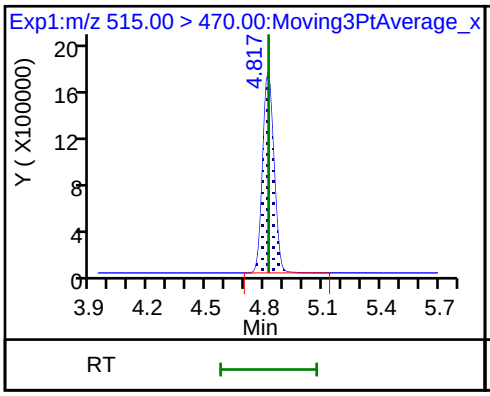
D 33 13C8 FOSA



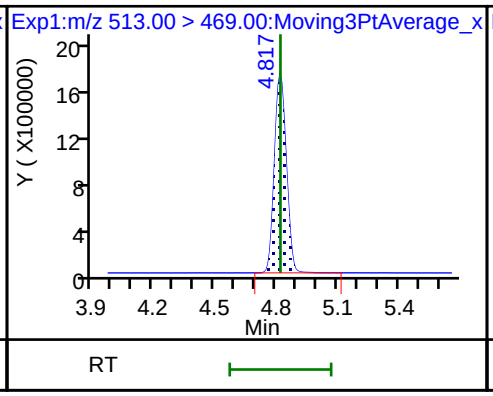
34 Perfluorooctanesulfonamide



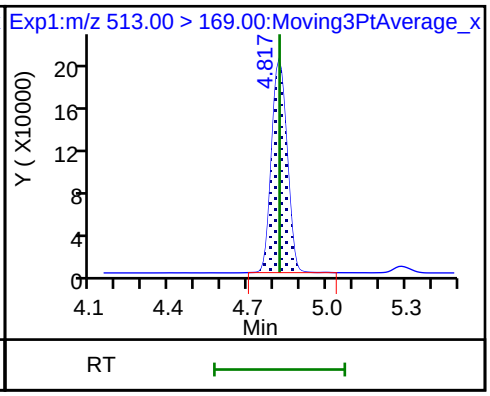
D 39 13C2 PFDA



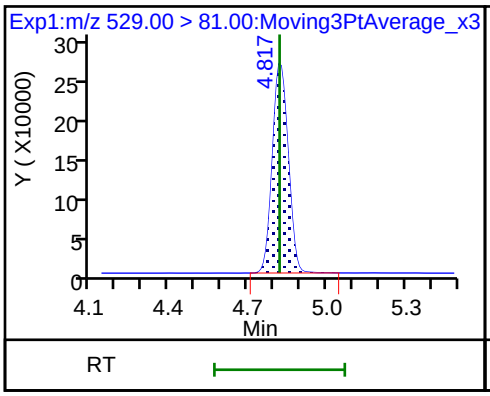
37 Perfluorodecanoic acid



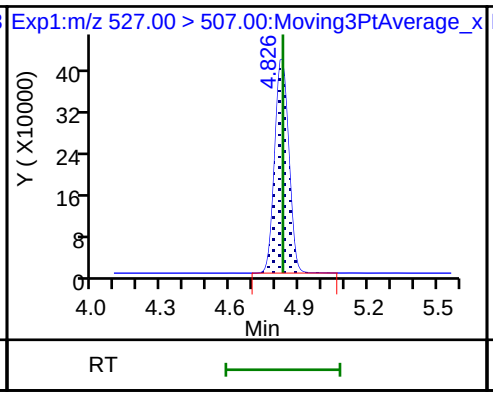
37 Perfluorodecanoic acid



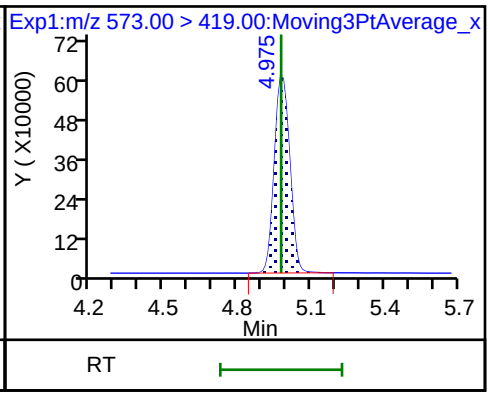
D 38 M2-8:2 FTS



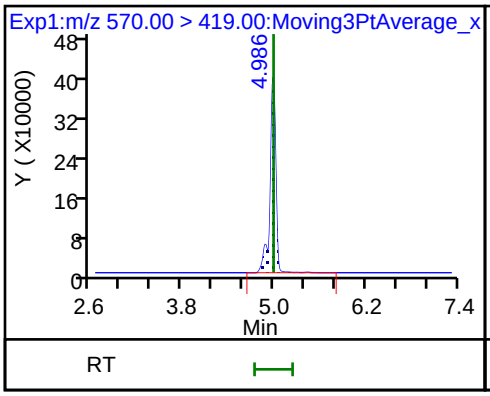
36 8:2 FTS



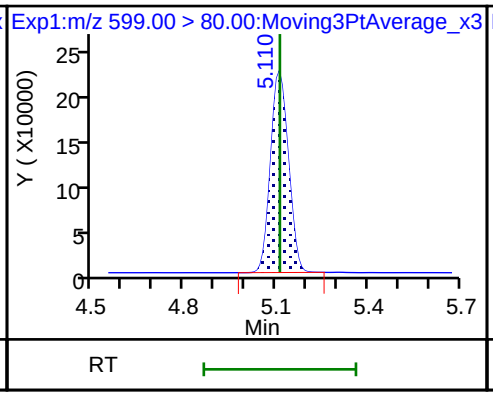
D 40 d3-NMeFOSAA



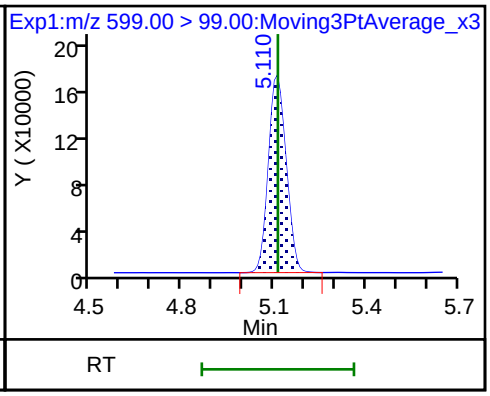
41 NMeFOSAA



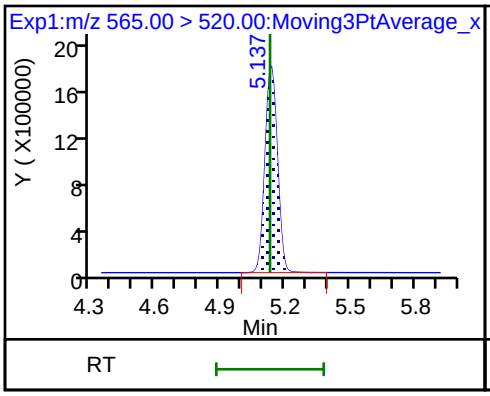
42 Perfluorodecanesulfonic acid



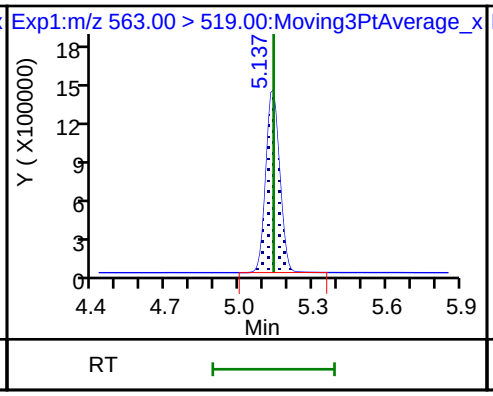
42 Perfluorodecanesulfonic acid



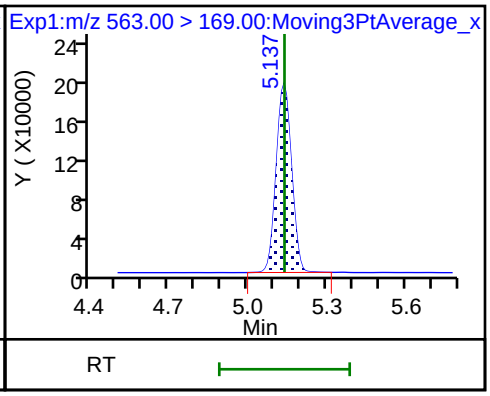
D 43 13C2 PFUnA



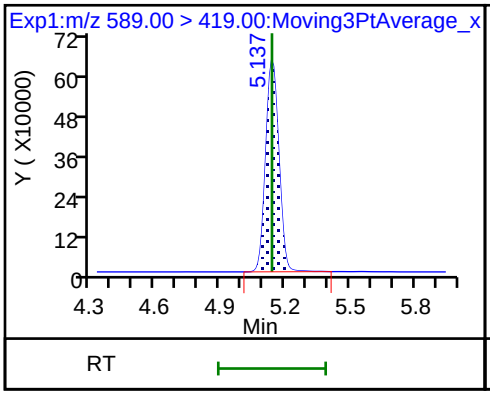
45 Perfluoroundecanoic acid



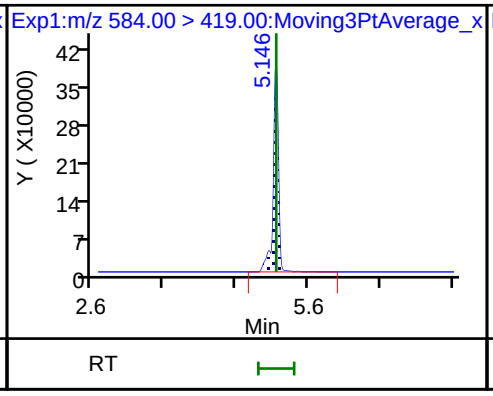
45 Perfluoroundecanoic acid



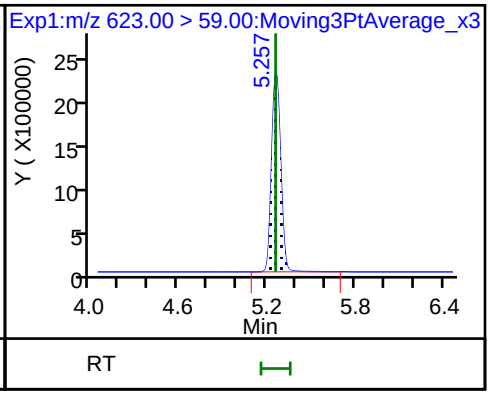
D 44 d5-NEtFOSAA



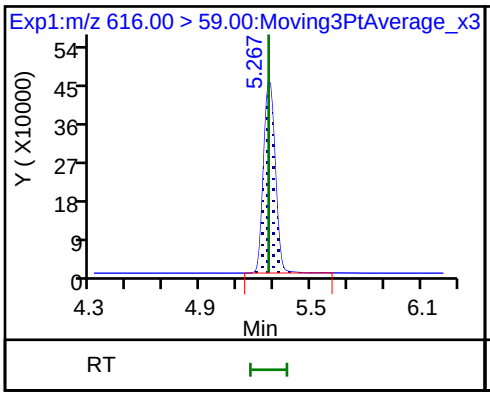
46 NEtFOSA



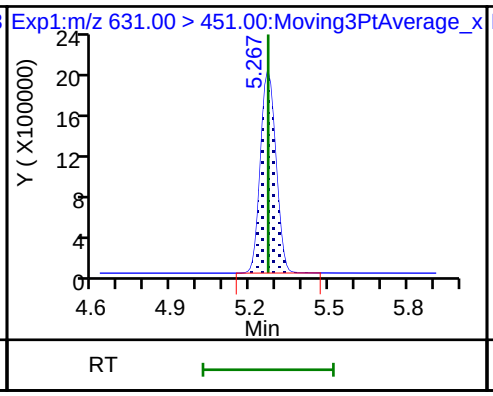
D 47 d7-N-MeFOSE-M



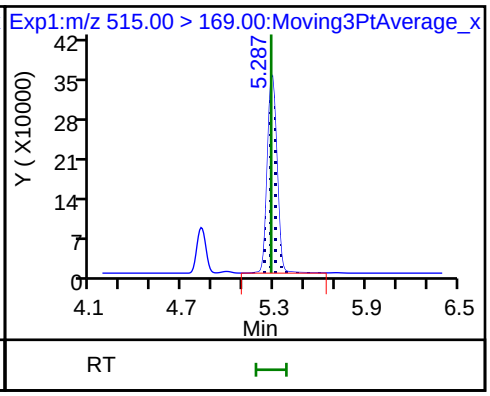
48 N-MeFOSE-M



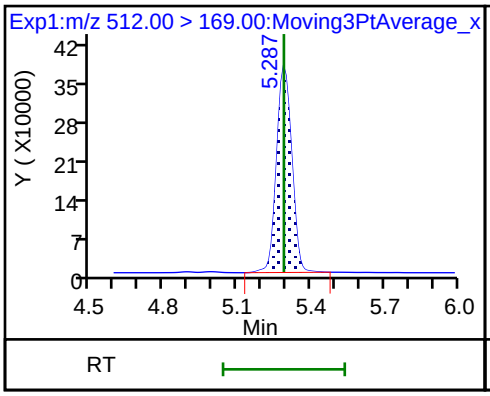
51 11ClFOS



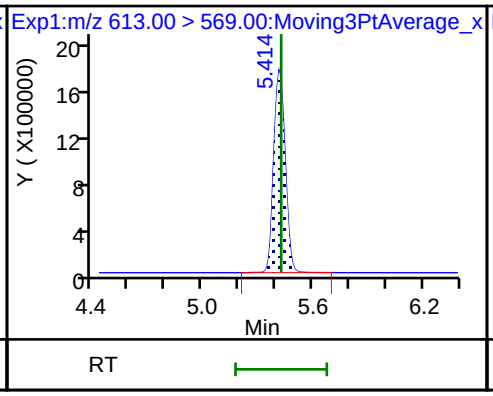
D 49 d-N-MeFOSA-M



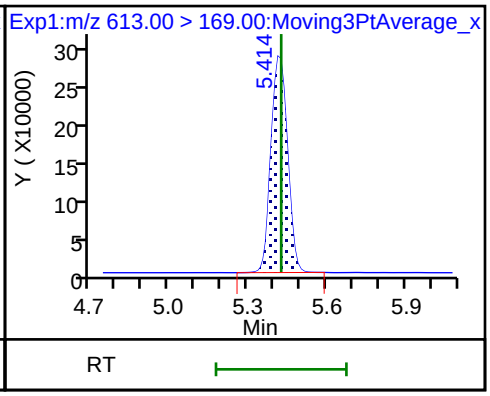
50 NMeFOSA



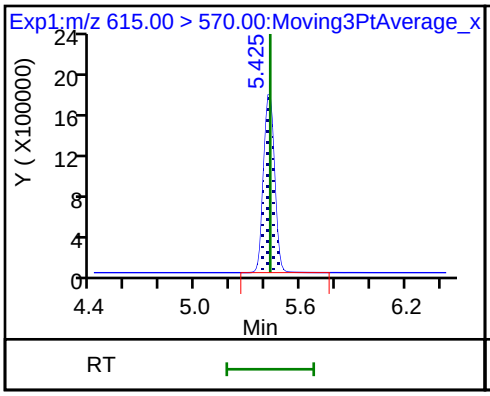
57 Perfluorododecanoic acid



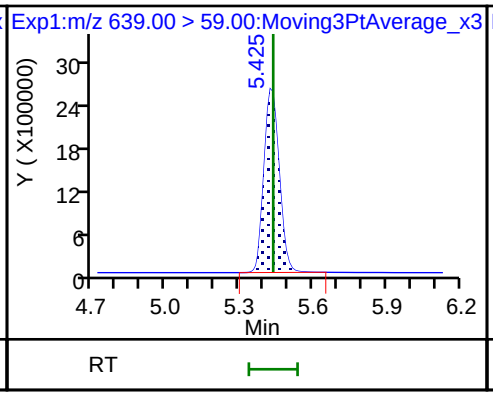
57 Perfluorododecanoic acid



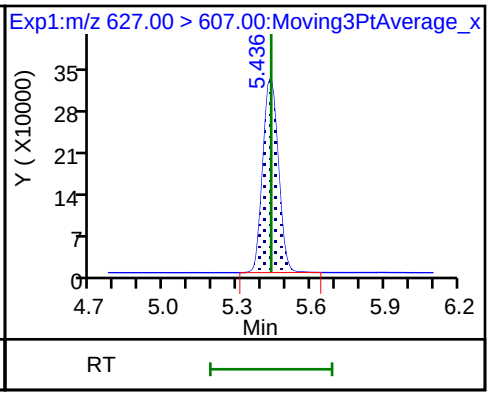
D 56 13C2 PFDoA



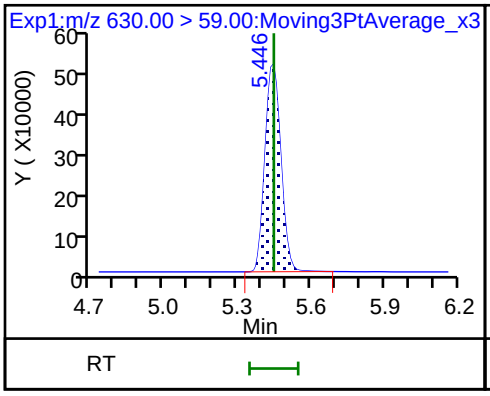
D 52 d9-N-EtFOSE-M



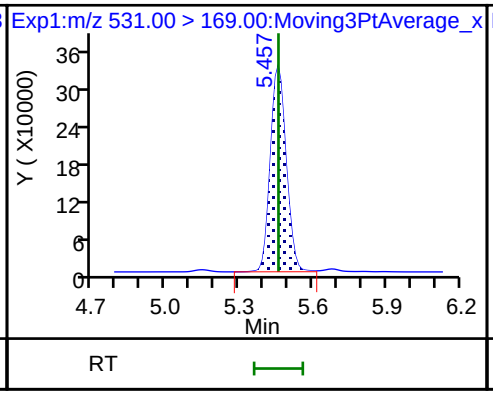
58 10:2 FTS



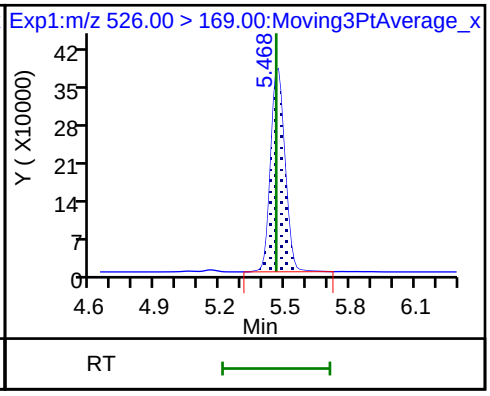
53 N-EtFOSE-M



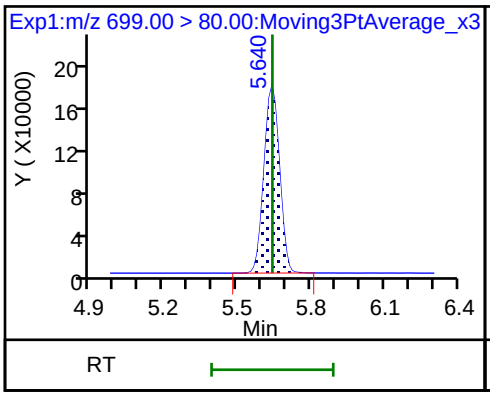
D 54 d-N-EtFOSA-M



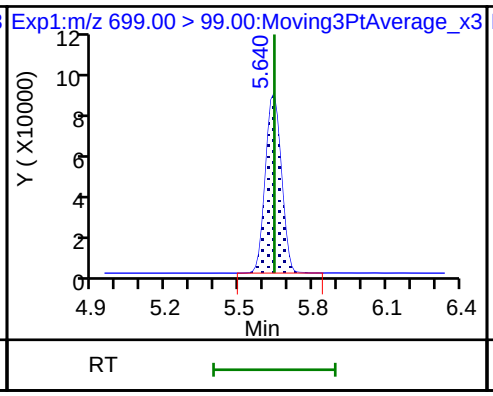
55 N-EtFOSA-M



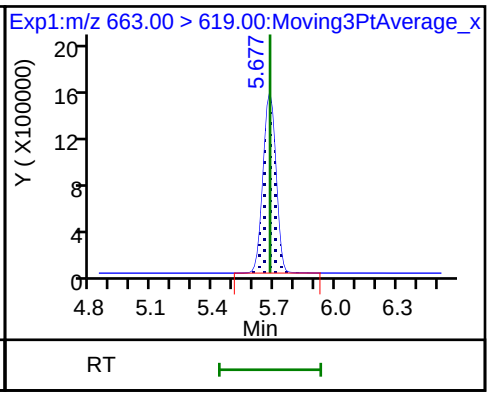
59 PFDoS



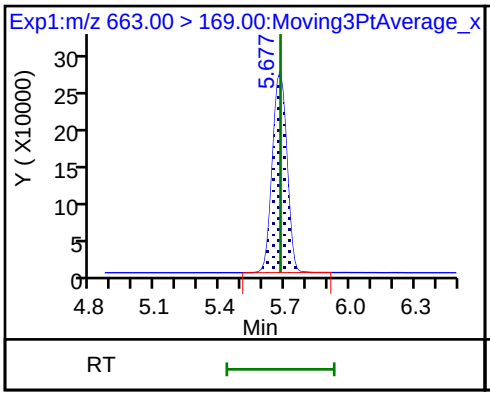
59 PFDoS



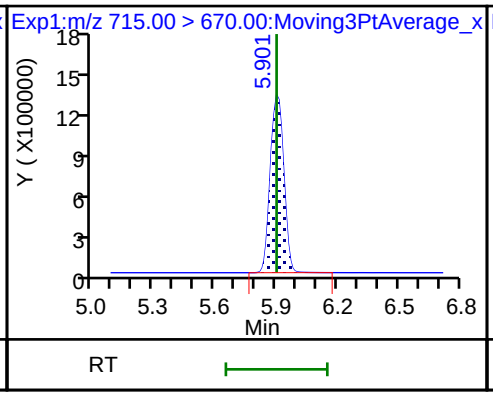
60 Perfluorotridecanoic acid



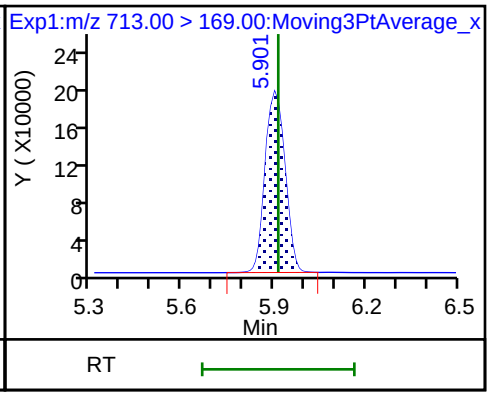
60 Perfluorotridecanoic acid



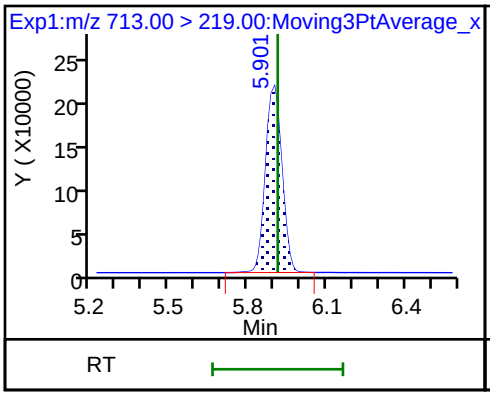
D 61 13C2 PFTeDA



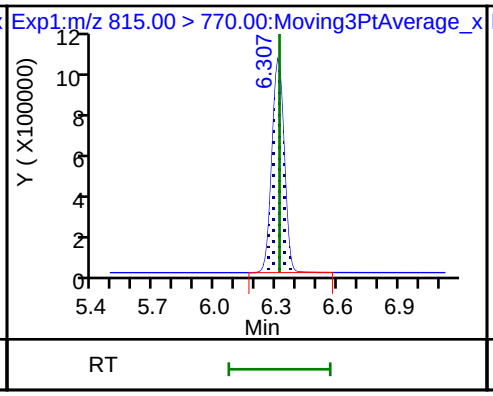
62 Perfluorotetradecanoic acid



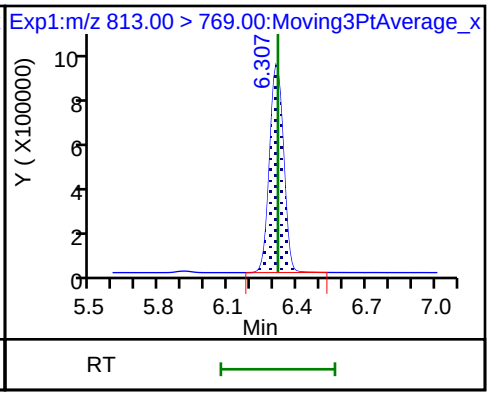
62 Perfluorotetradecanoic acid



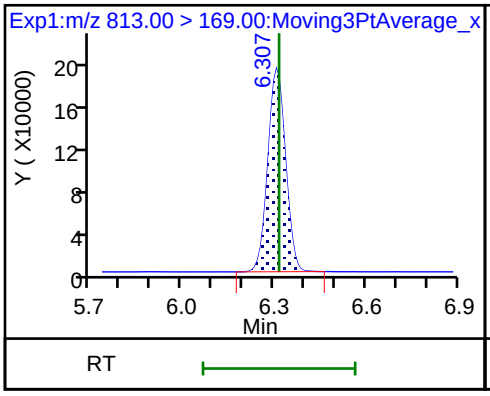
D 64 13C2 PFHxDA



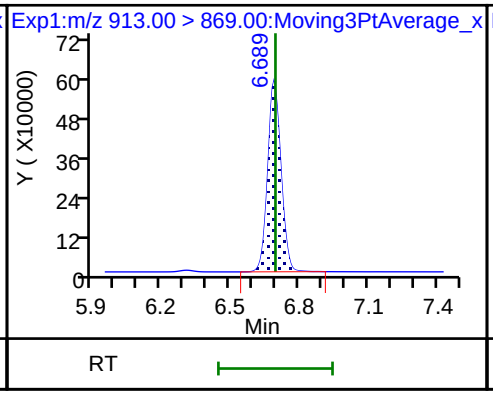
63 Perfluorohexadecanoic acid



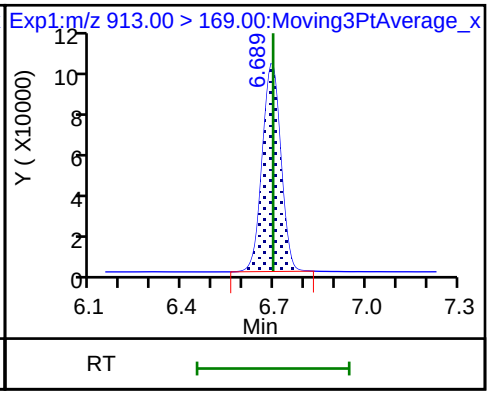
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383454/1 Calibration Date: 06/04/2020 11:49

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.04_A18_PFC_AA_037.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8517	0.8679		1.02	1.00	1.9	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9630	0.9558		0.993	1.00	-0.7	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9751	0.999		0.906	0.884	2.5	50.0
4:2 FTS	AveID	2.096	2.186		0.974	0.934	4.3	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9300	0.9496		1.02	1.00	2.1	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7168	0.7383		0.966	0.938	3.0	50.0
HFPO-DA (GenX)	AveID	0.9456	0.9310		0.984	1.00	-1.6	40.0
Perfluoroheptanoic acid	AveID	0.9856	1.029		1.04	1.00	4.4	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.151	1.107		0.875	0.910	-3.8	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	15.91	16.66		0.987	0.942	4.8	50.0
6:2 FTS	AveID	2.003	2.101		0.995	0.948	4.9	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.514	1.538		0.967	0.952	1.6	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.013	1.023		1.01	1.00	1.0	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.009	1.037		0.954	0.928	2.8	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9614	0.9531		0.991	1.00	-0.9	40.0
F-53B Major	AveID	4.948	5.010		0.944	0.932	1.2	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7814	0.8290		1.02	0.960	6.1	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9186	0.9342		1.02	1.00	1.7	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.8950	0.9161		1.02	1.00	2.4	40.0
8:2 FTS	AveID	1.536	1.611		1.00	0.958	4.9	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7080	0.7403		1.05	1.00	4.5	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5780	0.6233		1.04	0.964	7.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7407	0.7519		1.02	1.00	1.5	40.0
NEtFOSAA	AveID	0.7021	0.6594		0.939	1.00	-6.1	40.0
F-53B Minor	AveID	5.427	5.418		0.940	0.942	-0.2	50.0
NMeFOSE	AveID	0.9823	0.997		1.01	1.00	1.5	40.0
NMeFOSA	AveID	0.9235	1.041		1.13	1.00	12.7	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9313	1.031		1.11	1.00	10.7	40.0
10:2 FTS	AveID	1.215	1.159		0.920	0.964	-4.6	50.0
NEtFOSE	AveID	1.004	1.100		1.10	1.00	9.6	40.0
NEtFOSA	AveID	1.045	1.147		1.10	1.00	9.7	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.5352	0.5282		0.955	0.968	-1.3	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8742	0.9407		1.08	1.00	7.6	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383454/1 Calibration Date: 06/04/2020 11:49

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.04_A18_PFC_AA_037.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1331	0.1411		1.06	1.00	6.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8555		0.961	1.00	-3.9	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5363	0.5578		1.04	1.00	4.0	50.0
13C4 PFBA	Ave	1.247	1.173		2.35	2.50	-5.9	50.0
13C5 PFPeA	Ave	1.118	1.045		2.34	2.50	-6.6	50.0
13C3 PFBS	Ave	0.8747	0.8303		2.21	2.33	-5.1	50.0
M2-4:2 FTS	Ave	0.1422	0.1273		2.09	2.34	-10.5	50.0
13C2 PFHxA	Ave	1.114	1.076		2.41	2.50	-3.4	50.0
13C3 HFPO-DA	Ave	0.2176	0.2116		2.43	2.50	-2.7	50.0
13C4 PFHpA	Ave	0.9885	0.9493		2.40	2.50	-4.0	50.0
18O2 PFHxS	Ave	0.4173	0.3983		2.26	2.37	-4.6	50.0
M2-6:2 FTS	Ave	0.1146	0.1032		2.14	2.38	-10.0	50.0
13C4 PFOA	Ave	0.9904	0.9445		2.38	2.50	-4.6	50.0
13C4 PFOS	Ave	0.1771	0.1661		2.24	2.39	-6.2	50.0
13C5 PFNA	Ave	0.8069	0.7951		2.46	2.50	-1.5	50.0
13C8 FOSA	Ave	0.3929	0.3787		2.41	2.50	-3.6	50.0
13C2 PFDA	Ave	0.8716	0.8281		2.38	2.50	-5.0	50.0
M2-8:2 FTS	Ave	0.1448	0.1322		2.19	2.40	-8.7	50.0
d3-NMeFOSAA	Ave	0.3238	0.2957		2.28	2.50	-8.7	50.0
13C2 PFUnA	Ave	0.8155	0.8164		2.50	2.50	0.1	50.0
d5-NEtFOSAA	Ave	0.3303	0.3166		2.40	2.50	-4.2	50.0
d7-N-MeFOSE-M	Ave	0.2336	0.2269		12.1	12.5	-2.8	50.0
d-N-MeFOSA-M	Ave	0.1846	0.1582		2.14	2.50	-14.3	50.0
13C2 PFDoA	Ave	0.8615	0.8258		2.40	2.50	-4.1	50.0
d9-N-EtFOSE-M	Ave	0.2653	0.2499		11.8	12.5	-5.8	50.0
d-N-EtFOSA-M	Ave	0.1896	0.1572		2.07	2.50	-17.1	50.0
13C2 PFTeDA	Ave	0.7207	0.6510		2.26	2.50	-9.7	50.0
13C2 PFHxDA	Ave	0.5104	0.4798		2.35	2.50	-6.0	50.0
13C8 PFOA	Ave	0.8173	0.7895		2.36	2.45	-3.4	50.0
13C8 PFOS	Ave	0.0612	0.0583		2.28	2.39	-4.8	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_037.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 04-Jun-2020 11:49:04 ALS Bottle#: 52 Worklist Smp#: 1
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 07:49:50 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1005

First Level Reviewer: ruangyotsakuld Date: 05-Jun-2020 07:49:50
Ratio Calibration: Average of Initial Calibration

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	2.565	2.565	0.0	0.627	10985045	2.35		94.1	11511	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.565	2.565	0.0	1.000	3813438	1.02		102	577	
D 4 13C5 PFPeA										
267.90 > 223.00	2.930	2.930	0.0	0.716	9781752	2.34		93.4	4925	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.930	2.930	0.0	1.000	3739666	0.99		99.3	438	
D 9 13C3 PFBS										
301.90 > 80.00	2.961	2.961	0.0	0.724	7231605	2.21		94.9	6531	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.973	2.973	0.0	1.004	2747405	0.9059	Target=2.25	102	2240	
298.90 > 99.00	2.973	2.973	0.0	1.004	1224233		2.24(1.13-3.38)		749	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.258	3.258	0.0	0.796	1113339	2.09		89.5	1575	
8 4:2 FTS										
327.00 > 307.00	3.258	3.258	0.0	1.000	973413	0.9738		104	4275	
D 11 13C2 PFHxA										
315.00 > 270.00	3.298	3.298	0.0	0.806	10073717	2.41		96.6	4889	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.298	3.298	0.0	1.000	3826272	1.02	Target=11.49	102	530	
313.00 > 119.00	3.298	3.298	0.0	1.000	316816		12.08(5.74-17.23)		297	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.320	3.320	0.0	1.121	2154082	0.9662	Target=2.74	103	1892	
349.00 > 99.00	3.320	3.320	0.0	1.121	798970		2.70(1.37-4.12)		1308	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.415	3.415	0.0	0.835	1981922	2.43		97.3	4181	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.415	3.415	0.0	1.000	738027	0.9845		98.4	2082	
D 18 13C4 PFHpA										
367.00 > 322.00	3.701	3.701	0.0	0.905	8890010	2.40		96.0	6596	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.701	3.701	0.0	1.000	3659416	1.04	Target=3.25	104	829	
363.00 > 169.00	3.701	3.701	0.0	1.000	1115889		3.28(1.62-4.87)		1157	
D 17 18O2 PFHxS										
403.00 > 84.00	3.711	3.711	0.0	0.907	3528642	2.26		95.4	3994	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.711	3.711	0.0	1.000	1503197	0.8751	Target=2.90	96.2	2844	
399.00 > 99.00	3.711	3.711	0.0	1.000	517401		2.91(1.45-4.35)		837	
19 DONA										
377.00 > 251.00	3.750	3.750	0.0	0.842	9768571	0.9869	Target=2.01	105	6970	
377.00 > 85.00	3.750	3.750	0.0	0.842	4719304		2.07(1.00-3.01)		4375	
21 6:2 FTS										
427.00 > 407.00	4.074	4.074	0.0	1.000	769898	0.99		105	1463	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.074	4.074	0.0	0.996	918050	2.14		90.0	2267	
$ 26 13C8 PFOA										
421.00 > 376.00	4.090	4.090	0.0	1.000	7238225	2.36		96.6	7665	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.090	4.090	0.0	0.918	911185	0.9672	Target=3.25	102	1826	
449.00 > 99.00	4.090	4.090	0.0	0.918	280998		3.24(1.63-4.88)		740	
D 25 13C4 PFOA										
417.00 > 372.00	4.090	4.090	0.0	1.000	8845287	2.38		95.4	5469	
* 23 13C2 PFOA										
415.00 > 370.00	4.090	4.090	0.0		9364824	2.50			6006	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.090	4.090	0.0	1.000	3617801	1.01	Target=2.35	101	1601	
413.00 > 169.00	4.090	4.090	0.0	1.000	1456372		2.48(1.18-3.53)		3219	
$ 28 13C8 PFOS										
507.00 > 99.00	4.446	4.446	0.0	1.087	521860	2.28		95.2	1304	
D 27 13C4 PFOS										
503.00 > 80.00	4.454	4.454	0.0	1.089	1487317	2.24		93.8	2882	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.454	4.454	0.0	1.000	598671	0.9538	Target=2.41	103	903	
499.00 > 99.00	4.454	4.454	0.0	1.000	243397		2.46(1.21-3.62)		510	
D 30 13C5 PFNA										
468.00 > 423.00	4.462	4.462	0.0	1.091	7445483	2.46		98.5	4601	
31 Perfluorononanoic acid										
463.00 > 419.00	4.470	4.470	0.0	1.002	2838455	0.99	Target=6.74	99.1	845	
463.00 > 169.00	4.462	4.470	-0.008	1.000	427196		6.64(3.37-10.11)		921	
32 9ClFOS										
531.00 > 351.00	4.647	4.647	0.0	1.043	2905514	0.9435		101	3597	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.794	4.794	0.0	1.000	1325237	1.02		102	2050	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 33 13C8 FOSA										
506.00 > 78.00	4.794	4.794	0.0	1.172	3546312	2.41		96.4	2689	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.794	4.794	0.0	1.076	495267	1.02	Target=1.37	106	1741	
549.00 > 99.00	4.794	4.794	0.0	1.076	354690		1.40(0.69-2.06)		1382	
D 39 13C2 PFDA										
515.00 > 470.00	4.811	4.811	0.0	1.176	7754926	2.38		95.0	6139	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.811	4.811	0.0	1.000	2841747	1.02	Target=8.07	102	2240	
513.00 > 169.00	4.811	4.811	0.0	1.000	368581		7.71(4.04-12.11)		335	
36 8:2 FTS										
527.00 > 507.00	4.820	4.820	0.0	1.000	764231	1.00		105	3821	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.820	4.820	0.0	1.178	1186238	2.19		91.3	2042	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.978	4.978	0.0	1.217	2769217	2.28		91.3	2279	
41 NMeFOSAA										
570.00 > 419.00	4.978	4.978	0.0	1.000	819980	1.05		105	5476	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.103	5.103	0.0	1.146	373899	1.04	Target=1.31	108	1495	
599.00 > 99.00	5.103	5.103	0.0	1.146	275106		1.36(0.65-1.96)		1167	
D 43 13C2 PFUnA										
565.00 > 520.00	5.130	5.130	0.0	1.254	7645326	2.50		100	6377	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.130	5.130	0.0	1.000	2299247	1.02	Target=6.70	102	1858	
563.00 > 169.00	5.130	5.130	0.0	1.000	325814		7.06(3.35-10.05)		578	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.139	5.139	0.0	1.256	2964518	2.40		95.8	2162	
46 NEtFOSA										
584.00 > 419.00	5.139	5.139	0.0	1.000	781939	0.9391		93.9	10446	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.259	5.259	0.0	1.286	10626308	12.1		97.2	15758	
51 11ClFOS										
631.00 > 451.00	5.269	5.269	0.0	1.183	3176084	0.9405		99.8	3669	
48 N-MeFOSE-M										
616.00 > 59.00	5.269	5.269	0.0	1.002	847290	1.01		101	1636	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.280	5.280	0.0	1.291	1481452	2.14		85.7	28.4	
50 NMeFOSA										
512.00 > 169.00	5.280	5.280	0.0	1.000	616898	1.13		113	520	
D 56 13C2 PFDoA										
615.00 > 570.00	5.415	5.415	0.0	1.324	7733128	2.40		95.9	6755	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.415	5.415	0.0	1.000	3187679	1.11	Target=6.20	111	1734	
613.00 > 169.00	5.415	5.415	0.0	1.000	475528		6.70(3.10-9.30)		1268	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.426	5.426	0.0	1.327	11702002	11.8		94.2	5971	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 10:2 FTS										
627.00 > 607.00	5.426	5.426	0.0	1.126	553479	0.9201		95.4	1989	
53 N-EtFOSE-M										
630.00 > 59.00	5.437	5.437	0.0	1.002	1029424	1.10		110	1403	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.448	5.448	0.0	1.332	1471775	2.07		82.9	395	
55 N-EtFOSA-M										
526.00 > 169.00	5.459	5.459	0.0	1.002	674965	1.10		110	448	
59 PFDoS										
699.00 > 80.00	5.630	5.630	0.0	1.264	318210	0.9555	Target=2.11	98.7	1395	
699.00 > 99.00	5.642	5.630	0.012	1.267	152816		2.08(1.06-3.17)		1155	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.667	5.667	0.0	1.046	2909947	1.08	Target=4.98	108	2971	
663.00 > 169.00	5.679	5.667	0.012	1.049	601330		4.84(2.49-7.47)		1710	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.901	5.901	0.0	1.443	6096016	2.26		90.3	7283	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.901	5.901	0.0	1.000	344146	1.06	Target=0.96	106	1045	
713.00 > 219.00	5.888	5.901	-0.013	0.998	345291		1.00(0.48-1.43)		1960	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.307	6.307	0.0	1.542	4493436	2.35		94.0	5800	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.307	6.307	0.0	1.000	1537643	0.9609	Target=5.10	96.1	1168	
813.00 > 169.00	6.307	6.307	0.0	1.000	305845		5.03(2.55-7.64)		1891	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.696	6.696	0.0	1.062	1002479	1.04	Target=5.50	104	721	
913.00 > 169.00	6.689	6.696	-0.007	1.061	172845		5.80(2.75-8.25)		1427	

Reagents:

LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 07:49:52 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_037.d

Injection Date: 04-Jun-2020 11:49:04 Instrument ID: A18

Lims ID: CCV L4

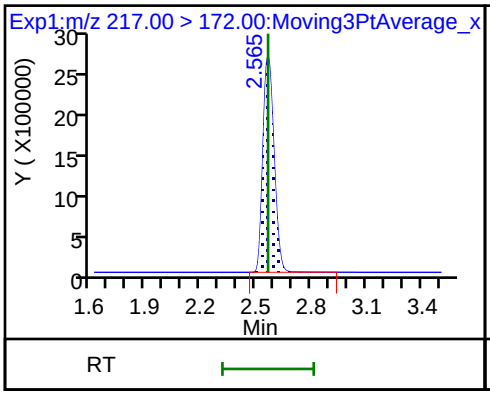
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 1

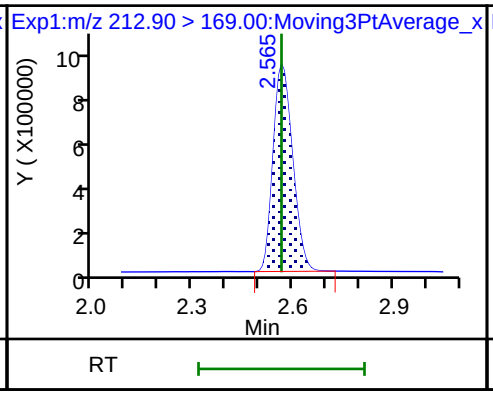
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

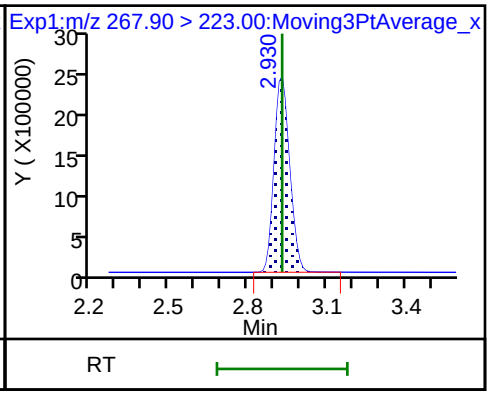
D 1 13C4 PFBA



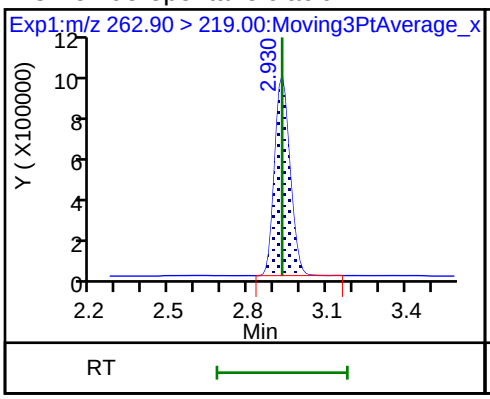
2 Perfluorobutanoic acid



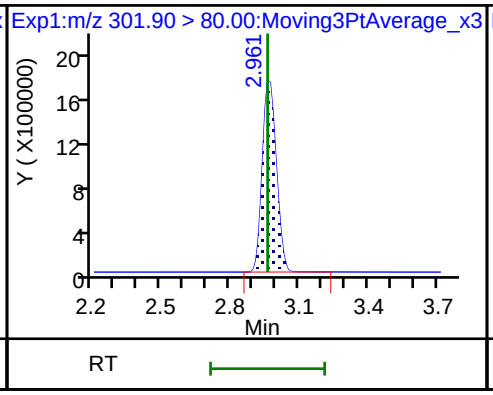
D 4 13C5 PFPeA



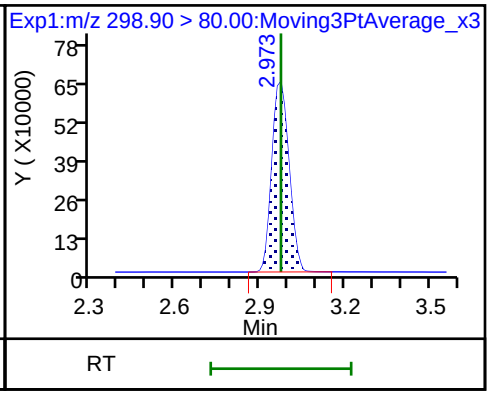
5 Perfluoropentanoic acid



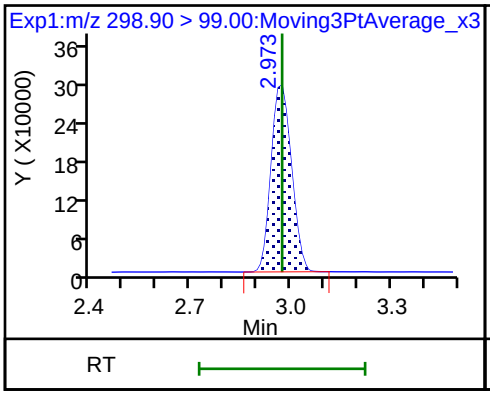
D 9 13C3 PFBS



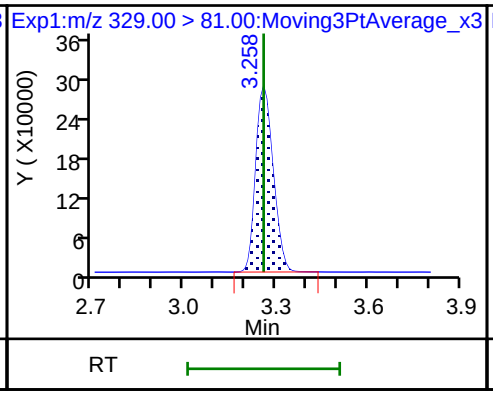
6 Perfluorobutanesulfonic acid



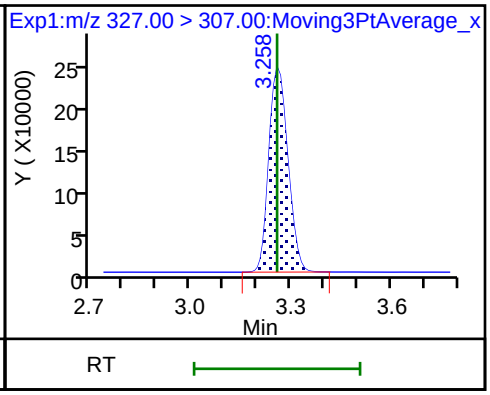
6 Perfluorobutanesulfonic acid



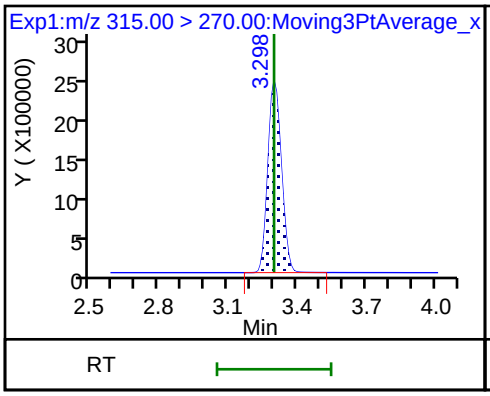
D 7 M2-4:2 FTS



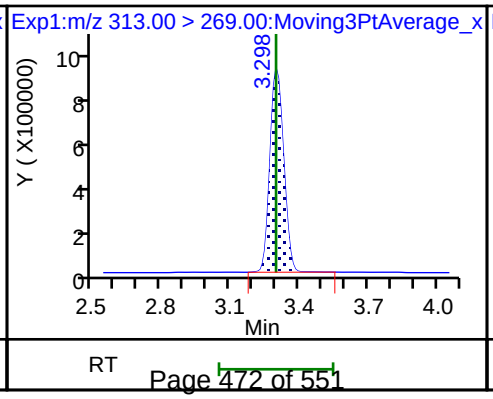
8 4:2 FTS



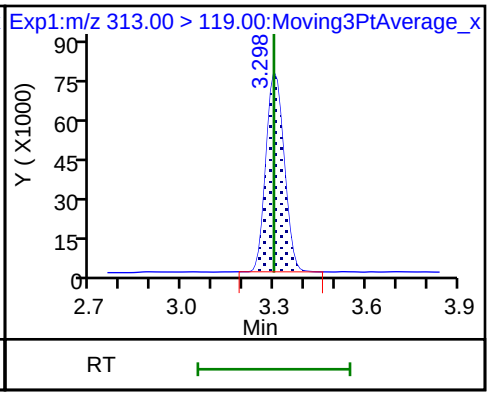
D 11 13C2 PFHxA



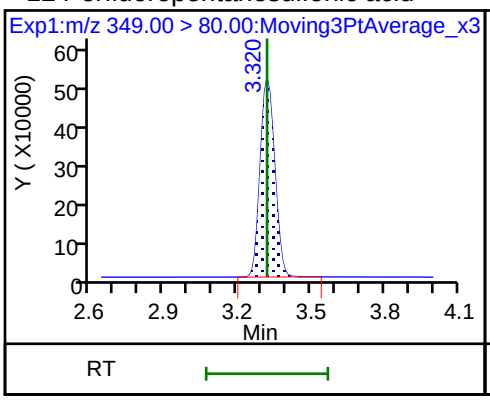
10 Perfluorohexanoic acid



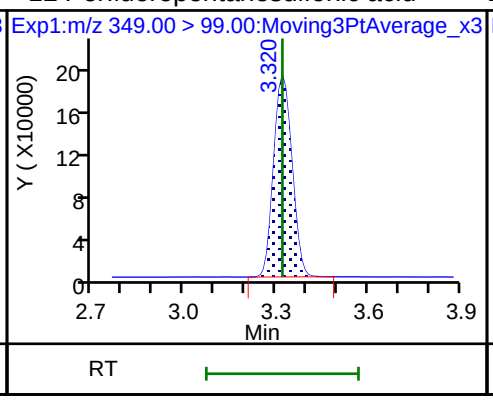
10 Perfluorohexanoic acid



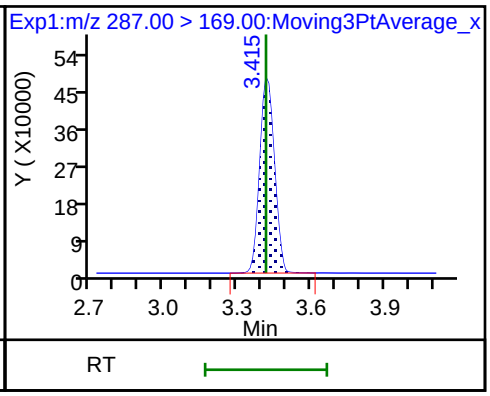
12 Perfluoropentanesulfonic acid



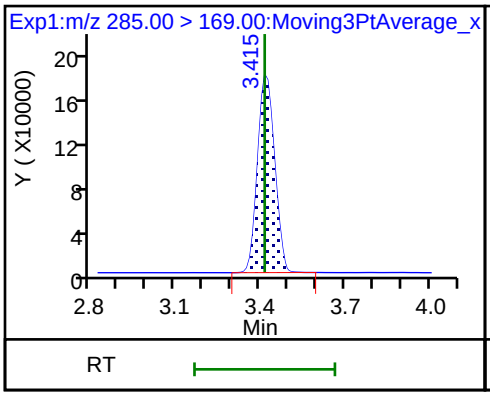
12 Perfluoropentanesulfonic acid



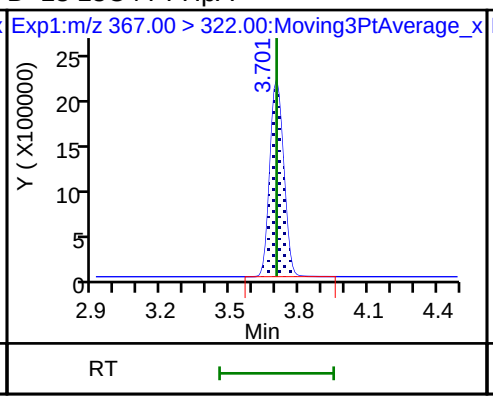
D 14 13C3 HFPO-DA



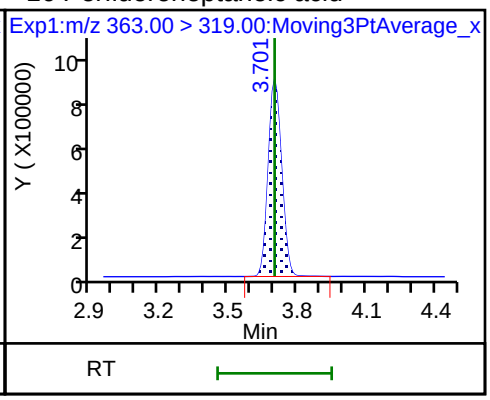
13 HPFO-DA



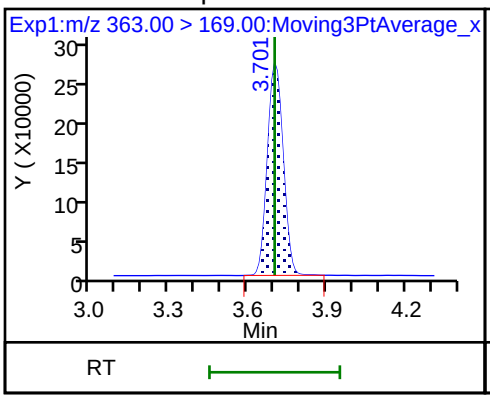
D 18 13C4 PFHpA



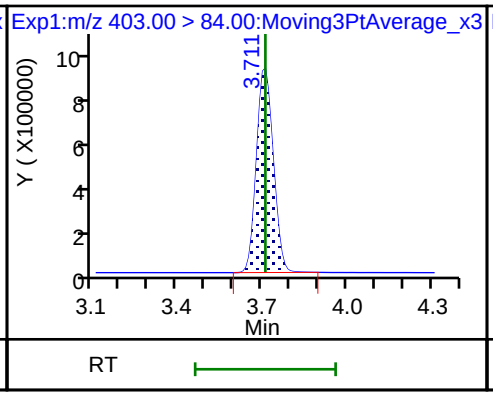
16 Perfluoroheptanoic acid



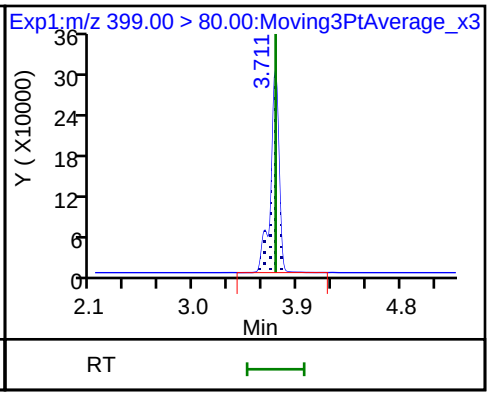
16 Perfluoroheptanoic acid



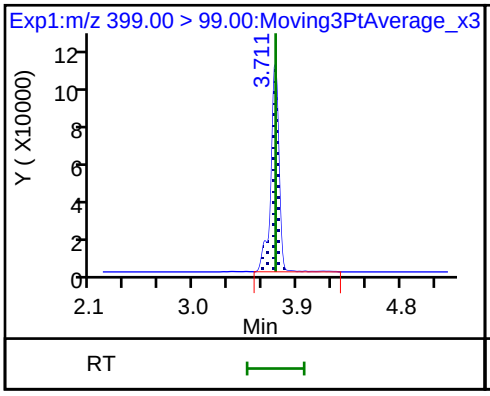
D 17 18O2 PFHxS



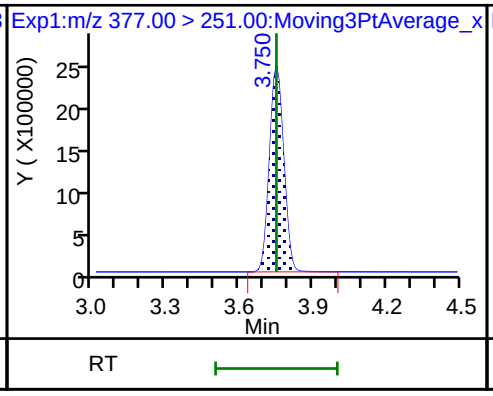
15 Perfluorohexanesulfonic acid



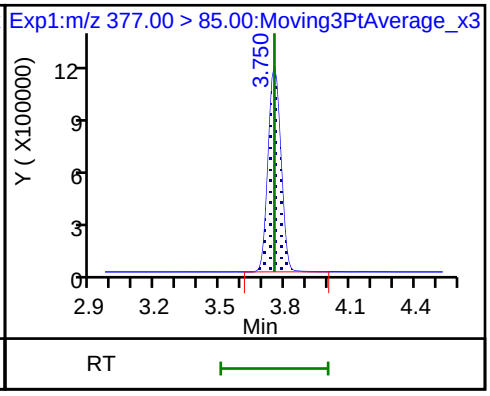
15 Perfluorohexanesulfonic acid



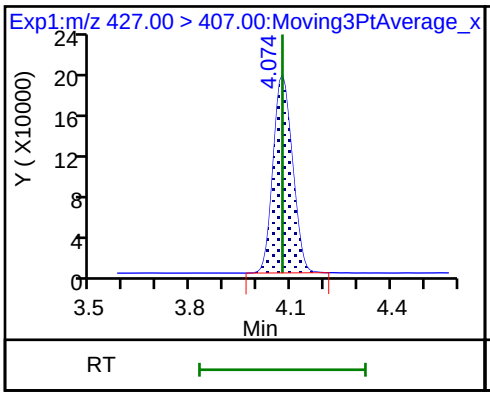
19 DONA



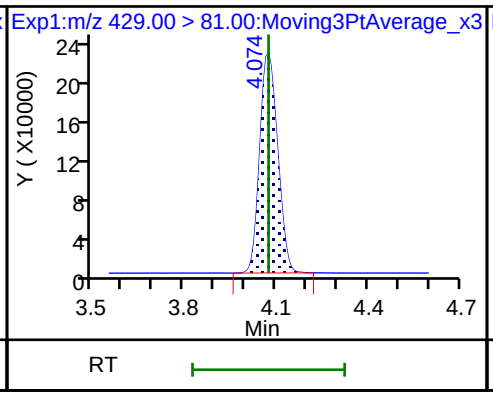
19 DONA



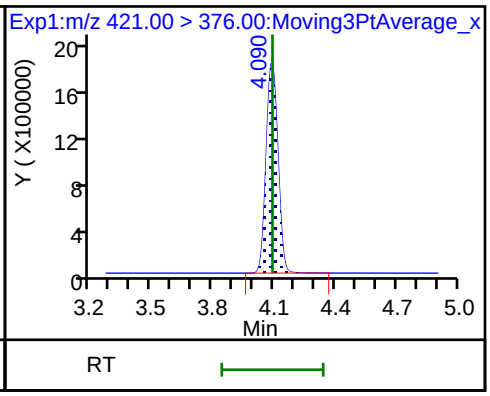
21 6:2 FTS



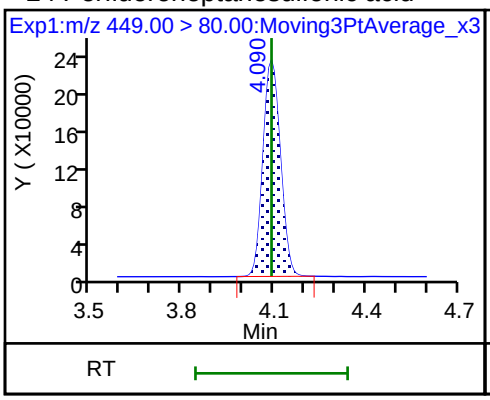
D 20 M2-6:2 FTS



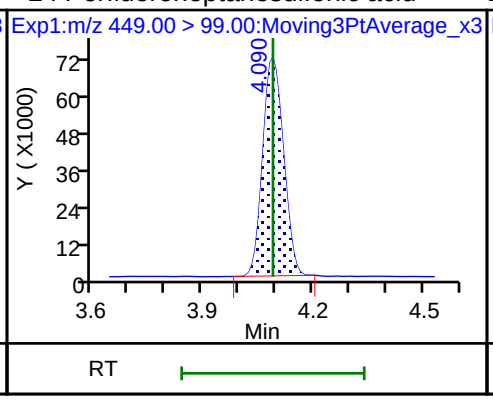
$ 26 13C8 PFOA



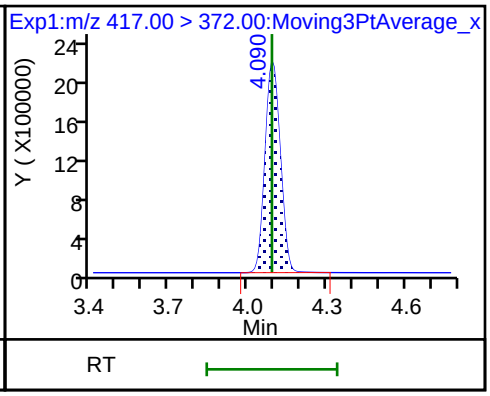
24 Perfluoroheptanesulfonic acid



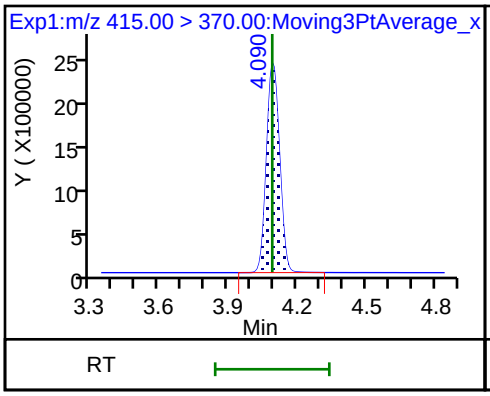
24 Perfluoroheptanesulfonic acid



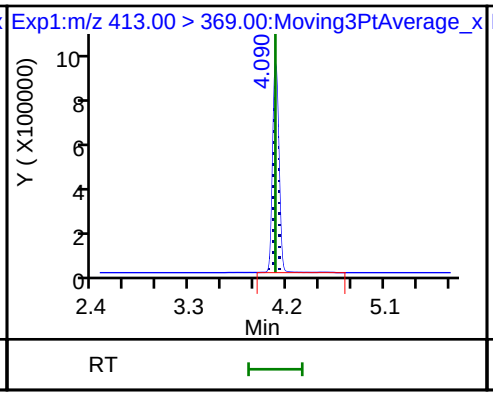
D 25 13C4 PFOA



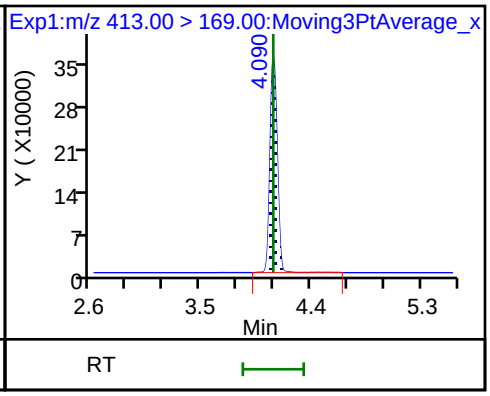
* 23 13C2 PFOA



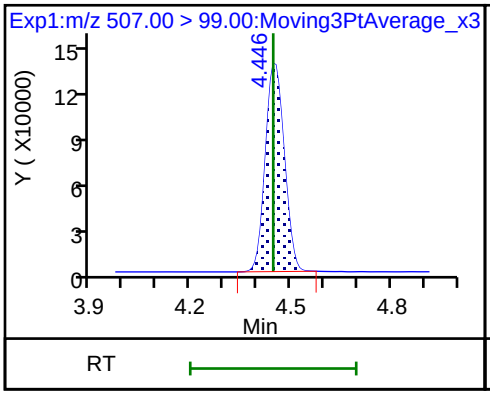
22 Perfluorooctanoic acid



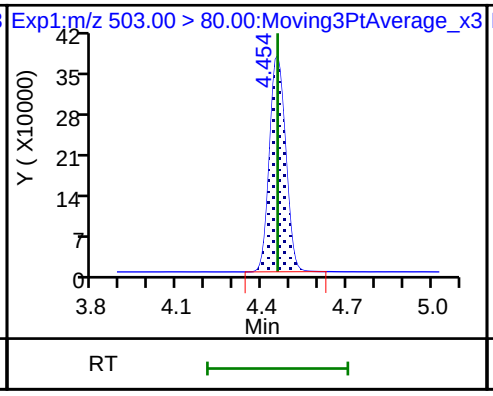
22 Perfluorooctanoic acid



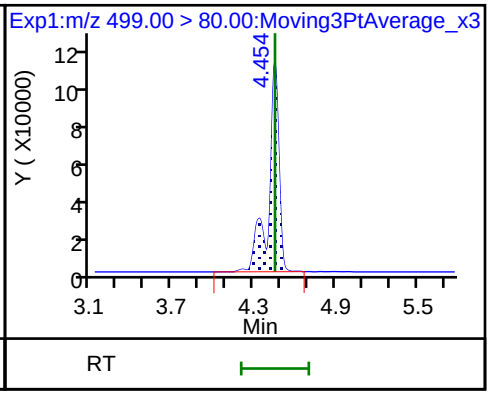
$ 28 13C8 PFOS



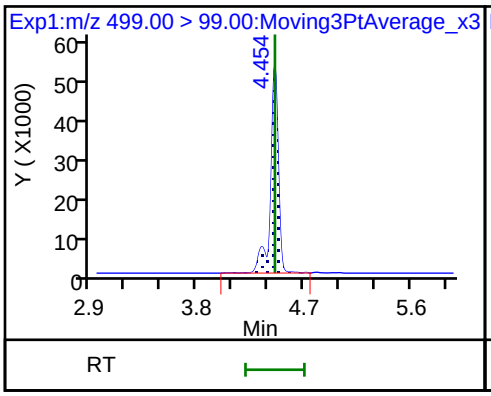
D 27 13C4 PFOS



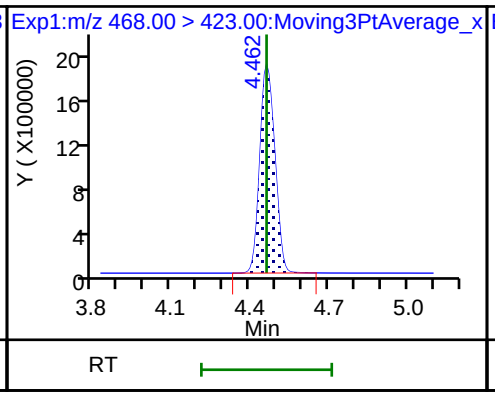
29 Perfluorooctanesulfonic acid



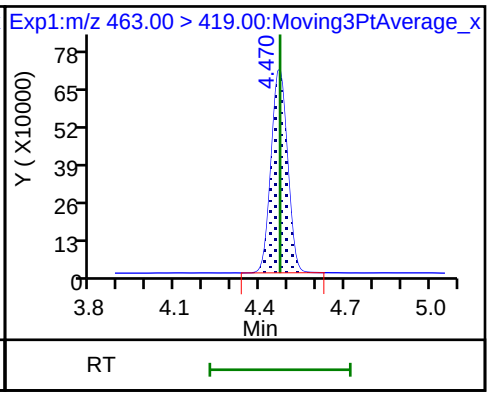
29 Perfluorooctanesulfonic acid



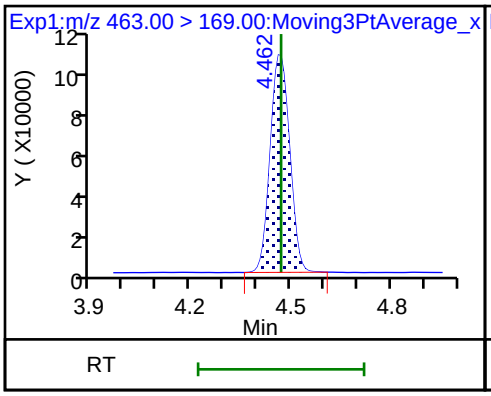
D 30 13C5 PFNA



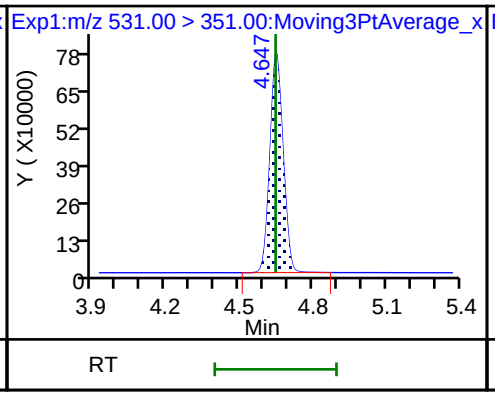
31 Perfluorononanoic acid



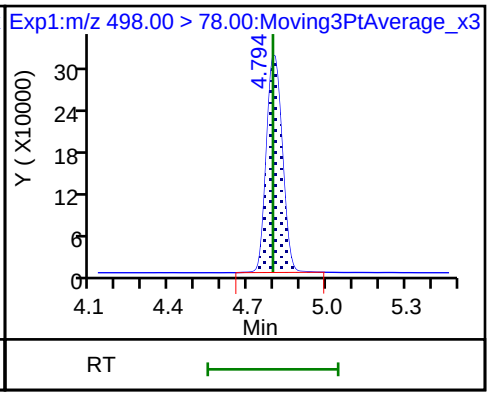
31 Perfluorononanoic acid



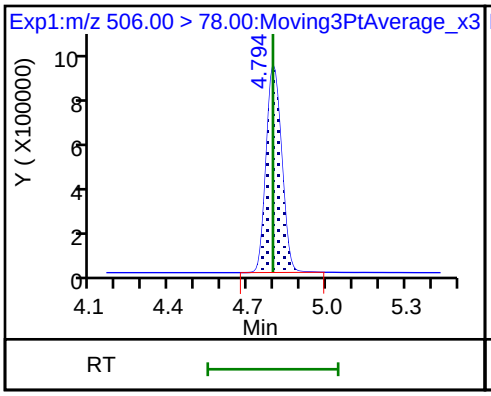
32 9ClFOS



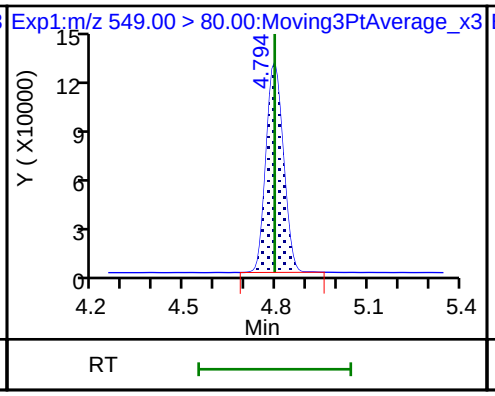
34 Perfluorooctanesulfonamide



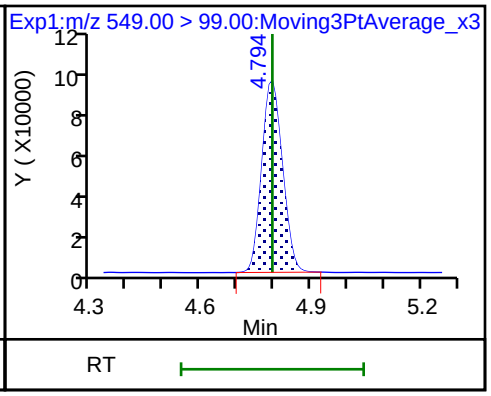
D 33 13C8 FOSA



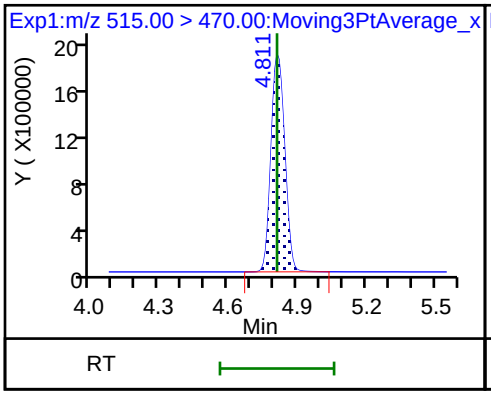
35 Perfluorononanesulfonic acid



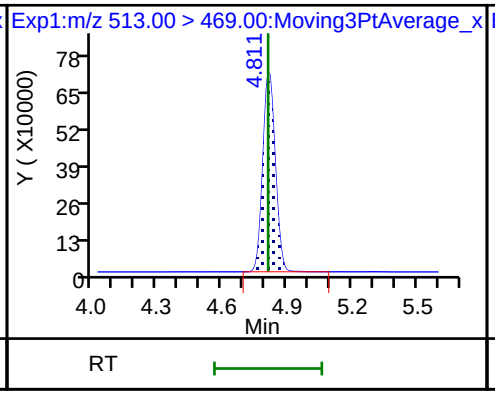
35 Perfluorononanesulfonic acid



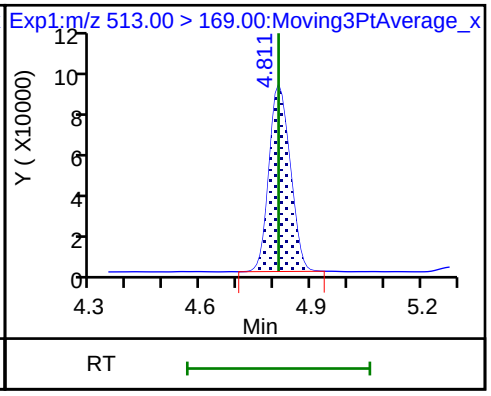
D 39 13C2 PFDA



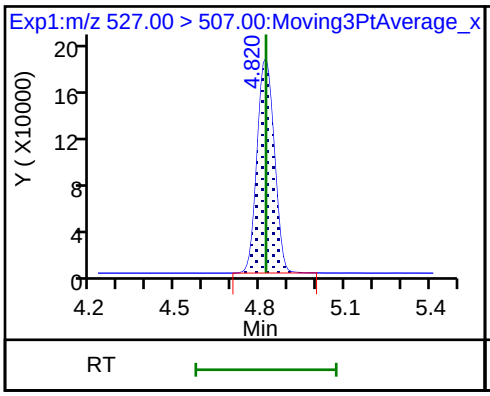
37 Perfluorodecanoic acid



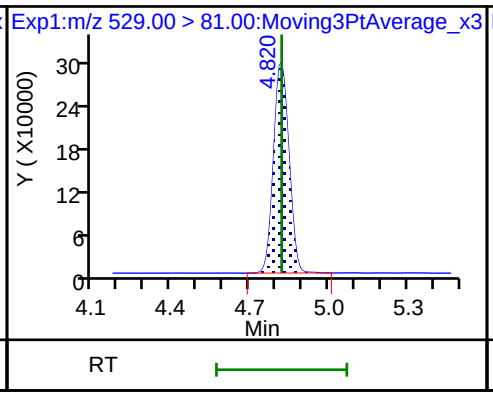
37 Perfluorodecanoic acid



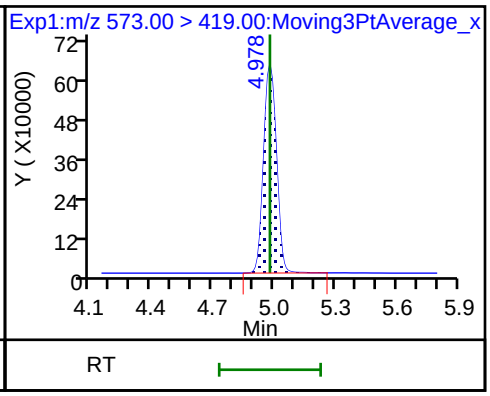
36 8:2 FTS



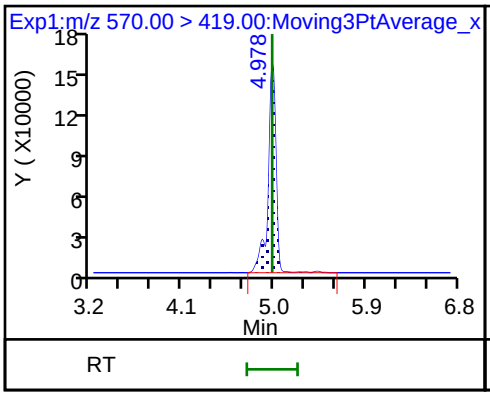
D 38 M2-8:2 FTS



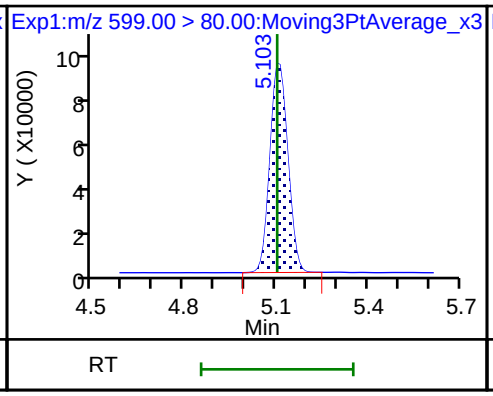
D 40 d3-NMeFOSAA



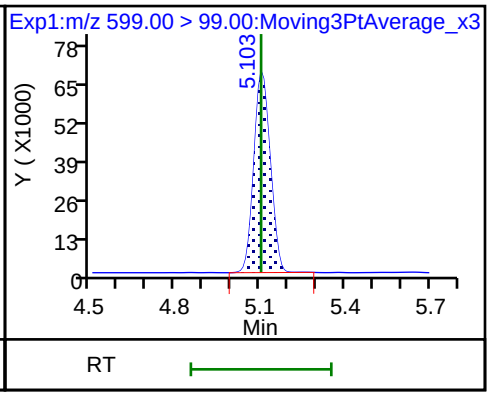
41 NMeFOSAA



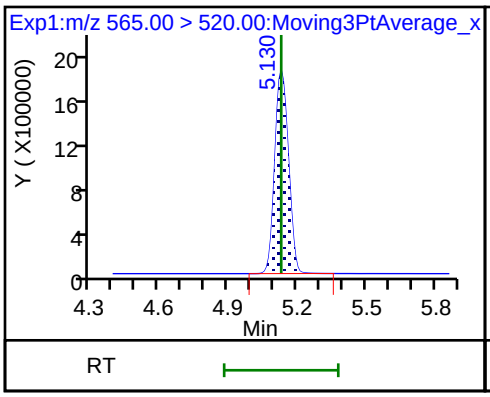
42 Perfluorodecanesulfonic acid



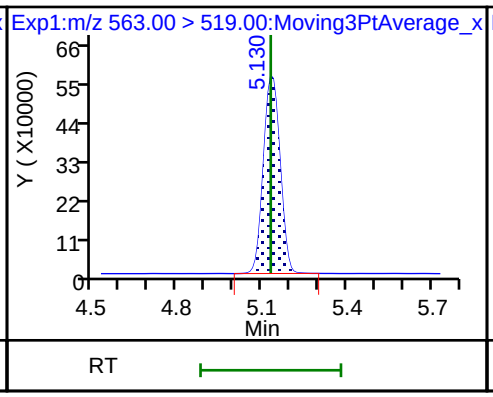
42 Perfluorodecanesulfonic acid



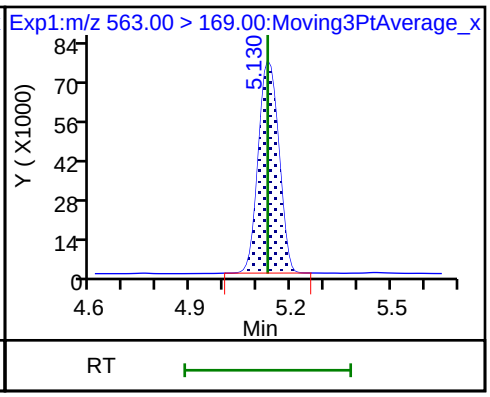
D 43 13C2 PFUnA



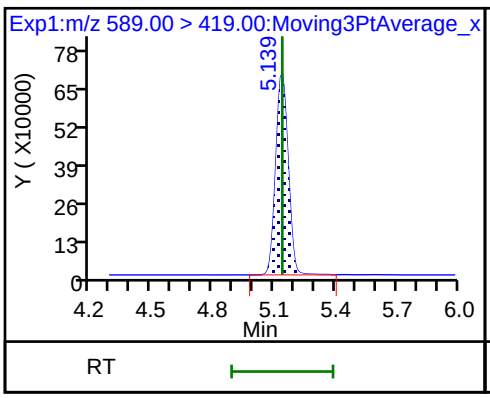
45 Perfluoroundecanoic acid



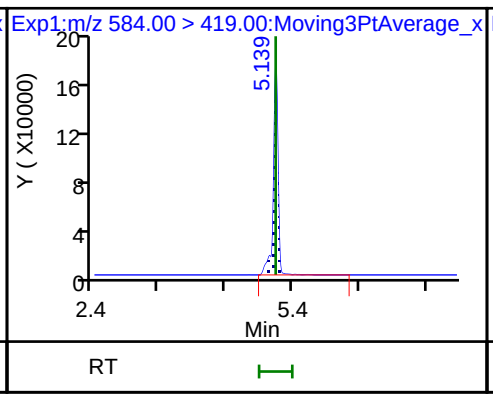
45 Perfluoroundecanoic acid



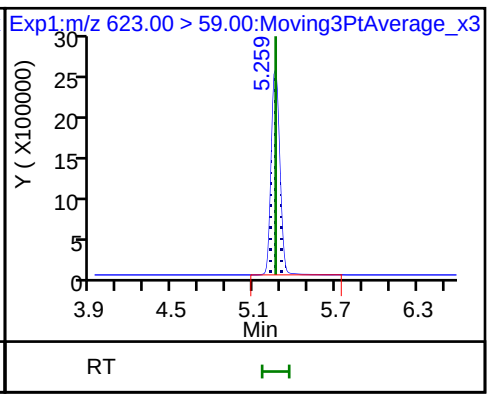
D 44 d5-NEtFOSAA



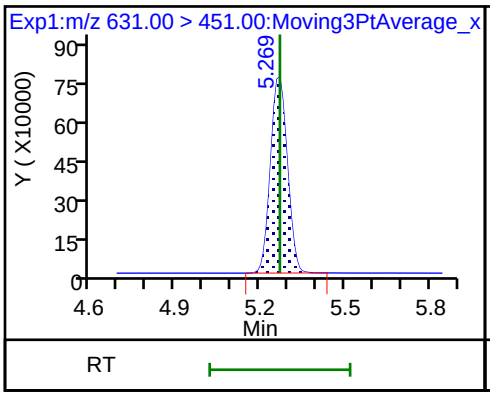
46 NEtFOSA



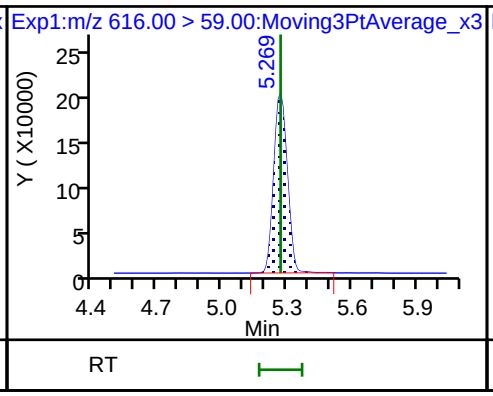
D 47 d7-N-MeFOSE-M



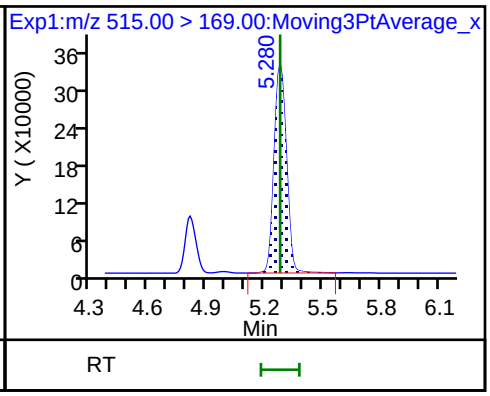
51 11ClFOS



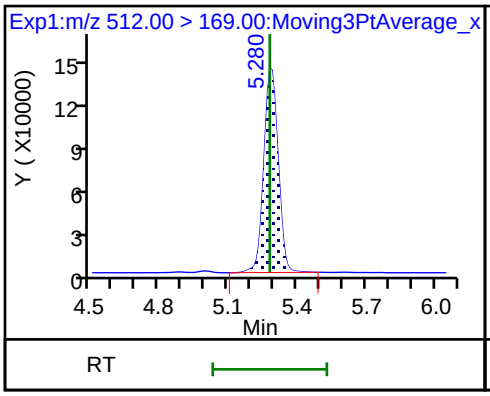
48 N-MeFOSE-M



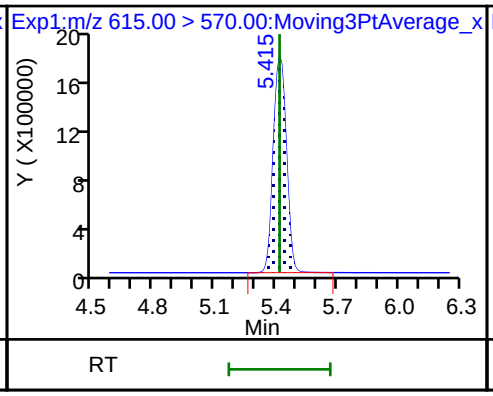
D 49 d-N-MeFOSA-M



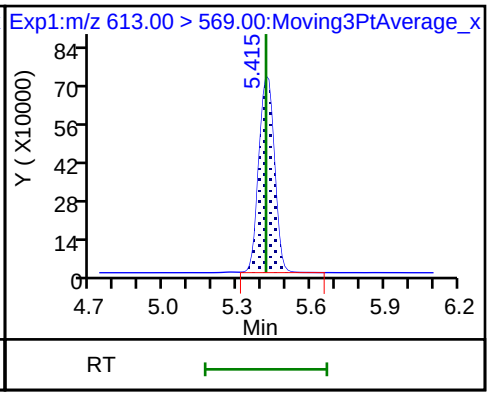
50 NMeFOSA



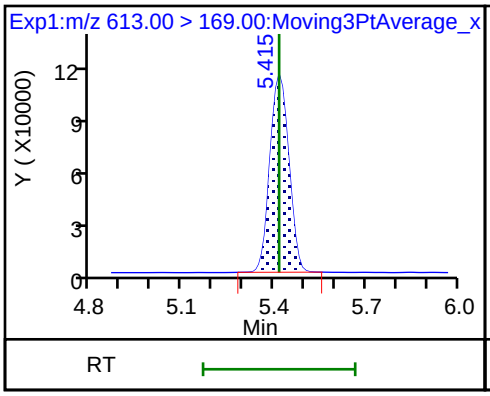
D 56 13C2 PFDoA



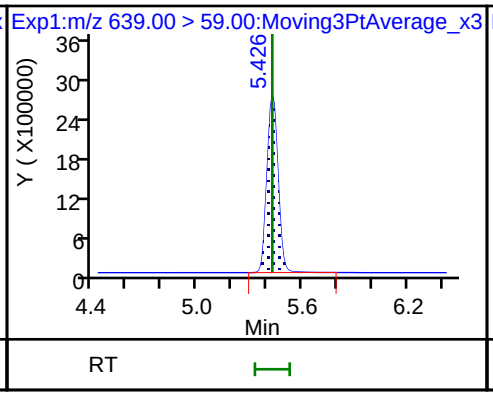
57 Perfluorododecanoic acid



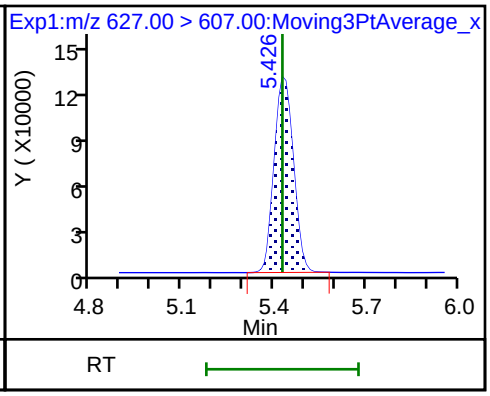
57 Perfluorododecanoic acid



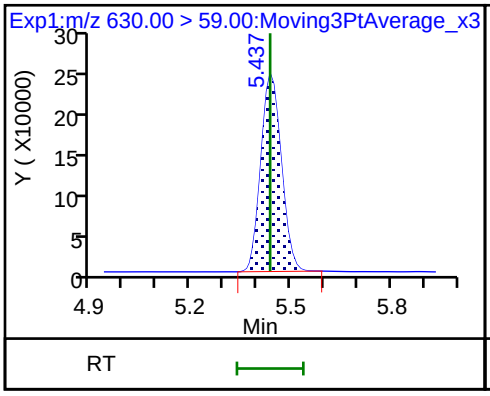
D 52 d9-N-EtFOSE-M



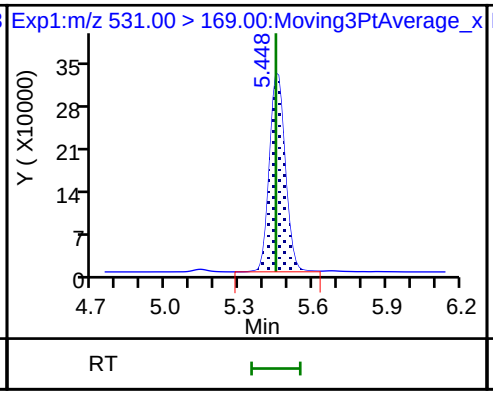
58 10:2 FTS



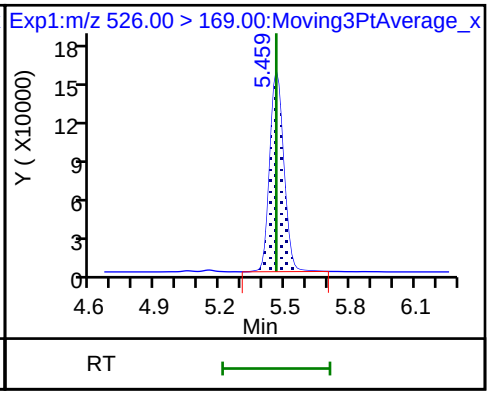
53 N-EtFOSE-M



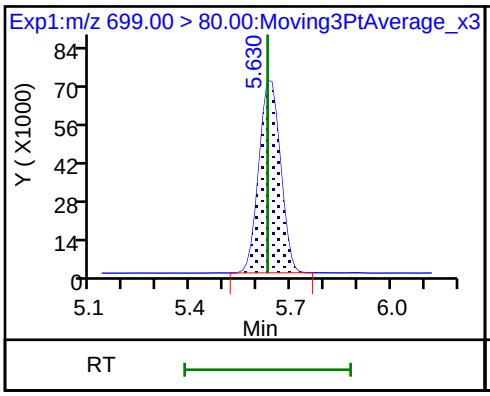
D 54 d-N-EtFOSA-M



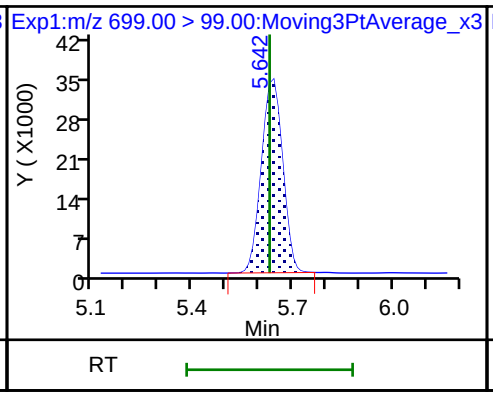
55 N-EtFOSA-M



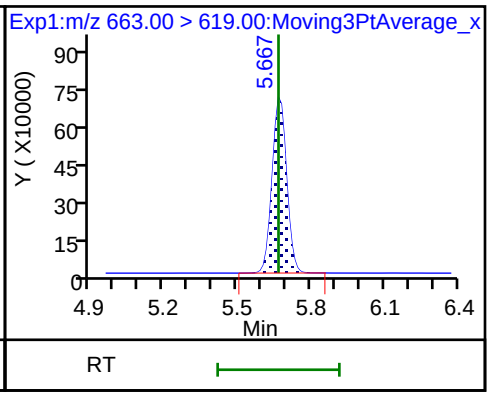
59 PFDoS



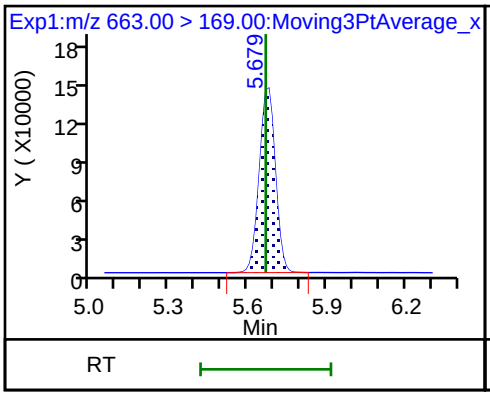
59 PFDoS



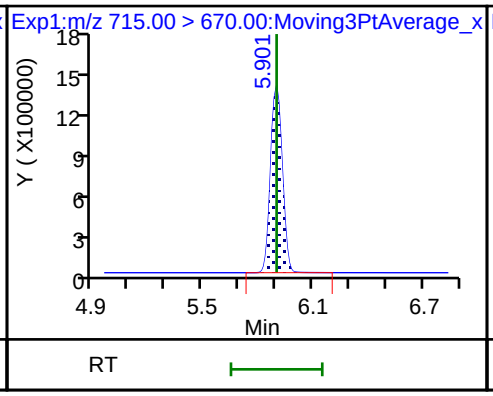
60 Perfluorotridecanoic acid



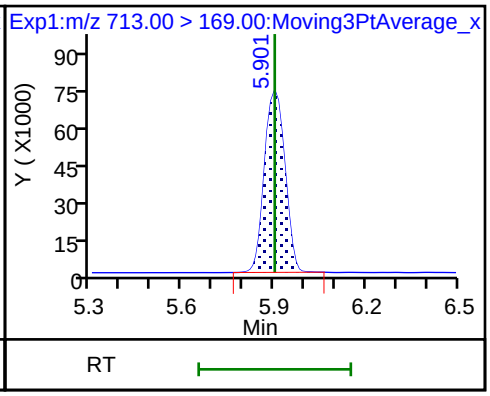
60 Perfluorotridecanoic acid



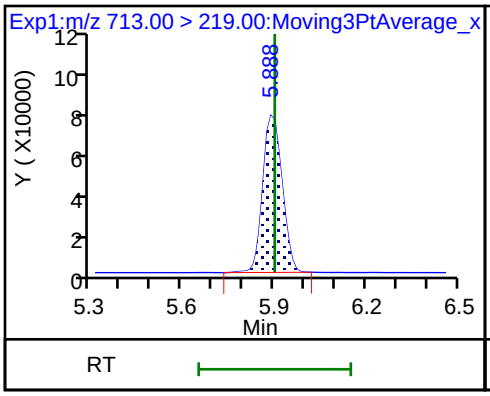
D 61 13C2 PFTeDA



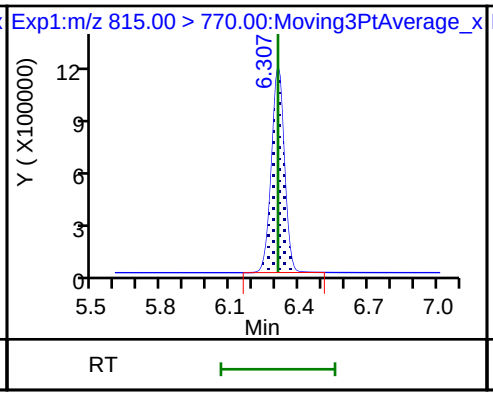
62 Perfluorotetradecanoic acid



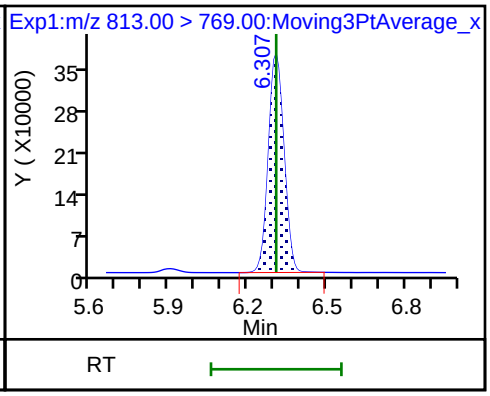
62 Perfluorotetradecanoic acid



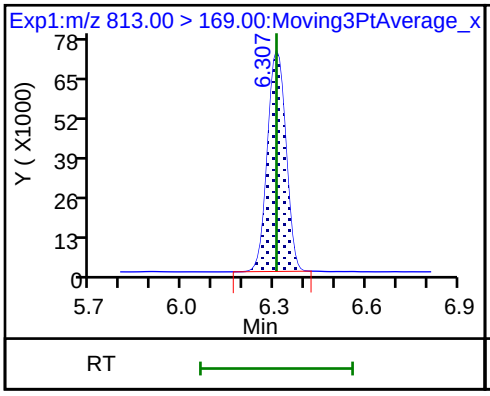
D 64 13C2 PFHxDA



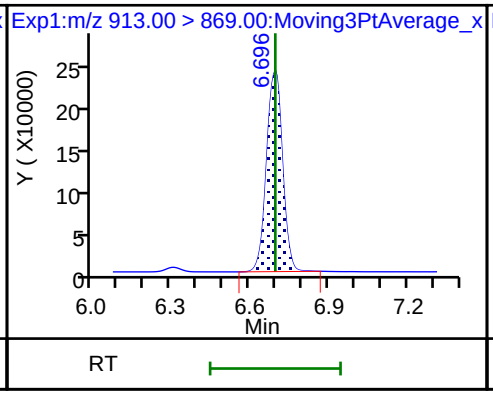
63 Perfluorohexadecanoic acid



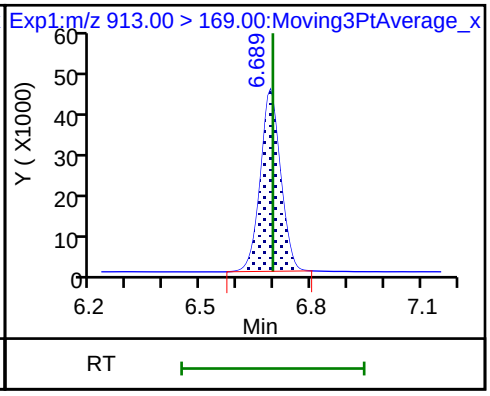
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383454/12 Calibration Date: 06/04/2020 13:29

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.04_A18_PFC_AA_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid	AveID	0.8517	0.8829		1.04	1.00	3.7	40.0
Perfluoropentanoic acid (PFPeA)	AveID	0.9630	0.9485		0.985	1.00	-1.5	40.0
Perfluorobutanesulfonic acid (PFBS)	AveID	0.9751	0.9619		0.872	0.884	-1.4	50.0
4:2 FTS	AveID	2.096	2.190		0.976	0.934	4.5	50.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9300	0.9269		0.997	1.00	-0.3	40.0
Perfluoropentanesulfonic acid (PFPeS)	AveID	0.7168	0.6883		0.901	0.938	-4.0	50.0
HFPO-DA (GenX)	AveID	0.9456	1.006		1.06	1.00	6.4	40.0
Perfluoroheptanoic acid	AveID	0.9856	1.006		1.02	1.00	2.0	40.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.151	1.120		0.885	0.910	-2.7	40.0
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	AveID	15.91	15.80		0.935	0.942	-0.7	50.0
6:2 FTS	AveID	2.003	2.071		0.980	0.948	3.4	40.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.514	1.582		0.995	0.952	4.5	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.013	1.015		1.00	1.00	0.3	40.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.009	1.017		0.936	0.928	0.8	40.0
Perfluorononanoic acid (PFNA)	AveID	0.9614	0.9325		0.970	1.00	-3.0	40.0
F-53B Major	AveID	4.948	5.017		0.945	0.932	1.4	50.0
Perfluorononanesulfonic acid (PFNS)	AveID	0.7814	0.8503		1.04	0.960	8.8	50.0
Perfluorooctanesulfonamide (FOSA)	AveID	0.9186	0.9207		1.00	1.00	0.2	40.0
8:2 FTS	AveID	1.536	1.632		1.02	0.958	6.2	40.0
Perfluorodecanoic acid (PFDA)	AveID	0.8950	0.8762		0.979	1.00	-2.1	40.0
N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	AveID	0.7080	0.7429		1.05	1.00	4.9	40.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.5780	0.6266		1.04	0.964	8.4	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	0.7407	0.8173		1.10	1.00	10.3	40.0
NEtFOSAA	AveID	0.7021	0.6392		0.910	1.00	-9.0	40.0
F-53B Minor	AveID	5.427	5.490		0.953	0.942	1.2	50.0
NMeFOSE	AveID	0.9823	1.055		1.07	1.00	7.4	40.0
NMeFOSA	AveID	0.9235	1.049		1.14	1.00	13.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9313	1.037		1.11	1.00	11.4	40.0
10:2 FTS	AveID	1.215	1.218		0.967	0.964	0.3	50.0
NEtFOSE	AveID	1.004	1.018		1.01	1.00	1.4	40.0
NEtFOSA	AveID	1.045	1.160		1.11	1.00	11.0	40.0
Perfluorododecanesulfonic acid (PFDoS)	AveID	0.5352	0.5340		0.966	0.968	-0.2	50.0
Perfluorotridecanoic acid (PFTriA)	AveID	0.8742	0.8666		0.991	1.00	-0.9	50.0

FORM VII 537 (modified)

FORM VII
LCMS CONTINUING CALIBRATION DATA

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Lab Sample ID: CCV 320-383454/12 Calibration Date: 06/04/2020 13:29

Instrument ID: A18 Calib Start Date: 06/03/2020 20:49

GC Column: Gemini C18 3x50 ID: 3.00(mm) Calib End Date: 06/03/2020 21:52

Lab File ID: 2020.06.04_A18_PFC_AA_026.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorotetradecanoic acid (PFTeA)	AveID	0.1331	0.1344		1.01	1.00	1.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9942		1.12	1.00	12.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.5363	0.5819		1.09	1.00	8.5	50.0
13C4 PFBA	Ave	1.247	1.213		2.43	2.50	-2.7	50.0
13C5 PFPeA	Ave	1.118	1.083		2.42	2.50	-3.1	50.0
13C3 PFBS	Ave	0.8747	0.9616		2.56	2.33	9.9	50.0
M2-4:2 FTS	Ave	0.1422	0.1510		2.48	2.34	6.2	50.0
13C2 PFHxA	Ave	1.114	1.174		2.63	2.50	5.4	50.0
13C3 HFPO-DA	Ave	0.2176	0.2273		2.61	2.50	4.4	50.0
13C4 PFHpA	Ave	0.9885	1.013		2.56	2.50	2.5	50.0
18O2 PFHxS	Ave	0.4173	0.4335		2.46	2.37	3.9	50.0
M2-6:2 FTS	Ave	0.1146	0.1215		2.52	2.38	6.0	50.0
13C4 PFOA	Ave	0.9904	1.007		2.54	2.50	1.7	50.0
13C4 PFOS	Ave	0.1771	0.1847		2.49	2.39	4.3	50.0
13C5 PFNA	Ave	0.8069	0.8245		2.55	2.50	2.2	50.0
13C8 FOSA	Ave	0.3929	0.4000		2.54	2.50	1.8	50.0
13C2 PFDA	Ave	0.8716	0.8801		2.52	2.50	1.0	50.0
M2-8:2 FTS	Ave	0.1448	0.1473		2.44	2.40	1.7	50.0
d3-NMeFOSAA	Ave	0.3238	0.3211		2.48	2.50	-0.8	50.0
13C2 PFUnA	Ave	0.8155	0.8250		2.53	2.50	1.2	50.0
d5-NEtFOSAA	Ave	0.3303	0.3358		2.54	2.50	1.7	50.0
d7-N-MeFOSE-M	Ave	0.2336	0.2108		11.3	12.5	-9.7	50.0
d-N-MeFOSA-M	Ave	0.1846	0.1750		2.37	2.50	-5.2	50.0
13C2 PFDoA	Ave	0.8615	0.9367		2.72	2.50	8.7	50.0
d9-N-EtFOSE-M	Ave	0.2653	0.2781		13.1	12.5	4.8	50.0
d-N-EtFOSA-M	Ave	0.1896	0.1739		2.29	2.50	-8.3	50.0
13C2 PFTeDA	Ave	0.7207	0.7105		2.46	2.50	-1.4	50.0
13C2 PFHxDA	Ave	0.5104	0.4872		2.39	2.50	-4.5	50.0
13C8 PFOA	Ave	0.8173	0.8639		2.59	2.45	5.7	50.0
13C8 PFOS	Ave	0.0612	0.0640		2.50	2.39	4.5	50.0

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_026.d
Lims ID: CCV L4
Client ID:
Sample Type: CCV
Inject. Date: 04-Jun-2020 13:29:21 ALS Bottle#: 52 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: CCV L4
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18
Sublist: chrom-PFAS_A18V2*sub1

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 07:50:39 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1005

First Level Reviewer: ruangyotsakuld Date: 05-Jun-2020 07:50:39
Ratio Calibration: Average of Initial Calibration

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	2.563	2.563	0.0	0.626	10344686	2.43		97.3	9054	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.563	2.563	0.0	1.000	3653474	1.04		104	389	
D 4 13C5 PFPeA										
267.90 > 223.00	2.927	2.927	0.0	0.715	9237324	2.42		96.9	5375	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.927	2.927	0.0	1.000	3504804	0.9850		98.5	74.5	
D 9 13C3 PFBS										
301.90 > 80.00	2.971	2.971	0.0	0.725	7627387	2.56		110	3728	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.971	2.971	0.0	1.000	2789539	0.8720	Target=2.25	98.6	1202	
298.90 > 99.00	2.971	2.971	0.0	1.000	1234263		2.26(1.13-3.38)		373	
8 4:2 FTS										
327.00 > 307.00	3.265	3.265	0.0	1.000	1053845	0.9758		104	4146	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.265	3.265	0.0	0.797	1202916	2.48		106	756	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.307	3.307	0.0	1.000	3711843	1.00	Target=11.49	99.7	162	
313.00 > 119.00	3.307	3.307	0.0	1.000	312054		11.89(5.74-17.23)		288	
D 11 13C2 PFHxA										
315.00 > 270.00	3.307	3.307	0.0	0.807	10011424	2.63		105	8393	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.328	3.328	0.0	1.120	2117874	0.9006	Target=2.74	96.0	1197	
349.00 > 99.00	3.328	3.328	0.0	1.120	806454		2.63(1.37-4.12)		766	
13 HPFO-DA										
285.00 > 169.00	3.424	3.424	0.0	1.000	780021	1.06		106	2133	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.424	3.424	0.0	0.836	1938456	2.61		104	4723	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.706	3.706	0.0	1.000	3474152	1.02	Target=3.25	102	340	
363.00 > 169.00	3.706	3.706	0.0	1.000	1084823		3.20(1.62-4.87)		1030	
D 18 13C4 PFHpA										
367.00 > 322.00	3.706	3.706	0.0	0.905	8637378	2.56		102	4958	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.716	3.716	0.0	1.000	1506913	0.8851	Target=2.90	97.3	1118	
399.00 > 99.00	3.716	3.716	0.0	1.000	520188		2.90(1.45-4.35)		552	
D 17 18O2 PFHxS										
403.00 > 84.00	3.716	3.716	0.0	0.907	3497668	2.46		104	3299	
19 DONA										
377.00 > 251.00	3.755	3.755	0.0	0.842	9375984	0.9355	Target=2.01	99.3	6164	
377.00 > 85.00	3.755	3.755	0.0	0.842	4689153		2.00(1.00-3.01)		3885	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.072	4.072	0.0	0.994	984705	2.52		106	1609	
21 6:2 FTS										
427.00 > 407.00	4.072	4.072	0.0	1.000	814078	0.9804		103	1604	
$ 26 13C8 PFOA										
421.00 > 376.00	4.088	4.088	0.0	0.998	7213577	2.59		106	6323	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.096	4.096	0.0	0.919	949317	1.00	Target=3.25	105	1979	
449.00 > 99.00	4.088	4.096	-0.008	0.917	296528		3.20(1.63-4.88)		696	
* 23 13C2 PFOA										
415.00 > 370.00	4.096	4.096	0.0		8528915	2.50			5746	
22 Perfluorooctanoic acid										
413.00 > 369.00	4.096	4.096	0.0	1.000	3488118	1.00	Target=2.35	100	711	
413.00 > 169.00	4.096	4.096	0.0	1.000	1365264		2.55(1.18-3.53)		2748	
D 25 13C4 PFOA										
417.00 > 372.00	4.096	4.096	0.0	1.000	8590668	2.54		102	5075	
$ 28 13C8 PFOS										
507.00 > 99.00	4.451	4.451	0.0	1.087	521753	2.50		105	2725	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.459	4.459	0.0	1.000	594725	0.9358	Target=2.41	101	928	
499.00 > 99.00	4.451	4.459	-0.008	0.998	247789		2.40(1.21-3.62)		577	
D 27 13C4 PFOS										
503.00 > 80.00	4.459	4.459	0.0	1.089	1506019	2.49		104	2460	
D 30 13C5 PFNA										
468.00 > 423.00	4.467	4.467	0.0	1.091	7031662	2.55		102	6429	
31 Perfluorononanoic acid										
463.00 > 419.00	4.467	4.467	0.0	1.000	2622751	0.9699	Target=6.74	97.0	609	
463.00 > 169.00	4.467	4.467	0.0	1.000	406917		6.45(3.37-10.11)		725	
32 9ClFOS										
531.00 > 351.00	4.651	4.651	0.0	1.043	2946176	0.9449		101	4067	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.800	4.800	0.0	1.076	514377	1.04	Target=1.37	109	1688	
549.00 > 99.00	4.800	4.800	0.0	1.076	362937		1.42(0.69-2.06)		1256	
D 33 13C8 FOSA										
506.00 > 78.00	4.800	4.800	0.0	1.172	3411209	2.54		102	2603	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.800	4.800	0.0	1.000	1256320	1.00		100	2003	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.817	4.817	0.0	1.000	2630875	0.9790	Target=8.07	97.9	1191	
513.00 > 169.00	4.817	4.817	0.0	1.000	362294		7.26(4.04-12.11)		307	
D 39 13C2 PFDA										
515.00 > 470.00	4.817	4.817	0.0	1.176	7506378	2.52		101	7947	
36 8:2 FTS										
527.00 > 507.00	4.817	4.817	0.0	0.998	785518	1.02		106	2522	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.826	4.826	0.0	1.178	1203505	2.44		102	1400	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.975	4.975	0.0	1.215	2738747	2.48		99.2	1941	
41 NMeFOSAA										
570.00 > 419.00	4.986	4.986	0.0	1.002	813888	1.05		105	5114	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.110	5.110	0.0	1.146	380610	1.04	Target=1.31	108	1250	
599.00 > 99.00	5.110	5.110	0.0	1.146	288325		1.32(0.65-1.96)		1109	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.137	5.137	0.0	1.000	2300200	1.10	Target=6.70	110	1622	
563.00 > 169.00	5.137	5.137	0.0	1.000	349078		6.59(3.35-10.05)		1005	
D 43 13C2 PFUnA										
565.00 > 520.00	5.137	5.137	0.0	1.254	7036401	2.53		101	5954	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.137	5.137	0.0	1.254	2864118	2.54		102	3261	
46 NEtFOSA										
584.00 > 419.00	5.146	5.146	0.0	1.002	732270	0.9103		91.0	9532	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.257	5.257	0.0	1.283	8990561	11.3		90.3	3705	
48 N-MeFOSE-M										
616.00 > 59.00	5.277	5.277	0.0	1.004	758935	1.07		107	1029	
51 11ClFOS										
631.00 > 451.00	5.267	5.267	0.0	1.181	3258689	0.9530		101	5300	
50 NMeFOSA										
512.00 > 169.00	5.288	5.288	0.0	1.000	626082	1.14		114	585	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.288	5.288	0.0	1.291	1492383	2.37		94.8	28.8	
D 56 13C2 PFDoA										
615.00 > 570.00	5.414	5.414	0.0	1.322	7988985	2.72		109	4346	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.425	5.425	0.0	1.002	3314318	1.11	Target=6.20	111	1884	
613.00 > 169.00	5.414	5.425	-0.011	1.000	515660		6.43(3.10-9.30)		1472	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
58 10:2 FTS										
627.00 > 607.00	5.436	5.436	0.0	1.126	589936	0.9666		100	2581	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.436	5.436	0.0	1.327	11857528	13.1		105	5725	
53 N-EtFOSE-M										
630.00 > 59.00	5.446	5.446	0.0	1.002	965580	1.01		101	1857	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.457	5.457	0.0	1.332	1482792	2.29		91.7	460	
55 N-EtFOSA-M										
526.00 > 169.00	5.468	5.468	0.0	1.002	687807	1.11		111	448	
59 PFDoS										
699.00 > 80.00	5.640	5.640	0.0	1.265	325730	0.9659	Target=2.11	99.8	1427	
699.00 > 99.00	5.640	5.640	0.0	1.265	154642		2.11(1.06-3.17)		1290	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.677	5.677	0.0	1.049	2769164	0.99	Target=4.98	99.1	2393	
663.00 > 169.00	5.677	5.677	0.0	1.049	564426		4.91(2.49-7.47)		1564	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.901	5.901	0.0	1.441	6060073	2.46		98.6	5362	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.901	5.901	0.0	1.000	325862	1.01	Target=0.96	101	1173	
713.00 > 219.00	5.888	5.901	-0.013	0.998	338647		0.96(0.48-1.43)		2349	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.307	6.307	0.0	1.540	4155581	2.39		95.5	5803	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.307	6.307	0.0	1.000	1652541	1.12	Target=5.10	112	1221	
813.00 > 169.00	6.307	6.307	0.0	1.000	318692		5.19(2.55-7.64)		1958	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.689	6.689	0.0	1.061	967233	1.09	Target=5.50	109	720	
913.00 > 169.00	6.689	6.689	0.0	1.061	168506		5.74(2.75-8.25)		1357	

Reagents:

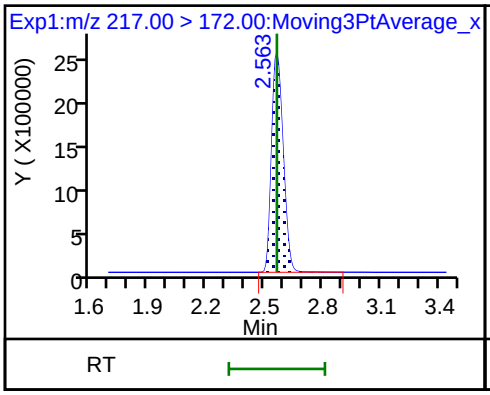
LCPFC_LL4_00026 Amount Added: 1.00 Units: mL

Report Date: 05-Jun-2020 07:50:40 Chrom Revision: 2.3 03-Jun-2020 23:27:16

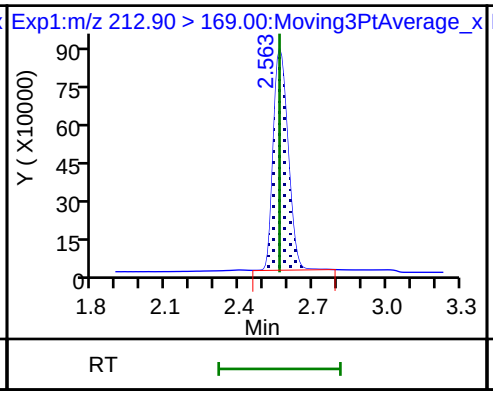
Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96976.b\2020.06.04_A18_PFC_AA_026.d
Injection Date: 04-Jun-2020 13:29:21 Instrument ID: A18
Lims ID: CCV L4
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 52 Worklist Smp#: 12
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL

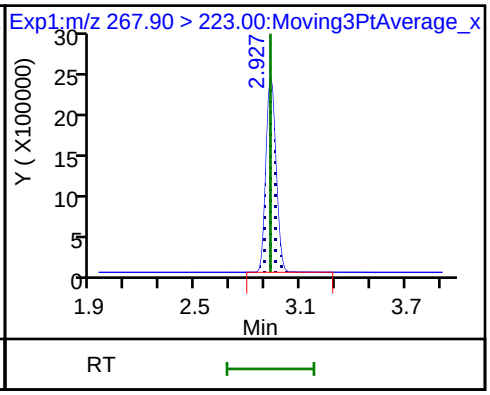
D 1 13C4 PFBA



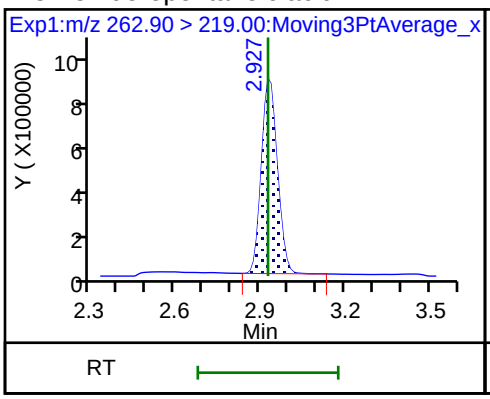
2 Perfluorobutanoic acid



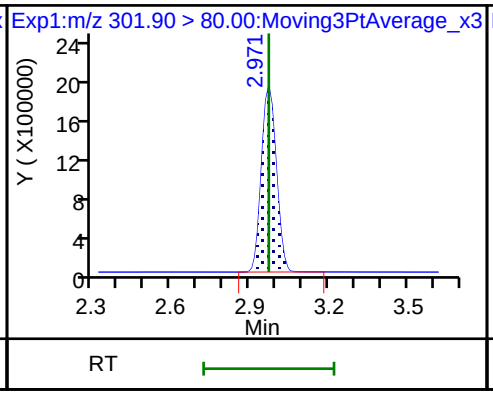
D 4 13C5 PFPeA



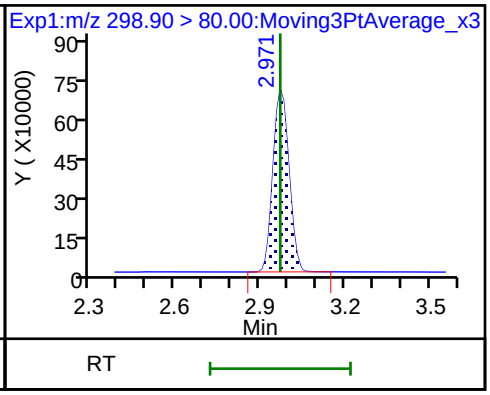
5 Perfluoropentanoic acid



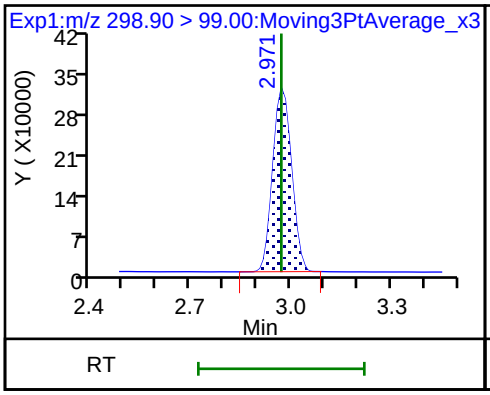
D 9 13C3 PFBS



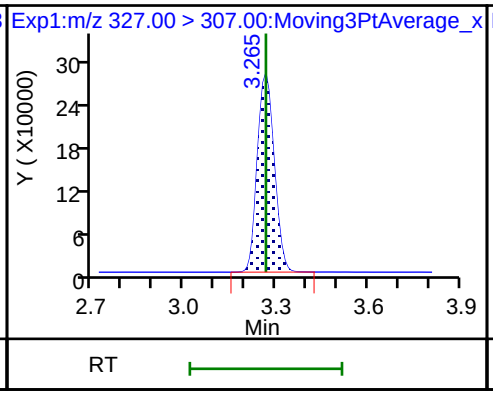
6 Perfluorobutanesulfonic acid



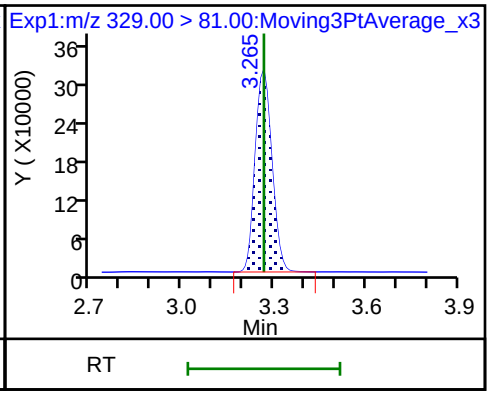
6 Perfluorobutanesulfonic acid



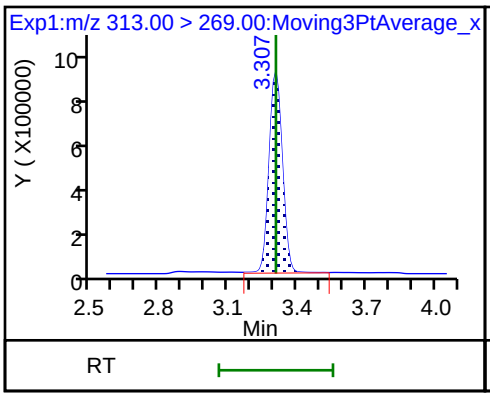
8 4:2 FTS



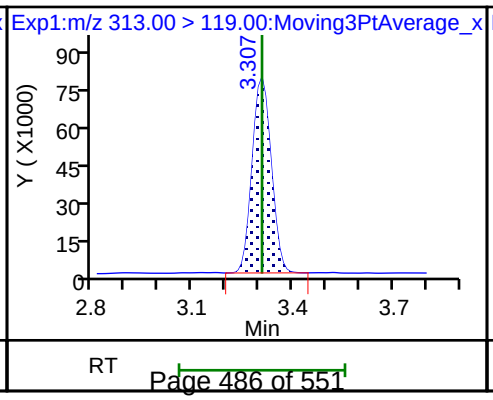
D 7 M2-4:2 FTS



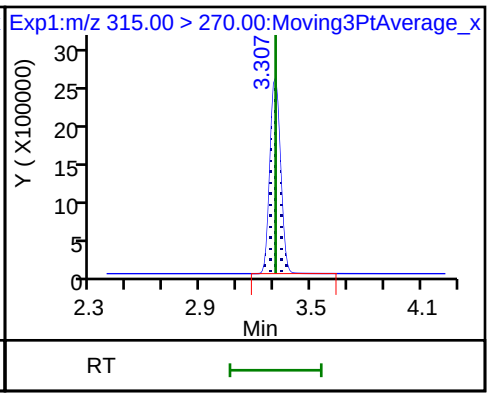
10 Perfluorohexanoic acid



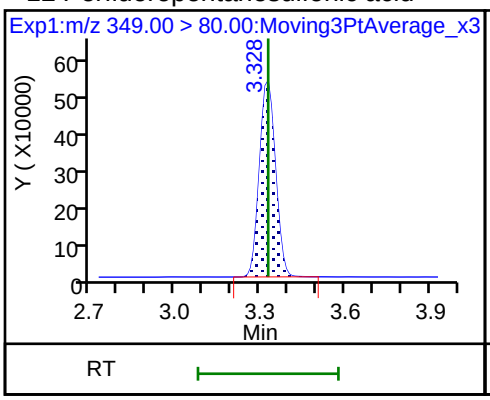
10 Perfluorohexanoic acid



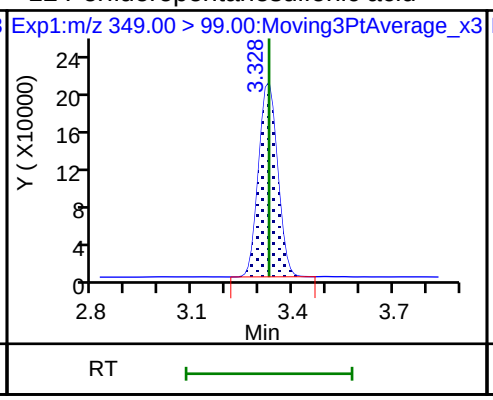
D 11 13C2 PFHxA



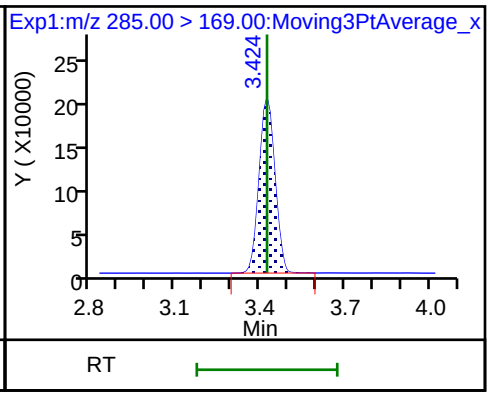
12 Perfluoropentanesulfonic acid



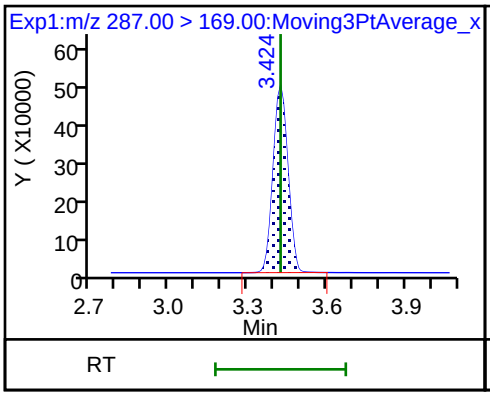
12 Perfluoropentanesulfonic acid



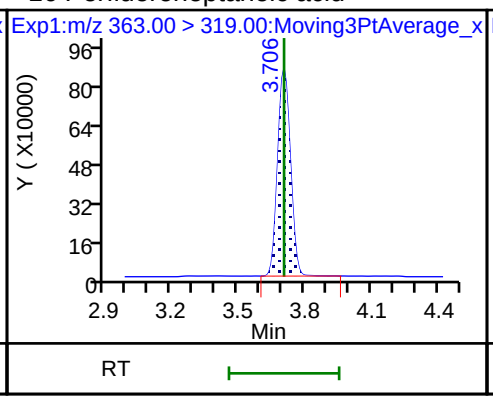
13 HPFO-DA



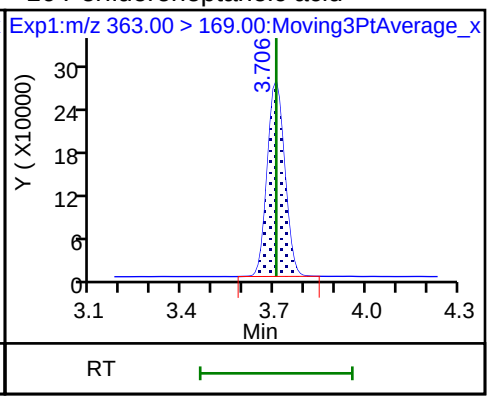
D 14 13C3 HFPO-DA



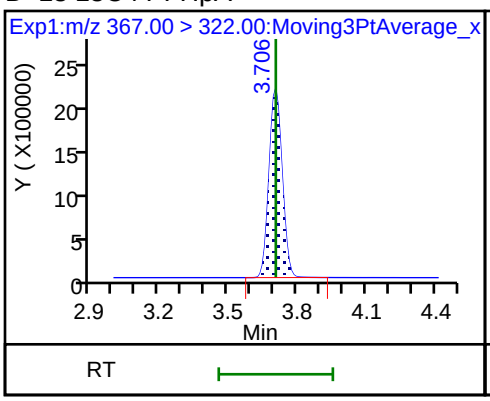
16 Perfluoroheptanoic acid



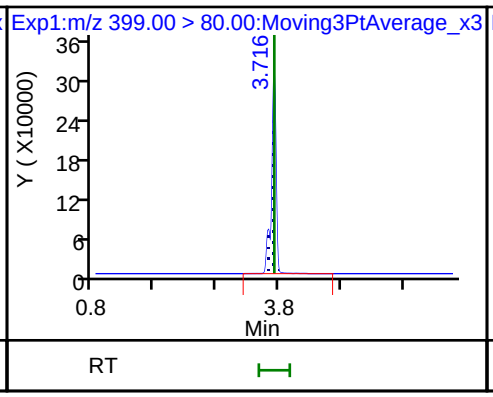
16 Perfluoroheptanoic acid



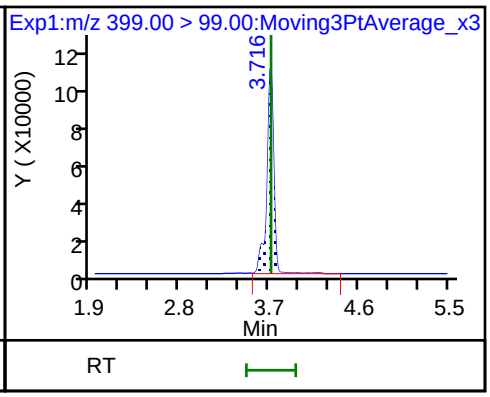
D 18 13C4 PFHpA



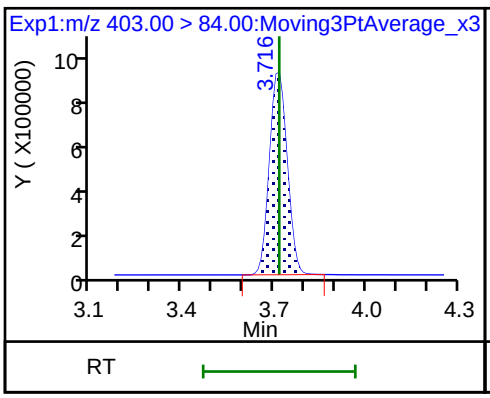
15 Perfluorohexanesulfonic acid



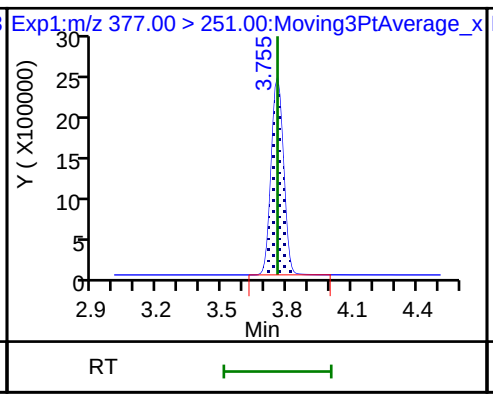
15 Perfluorohexanesulfonic acid



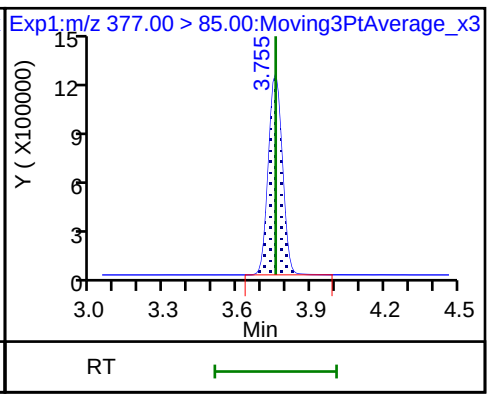
D 17 18O2 PFHxS



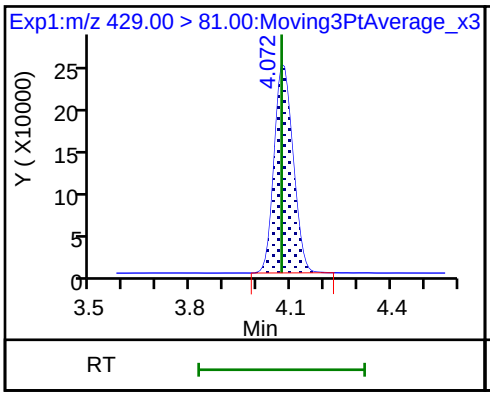
19 DONA



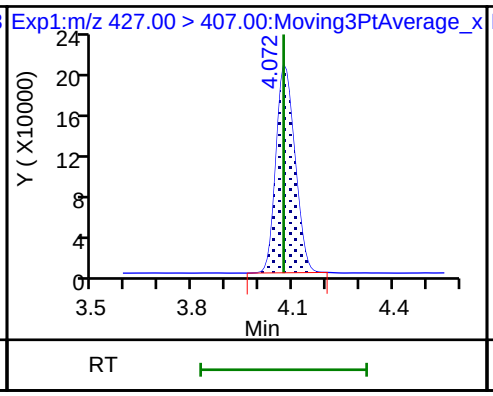
19 DONA



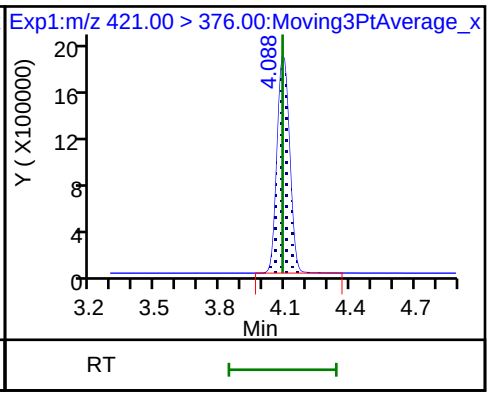
D 20 M2-6:2 FTS



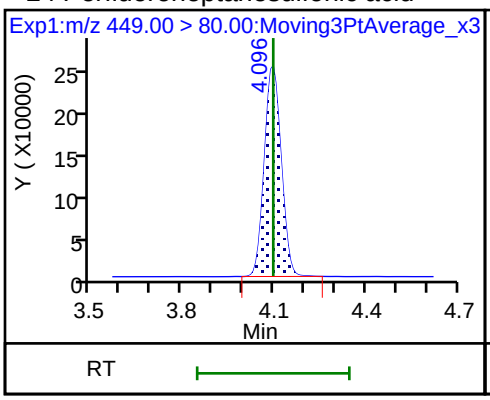
21 6:2 FTS



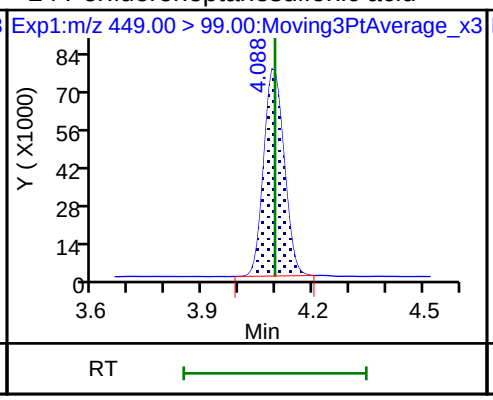
$ 26 13C8 PFOA



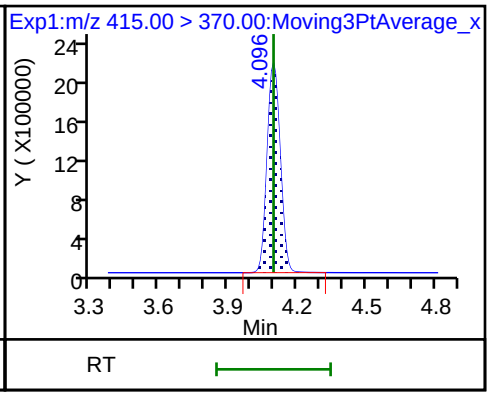
24 Perfluoroheptanesulfonic acid



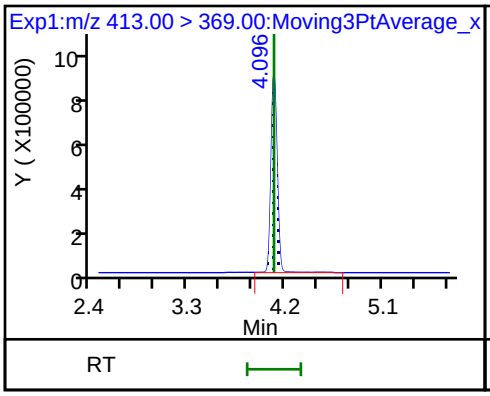
24 Perfluoroheptanesulfonic acid



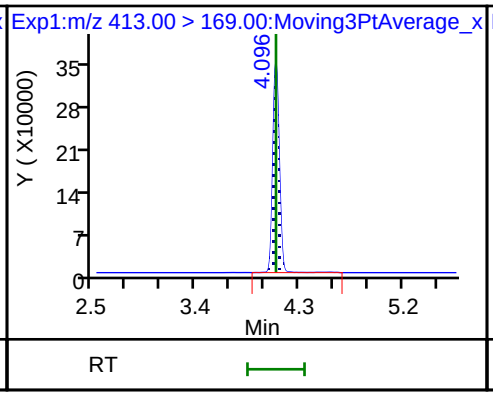
* 23 13C2 PFOA



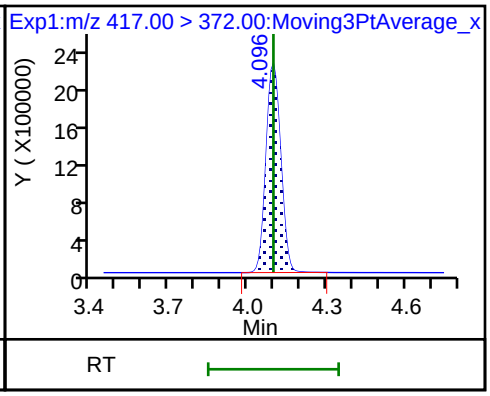
22 Perfluorooctanoic acid



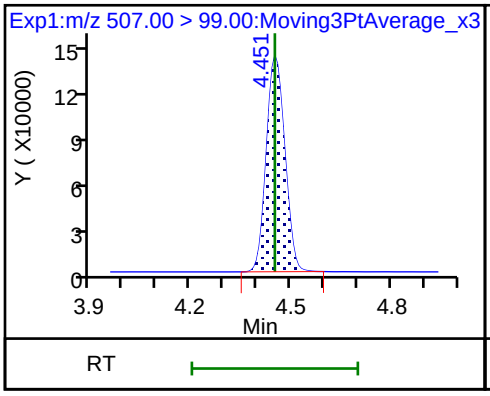
22 Perfluorooctanoic acid



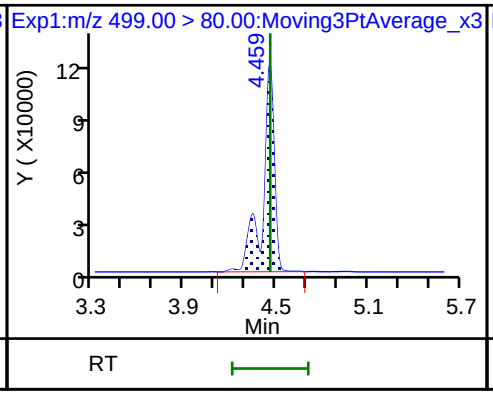
D 25 13C4 PFOA



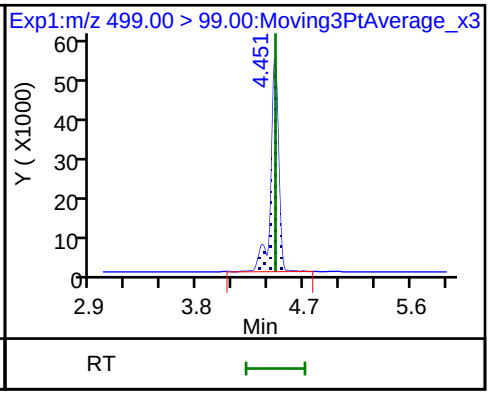
$ 28 13C8 PFOS



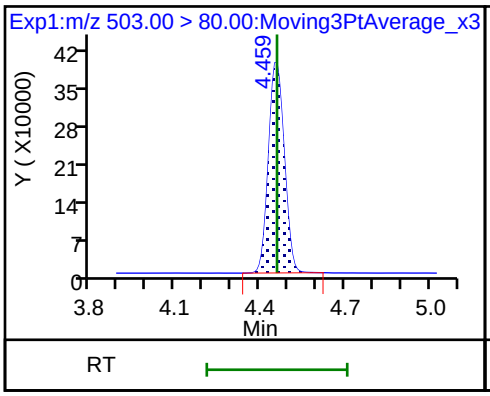
29 Perfluorooctanesulfonic acid



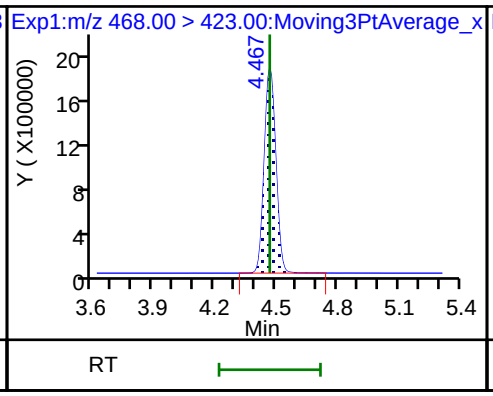
29 Perfluorooctanesulfonic acid



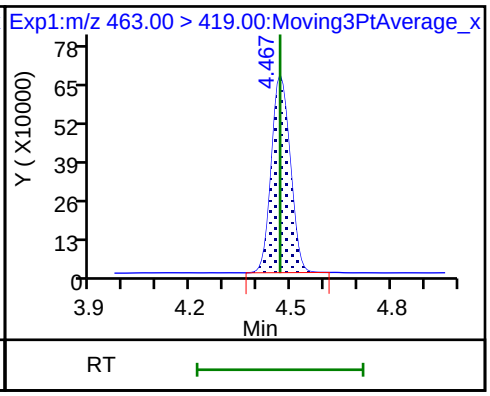
D 27 13C4 PFOS



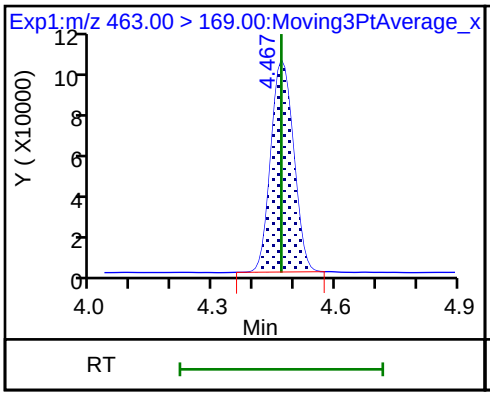
D 30 13C5 PFNA



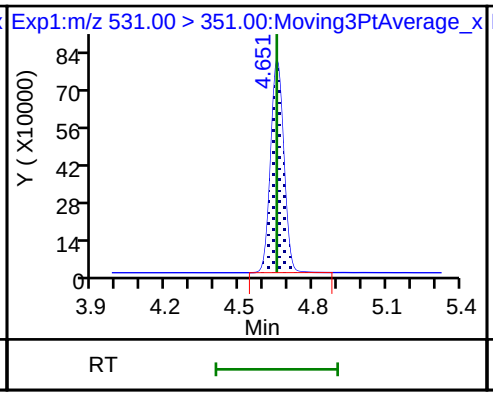
31 Perfluorononanoic acid



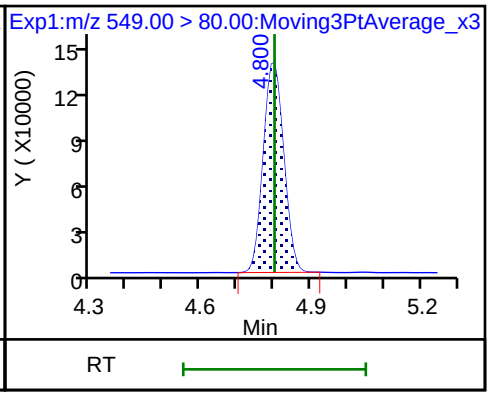
31 Perfluorononanoic acid



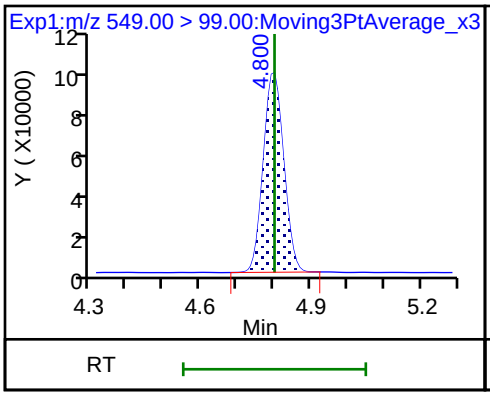
32 9ClFOS



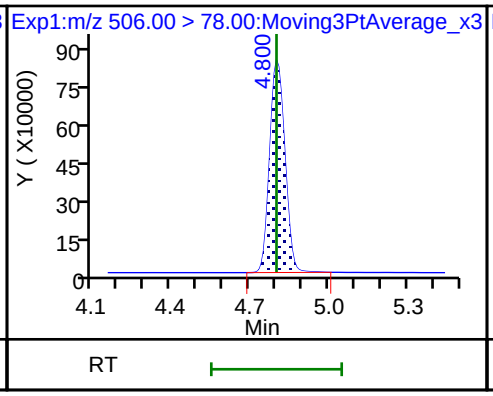
35 Perfluorononanesulfonic acid



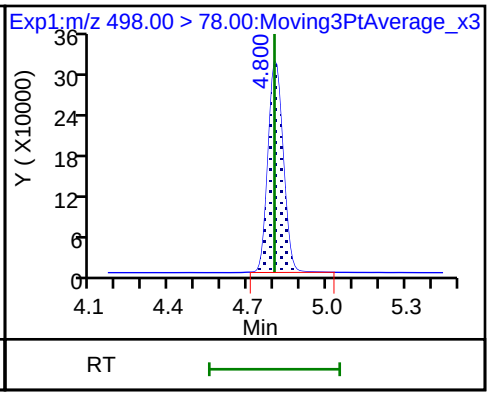
35 Perfluorononanesulfonic acid



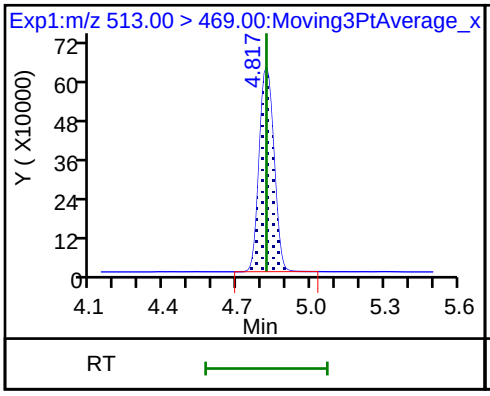
D 33 13C8 FOSA



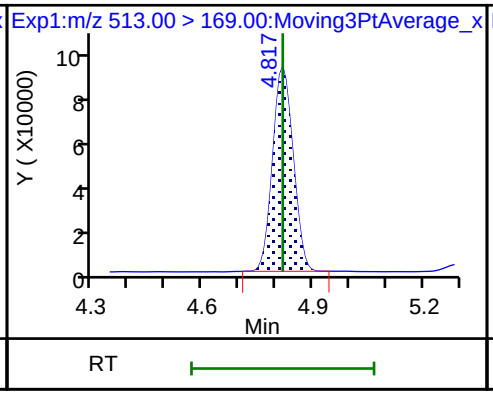
34 Perfluorooctanesulfonamide



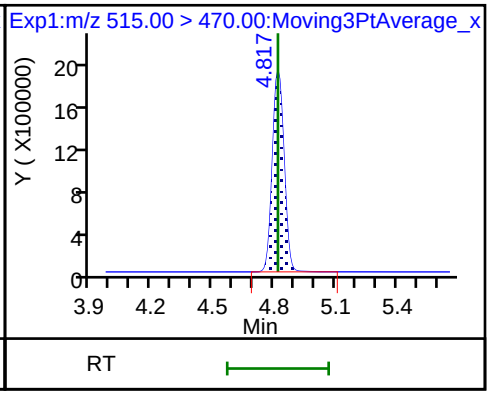
37 Perfluorodecanoic acid



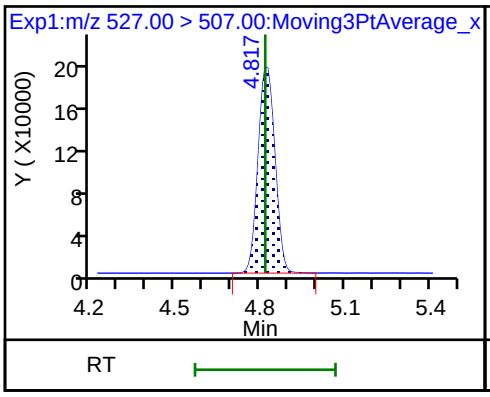
37 Perfluorodecanoic acid



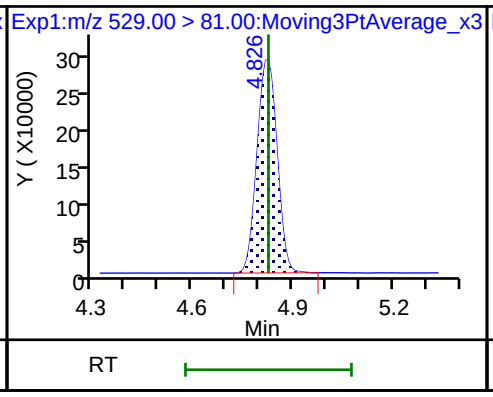
D 39 13C2 PFDA



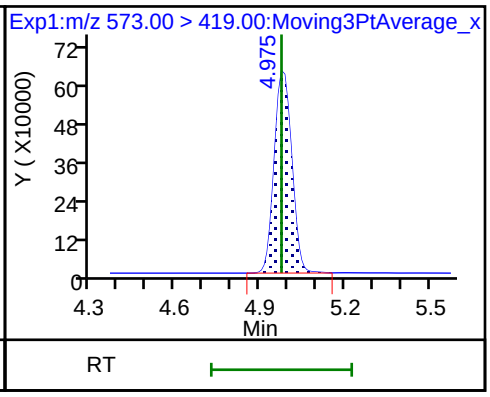
36 8:2 FTS



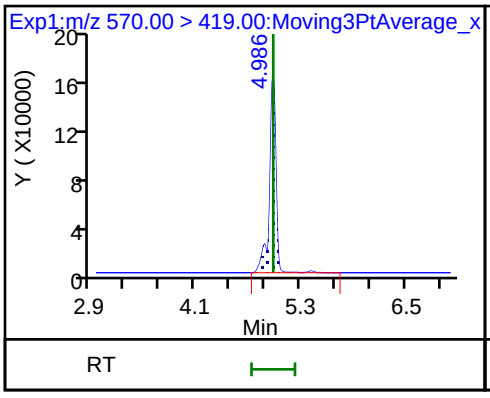
D 38 M2-8:2 FTS



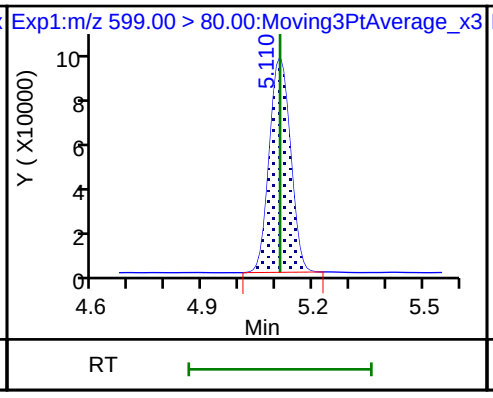
D 40 d3-NMeFOSAA



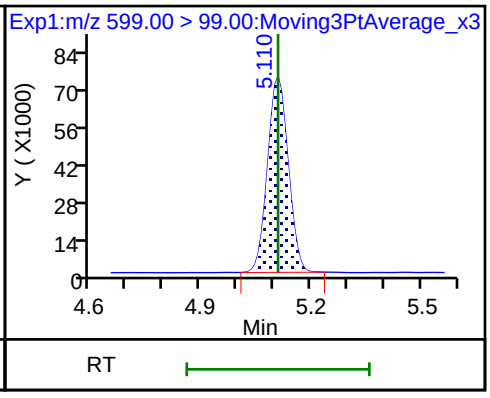
41 NMeFOSAA



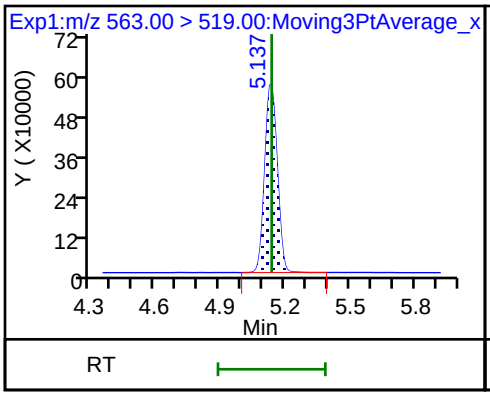
42 Perfluorodecanesulfonic acid



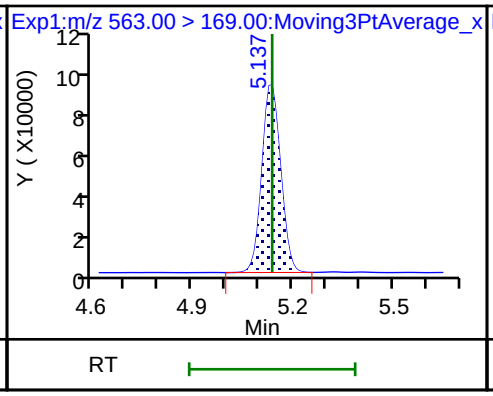
42 Perfluorodecanesulfonic acid



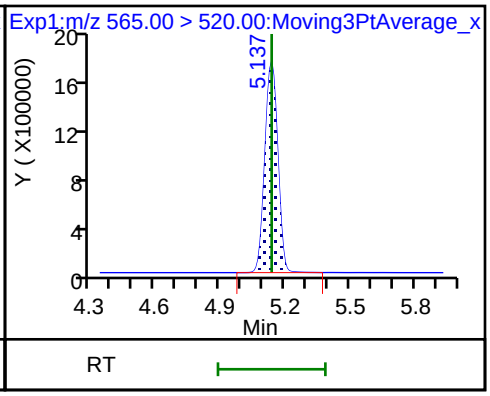
45 Perfluoroundecanoic acid



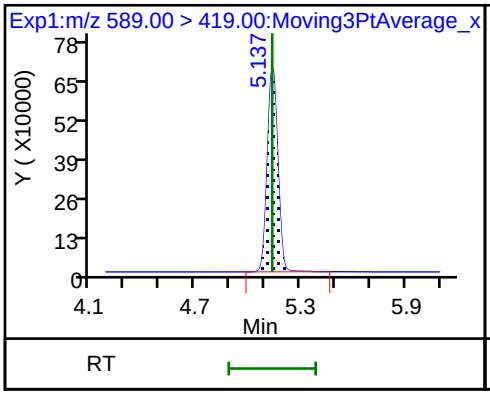
45 Perfluoroundecanoic acid



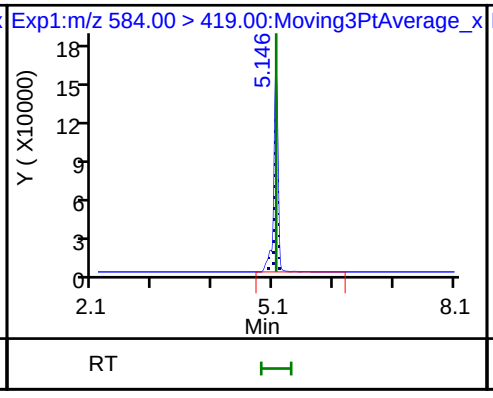
D 43 13C2 PFUnA



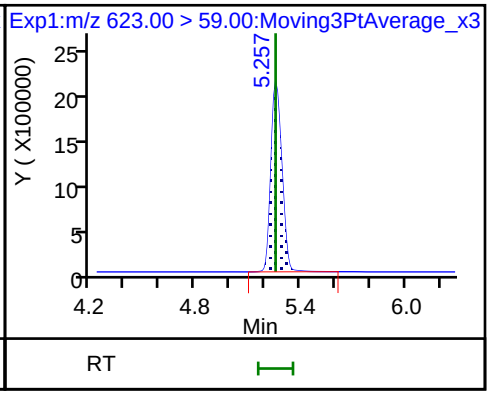
D 44 d5-NEtFOSAA



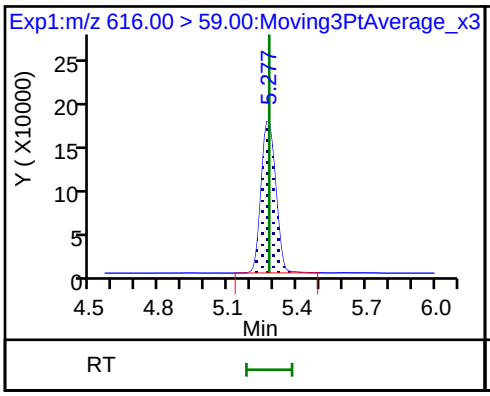
46 NEtFOSA



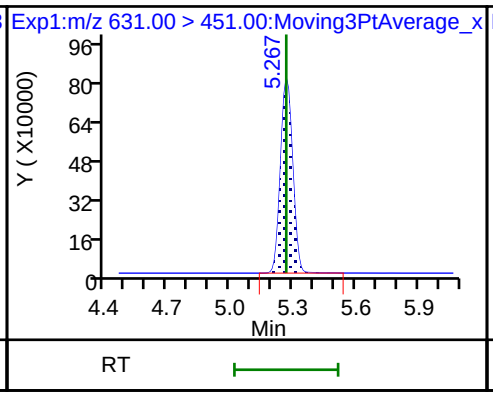
D 47 d7-N-MeFOSE-M



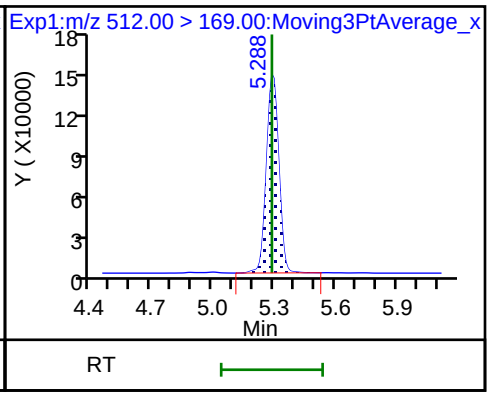
48 N-MeFOSE-M



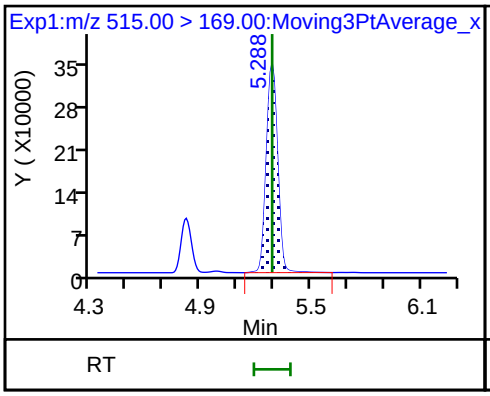
51 11ClFOS



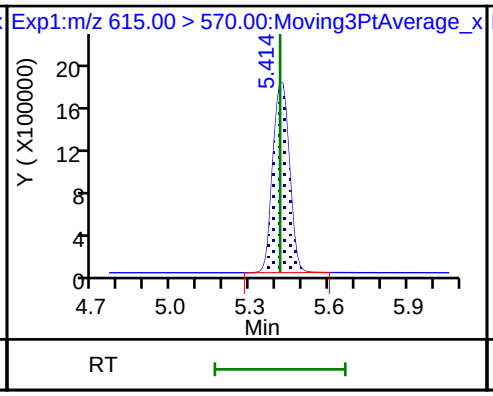
50 NMeFOSA



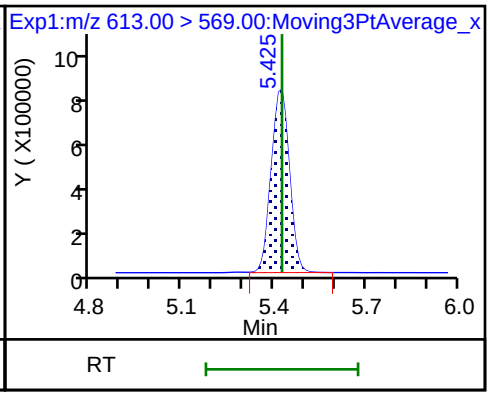
D 49 d-N-MeFOSA-M



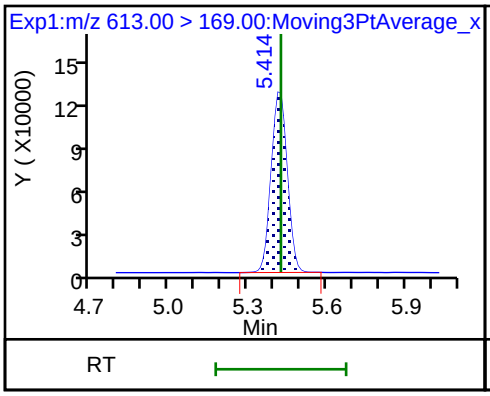
D 56 13C2 PFDoA



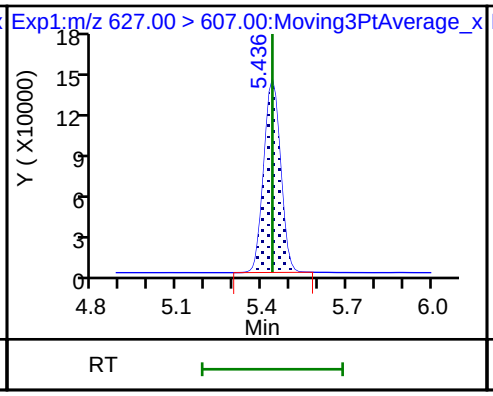
57 Perfluorododecanoic acid



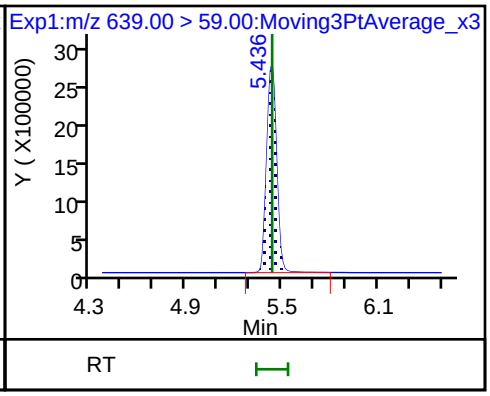
57 Perfluorododecanoic acid



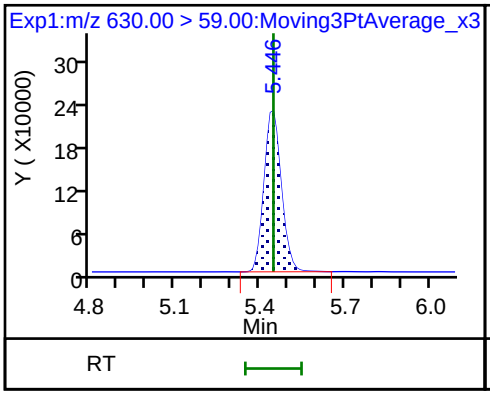
58 10:2 FTS



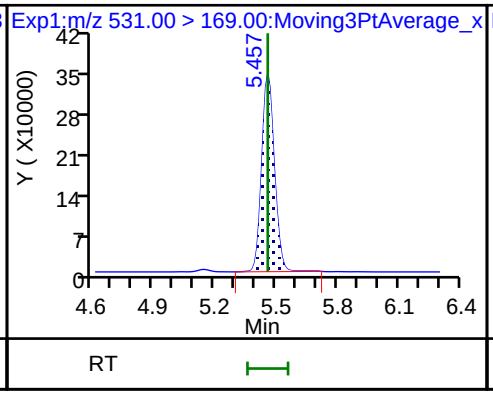
D 52 d9-N-EtFOSE-M



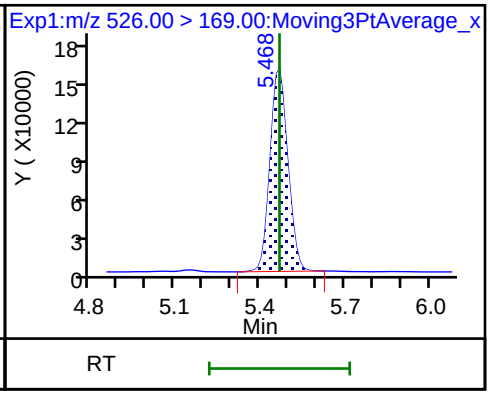
53 N-EtFOSE-M



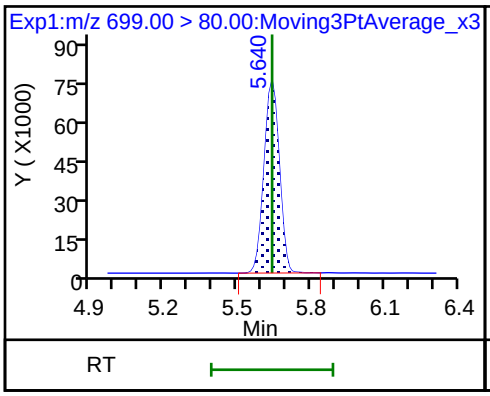
D 54 d-N-EtFOSA-M



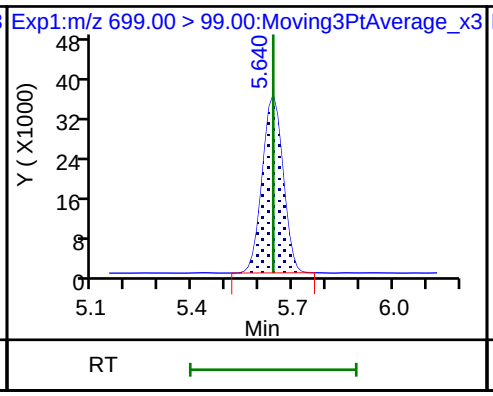
55 N-EtFOSA-M



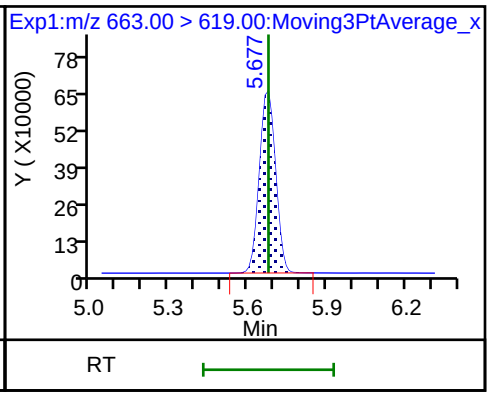
59 PFDoS



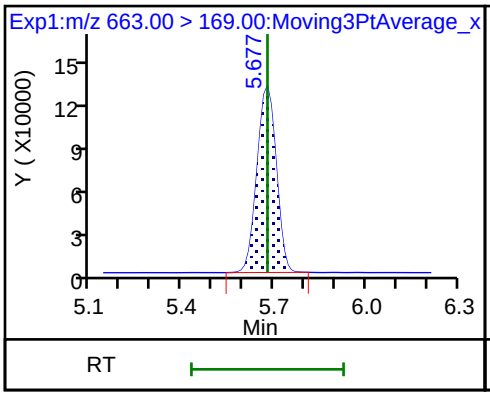
59 PFDoS



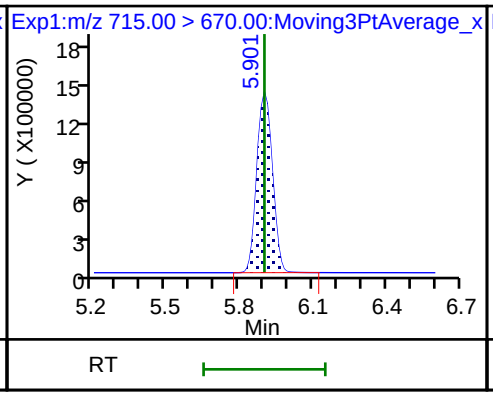
60 Perfluorotridecanoic acid



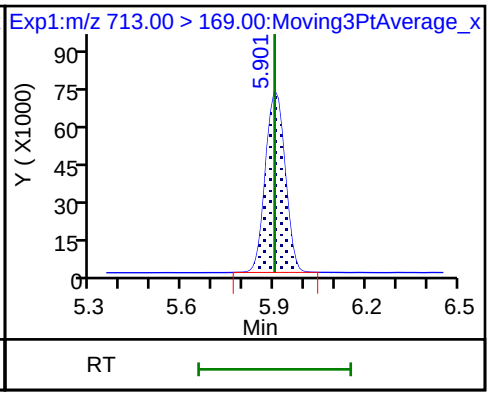
60 Perfluorotridecanoic acid



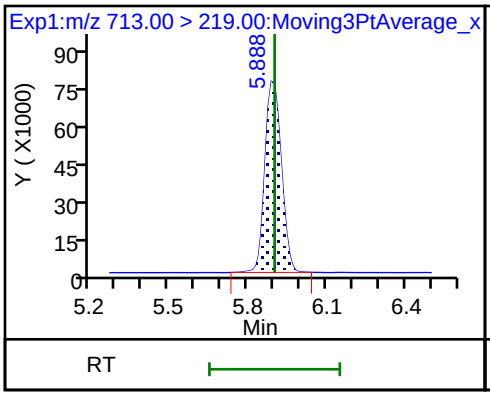
D 61 13C2 PFTeDA



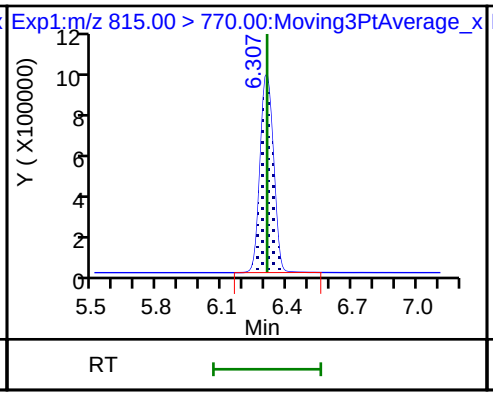
62 Perfluorotetradecanoic acid



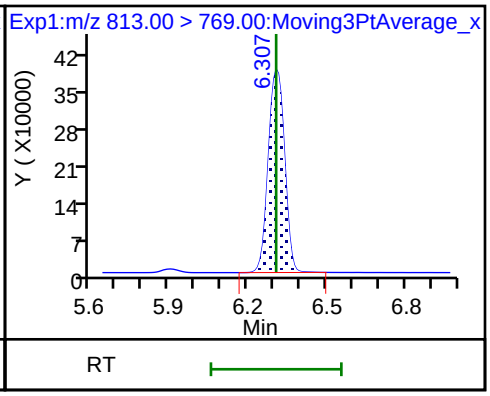
62 Perfluorotetradecanoic acid



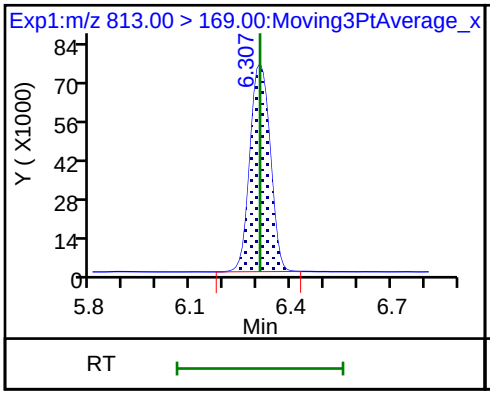
D 64 13C2 PFHxDA



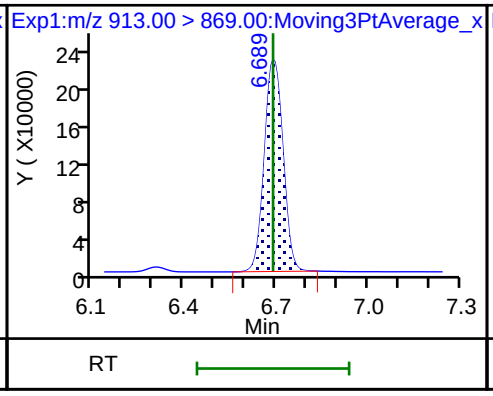
63 Perfluorohexadecanoic acid



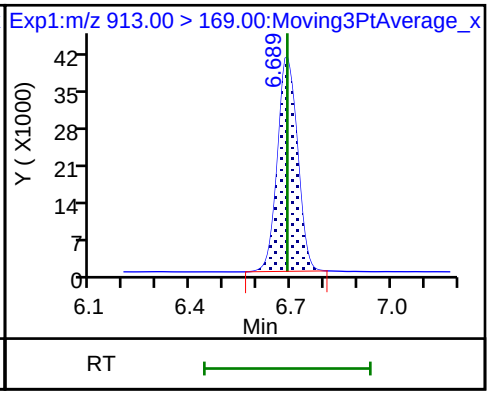
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Client Sample ID: Lab Sample ID: MB 320-383169/1-A

Matrix: Water Lab File ID: 2020.06.04_A18_PFC_A_007.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:28

Sample wt/vol: 250(mL) Date Analyzed: 06/04/2020 09:48

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383436 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	0.387	J	2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	ND		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	ND		2.0	0.58
375-85-9	Perfluoroheptanoic acid	ND		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	ND		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	ND		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	ND		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	ND		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	ND		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	ND		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	ND		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	ND		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	0.274	J	2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	ND		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	ND		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	ND		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	0.514	J	2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	ND		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	ND		20	1.9
27619-97-2	6:2 FTS	ND		20	2.0
39108-34-4	8:2 FTS	ND		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Client Sample ID: Lab Sample ID: MB 320-383169/1-A

Matrix: Water Lab File ID: 2020.06.04_A18_PFC_A_007.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:28

Sample wt/vol: 250(mL) Date Analyzed: 06/04/2020 09:48

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383436 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	88		25-150
STL01893	13C5 PFPeA	91		25-150
STL00993	13C2 PFHxA	93		25-150
STL01892	13C4 PFHpA	93		25-150
STL00990	13C4 PFOA	93		25-150
STL00995	13C5 PFNA	100		25-150
STL00996	13C2 PFDA	95		25-150
STL00997	13C2 PFUnA	97		25-150
STL00998	13C2 PFDoA	79		25-150
STL02116	13C2 PFTeDA	84		25-150
STL02337	13C3 PFBS	92		25-150
STL00994	18O2 PFHxS	94		25-150
STL00991	13C4 PFOS	91		25-150
STL01056	13C8 FOSA	86		25-150
STL02118	d3-NMeFOSAA	80		25-150
STL02117	d5-NEtFOSAA	85		25-150
STL02279	M2-6:2 FTS	108		25-150
STL02280	M2-8:2 FTS	122		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_007.d
Lims ID: MB 320-383169/1-A
Client ID:
Sample Type: MB
Inject. Date: 04-Jun-2020 09:48:04 ALS Bottle#: 1 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: mb 320-383169/1-a RUSH (PFC WATERS) DUE: 6/08
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 08:16:49 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: nadonp Date: 05-Jun-2020 08:16:49
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_006.d

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	2.589	2.565	0.024	0.631	10013197	2.21		88.4	14311	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.589	2.573	0.016	1.000	33015	0.009678			8.7	
D 4 13C5 PFPeA										
267.90 > 223.00	2.940	2.929	0.011	0.716	9249216	2.28		91.1	8660	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.940	2.940	0.0	1.000	33454	0.009390			8.9	
D 9 13C3 PFBS										
301.90 > 80.00	2.973	2.973	0.0	0.724	6781086	2.13		91.8	9928	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.277	3.268	0.009	0.798	1152454	2.23		95.6	1529	
D 11 13C2 PFHxA										
315.00 > 270.00	3.319	3.309	0.010	0.808	9436155	2.33		93.3	7595	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.436	3.426	0.010	0.837	1821503	2.30		92.2	3891	
D 18 13C4 PFHpA										
367.00 > 322.00	3.720	3.711	0.009	0.906	8369398	2.33		93.2	6461	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.720	3.711	0.009	1.000	6468	0.001960	Target=3.22		2.7	
363.00 > 169.00	3.720	3.711	0.009	1.000	1680		3.85(1.61-4.84)		4.2	
D 17 18O2 PFHxS										
403.00 > 84.00	3.720	3.721	-0.001	0.906	3382488	2.23		94.3	4749	
15 Perfluorohexanesulfonic acid										M
399.00 > 80.00	3.729	3.721	0.008	1.003	11297	0.006861	Target=2.88		44.3	M
399.00 > 99.00	3.720	3.721	-0.001	1.000	3885		2.91(1.44-4.31)		8.0	M
21 6:2 FTS										
427.00 > 407.00	4.090	4.082	0.008	1.000	25505	0.0283			117	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 20 M2-6:2 FTS										
429.00 > 81.00	4.090	4.082	0.008	0.996	1068589	2.57		108	3102	
D 25 13C4 PFOA										
417.00 > 372.00	4.106	4.099	0.007	1.000	8322742	2.31		92.5	6775	
* 23 13C2 PFOA										
415.00 > 370.00	4.106	4.099	0.007		9082937	2.50			9419	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.114	4.099	0.015	1.002	26092	0.007740	Target=2.40		9.9	M
413.00 > 169.00	4.106	4.099	0.007	1.000	11410		2.29(1.20-3.59)		17.5	M
D 27 13C4 PFOS										
503.00 > 80.00	4.467	4.462	0.005	1.088	1404341	2.18		91.3	2707	
D 30 13C5 PFNA										
468.00 > 423.00	4.483	4.470	0.013	1.092	7318297	2.50		99.9	8479	
D 33 13C8 FOSA										
506.00 > 78.00	4.808	4.803	0.005	1.171	3052346	2.14		85.5	4287	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.817	4.803	0.014	1.002	14401	0.0128			102	
D 39 13C2 PFDA										
515.00 > 470.00	4.834	4.820	0.014	1.177	7507386	2.37		94.8	11807	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.834	4.820	0.014	1.177	1537832	2.92		122	2601	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.997	4.978	0.019	1.217	2345317	1.99		79.7	2079	
41 NMeFOSAA										M
570.00 > 419.00	4.997	4.989	0.008	1.000	4143	0.006237			6.8	M
D 43 13C2 PFUnA										
565.00 > 520.00	5.155	5.130	0.025	1.255	7193334	2.43		97.1	10112	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.155	5.139	0.016	1.255	2539846	2.12		84.6	1835	
46 NEtFOSA										M
584.00 > 419.00	5.155	5.148	0.007	1.000	5026	0.007046			21.5	M
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.266	5.258	0.008	1.283	3010202	3.55		28.4	1919	
48 N-MeFOSE-M										
616.00 > 59.00	5.297	5.268	0.029	1.006	1138	0.004811			3.5	
51 11ClFOS										
631.00 > 451.00	5.287	5.268	0.019	1.183	2093	0.000656			17.8	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.287	5.279	0.008	1.288	946558	1.41		56.4	22.2	
D 56 13C2 PFDoA										
615.00 > 570.00	5.435	5.426	0.009	1.324	6193223	1.98		79.2	4864	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.435	5.437	-0.002	1.324	2274808	2.36		18.9	1210	
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.467	5.458	0.009	1.332	663979	0.9636		38.5	257	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.924	5.901	0.023	1.443	5528716	2.11		84.5	5005	

Report Date: 05-Jun-2020 08:16:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_007.d
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_006.d

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 64 13C2 PFHxDA										
815.00 > 770.00	6.332	6.315	0.017	1.542	3927062	2.12		84.7	4952	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.332	6.315	0.017	1.000	35004	0.006261	Target=5.41		51.3	
813.00 > 169.00	6.323	6.315	0.008	0.999	6982		5.01(2.70-8.11)		79.3	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 05-Jun-2020 08:16:49 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_007.d

Injection Date: 04-Jun-2020 09:48:04 Instrument ID: A18

Lims ID: MB 320-383169/1-A

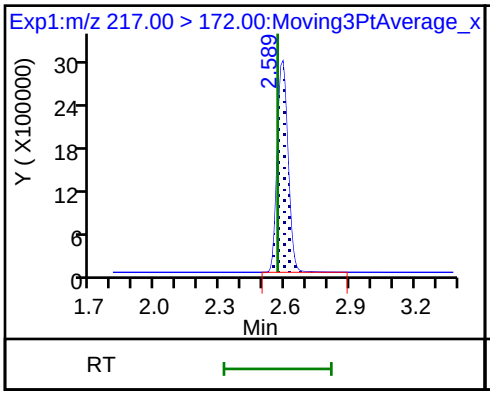
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 5

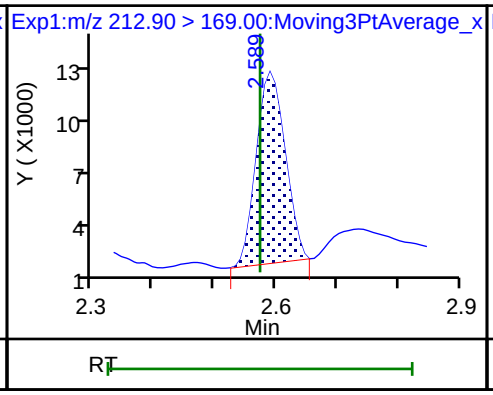
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

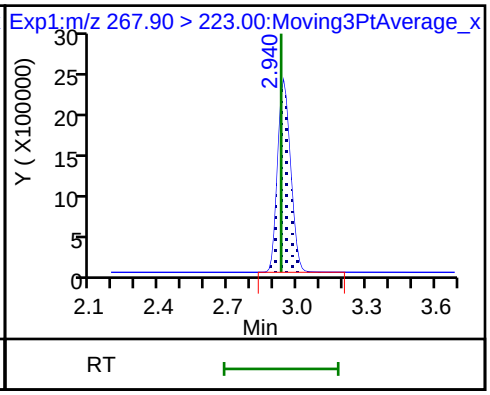
D 1 13C4 PFBA



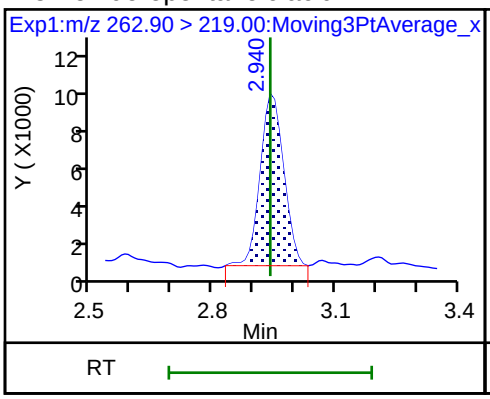
2 Perfluorobutanoic acid



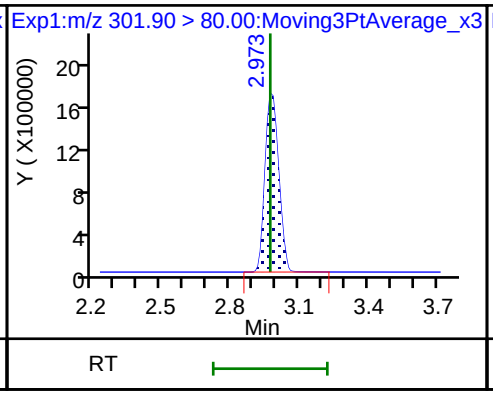
D 4 13C5 PFPeA



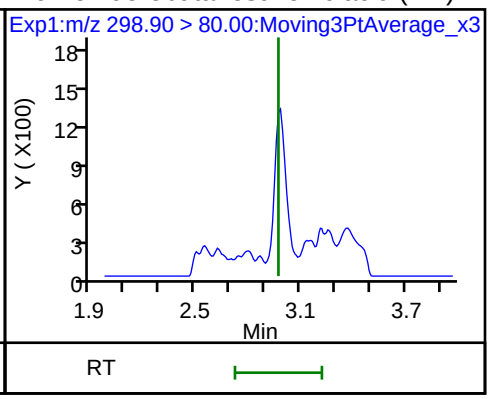
5 Perfluoropentanoic acid



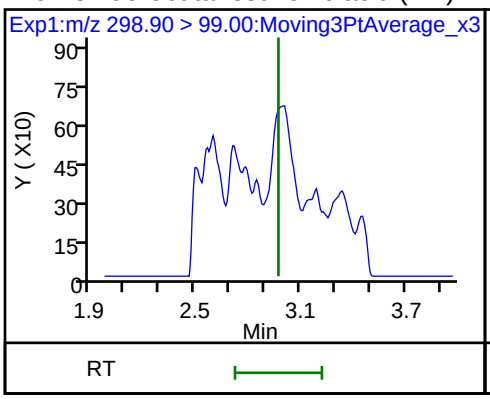
D 9 13C3 PFBS



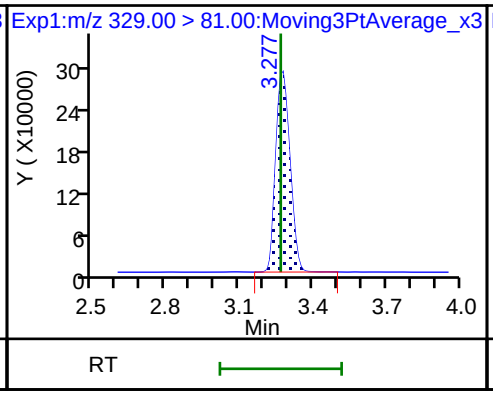
6 Perfluorobutanesulfonic acid (ND)



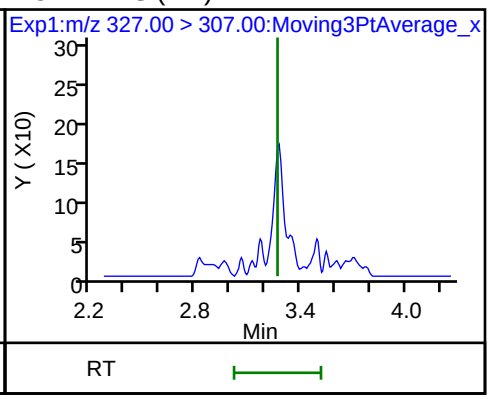
6 Perfluorobutanesulfonic acid (ND)



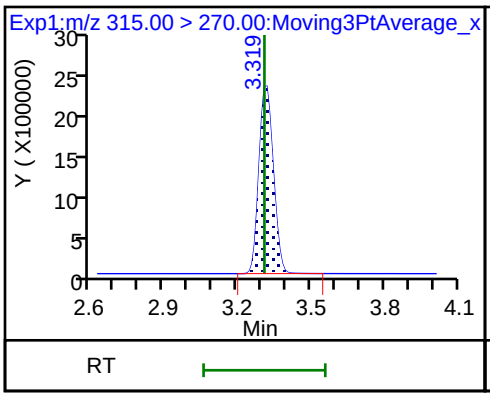
D 7 M2-4:2 FTS



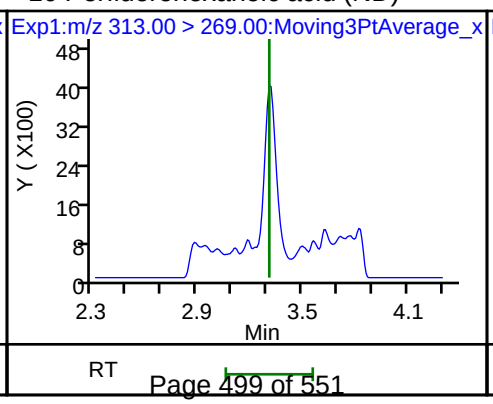
8 4:2 FTS (ND)



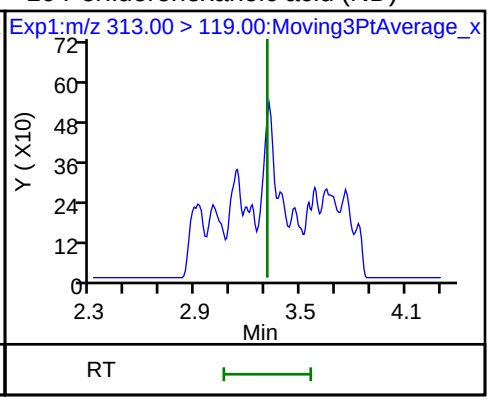
D 11 13C2 PFHxA



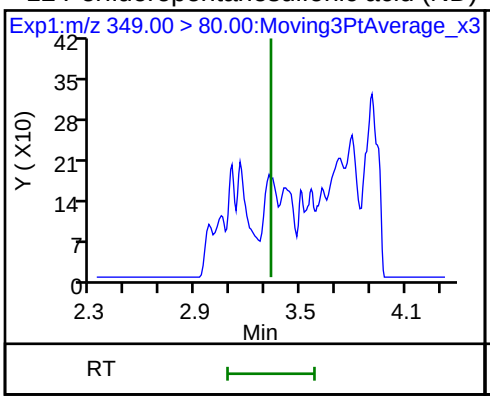
10 Perfluorohexanoic acid (ND)



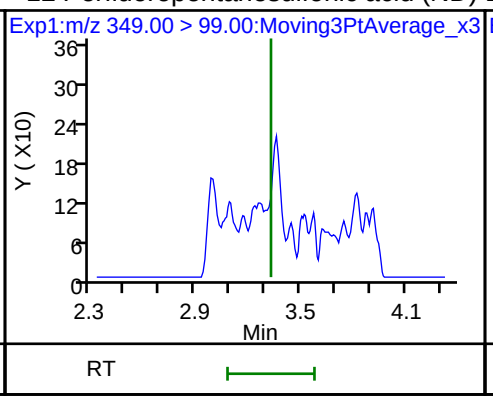
10 Perfluorohexanoic acid (ND)

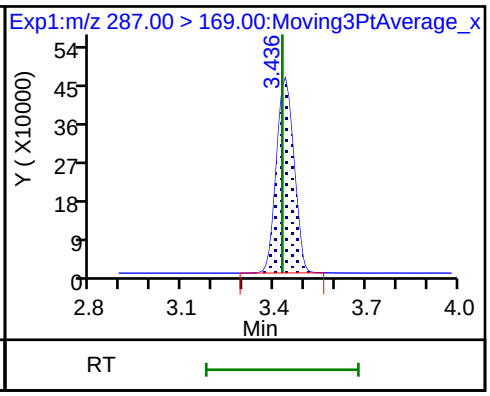


12 Perfluoropentanesulfonic acid (ND)

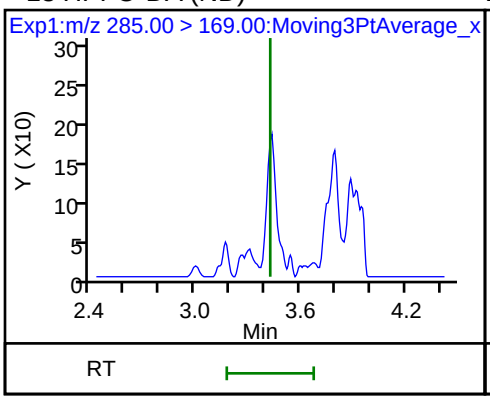


12 Perfluoropentanesulfonic acid (ND) D 14 13C3 HFPO-DA

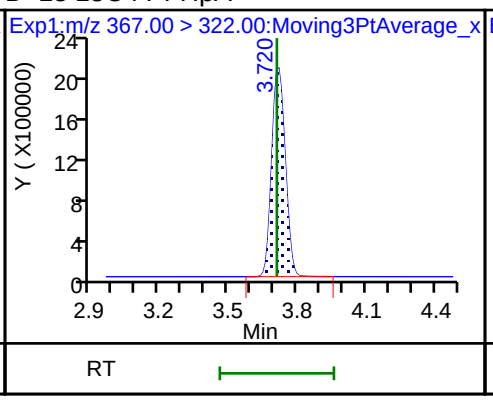




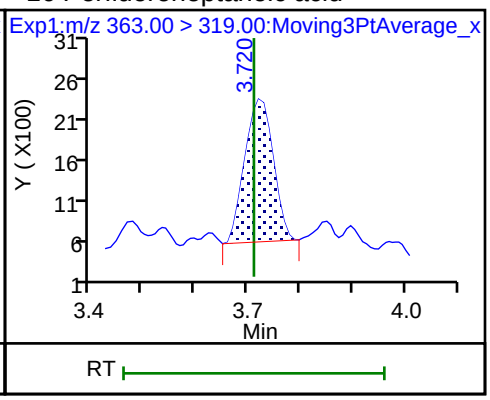
13 HPFO-DA (ND)



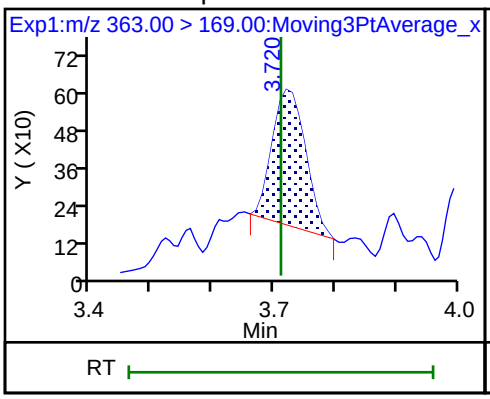
D 18 13C4 PFHpA



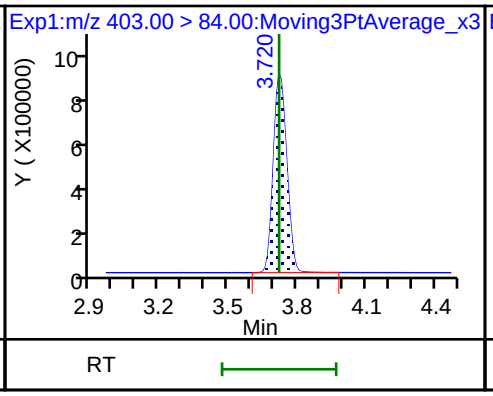
16 Perfluoroheptanoic acid



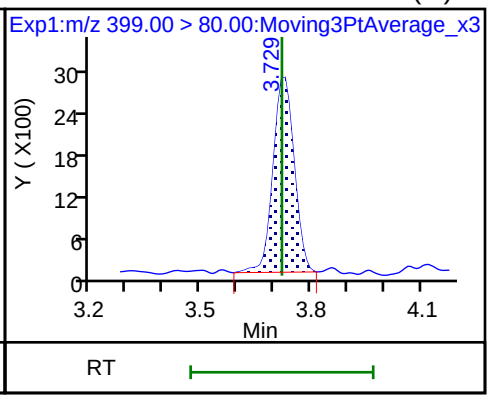
16 Perfluoroheptanoic acid



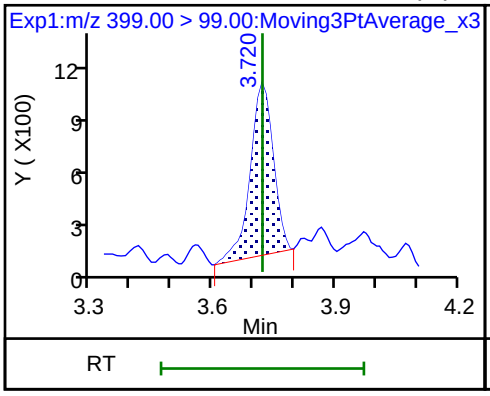
D 17 18O2 PFHxS



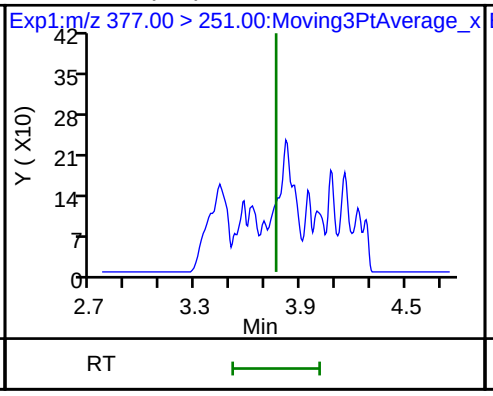
15 Perfluorohexanesulfonic acid (M)



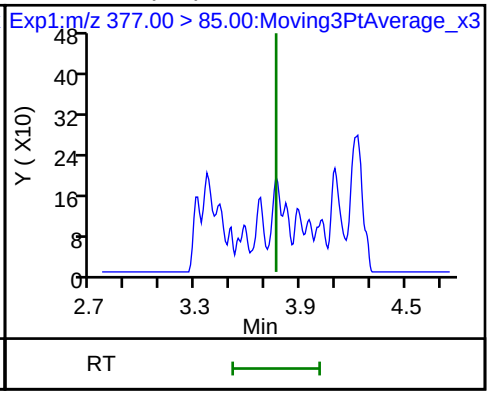
15 Perfluorohexanesulfonic acid (M)



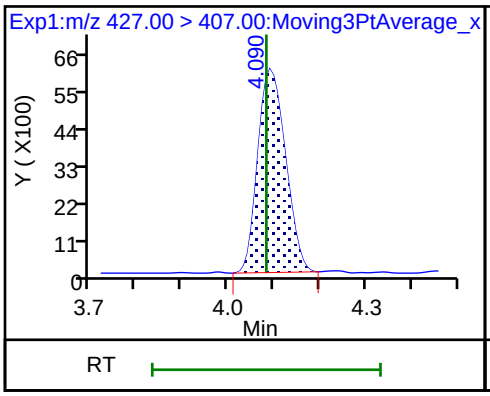
19 DONA (ND)



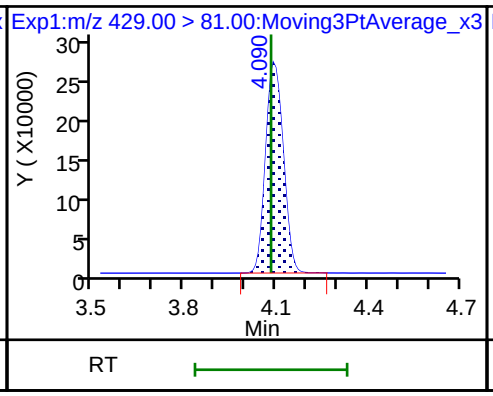
19 DONA (ND)



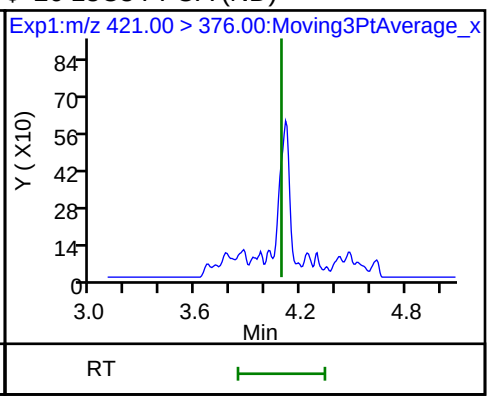
21 6:2 FTS



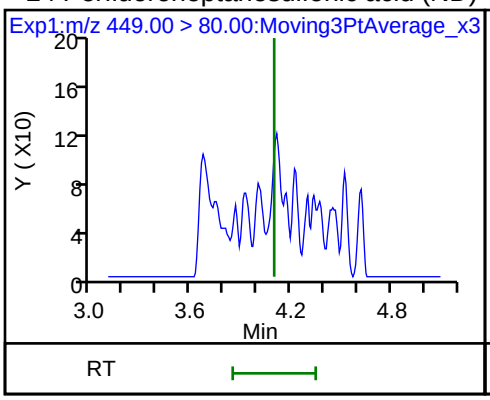
D 20 M2-6:2 FTS



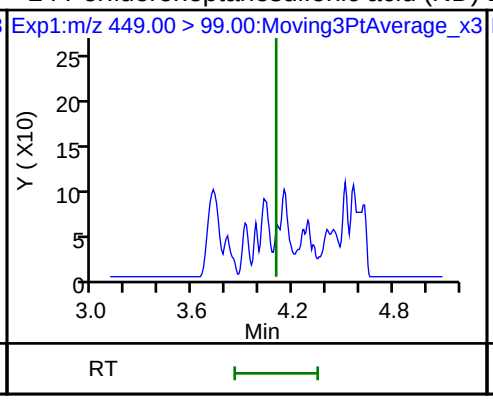
$ 26 13C8 PFOA (ND)



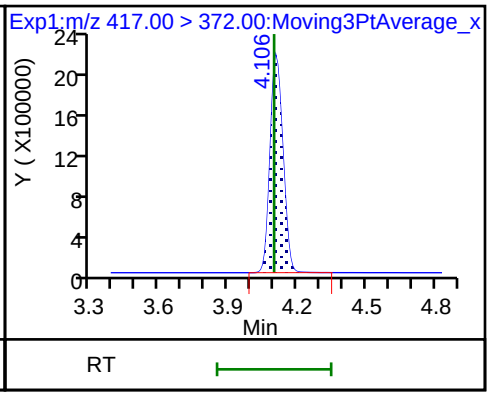
24 Perfluoroheptanesulfonic acid (ND)



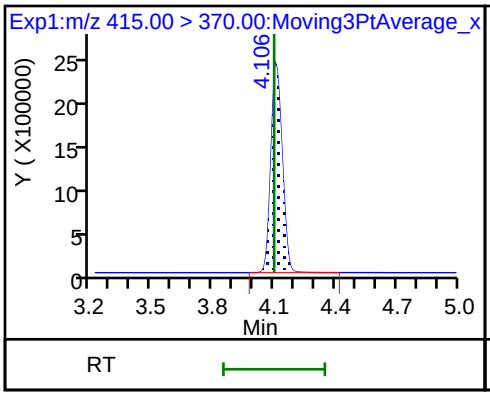
24 Perfluoroheptanesulfonic acid (ND)



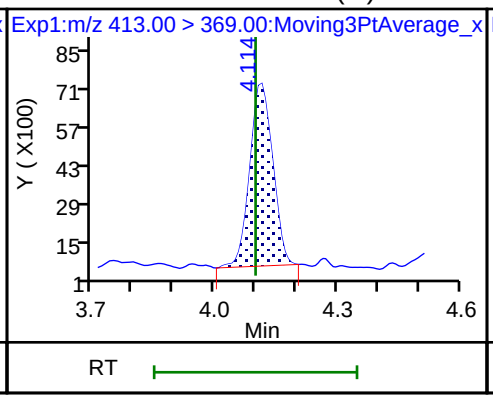
D 25 13C4 PFOA



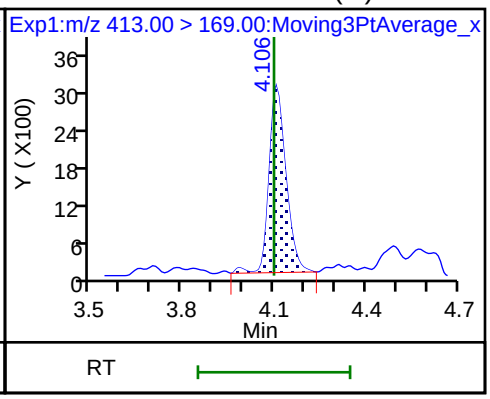
* 23 13C2 PFOA



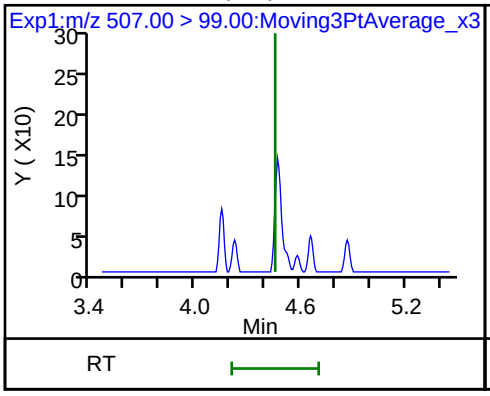
22 Perfluorooctanoic acid (M)



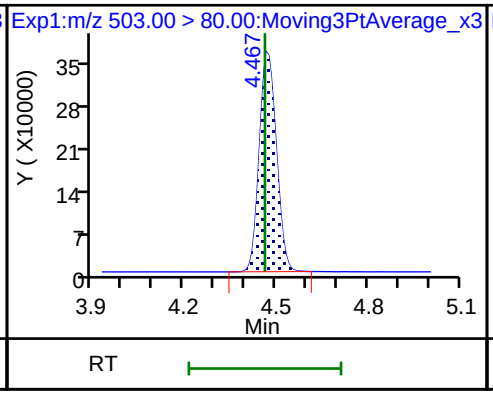
22 Perfluorooctanoic acid (M)



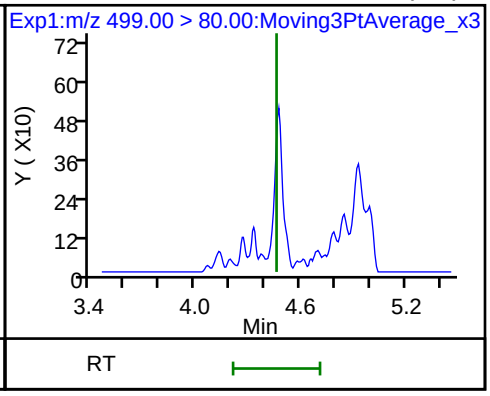
$ 28 13C8 PFOS (ND)



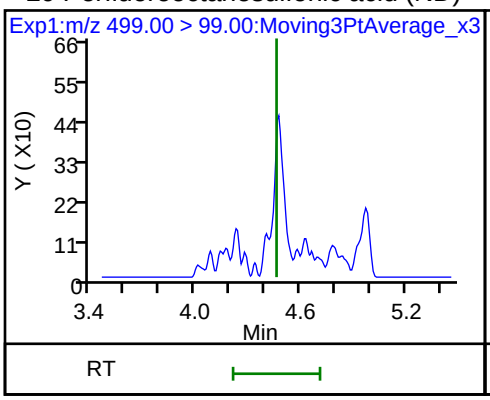
D 27 13C4 PFOS



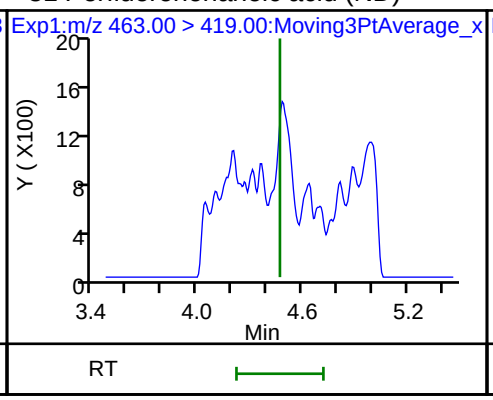
29 Perfluorooctanesulfonic acid (ND)



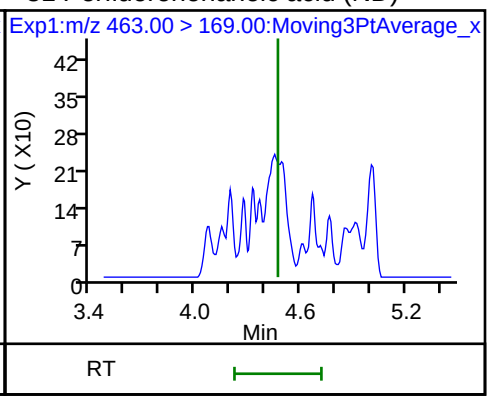
29 Perfluorooctanesulfonic acid (ND)



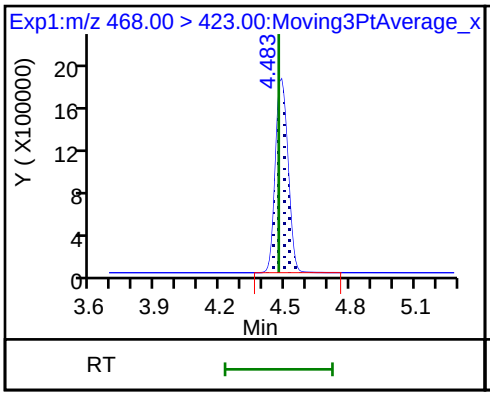
31 Perfluorononanoic acid (ND)



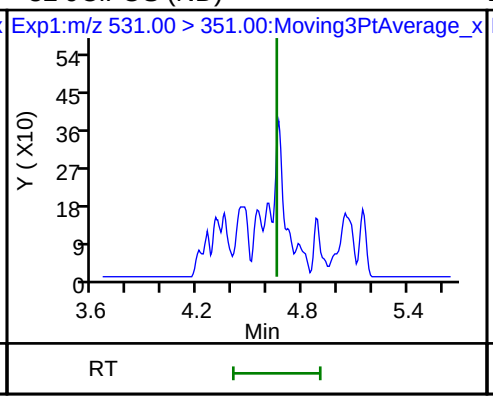
31 Perfluorononanoic acid (ND)



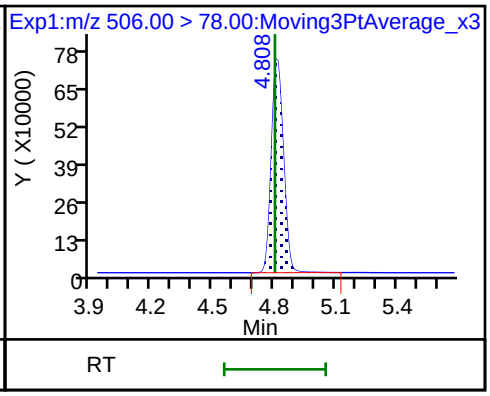
D 30 13C5 PFNA



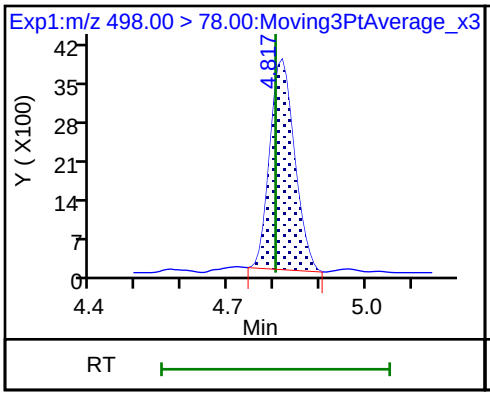
32 9ClFOS (ND)



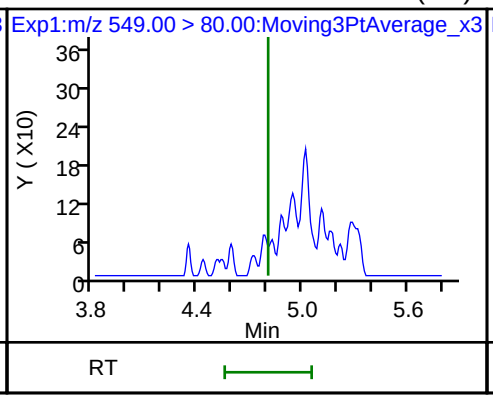
D 33 13C8 FOSA



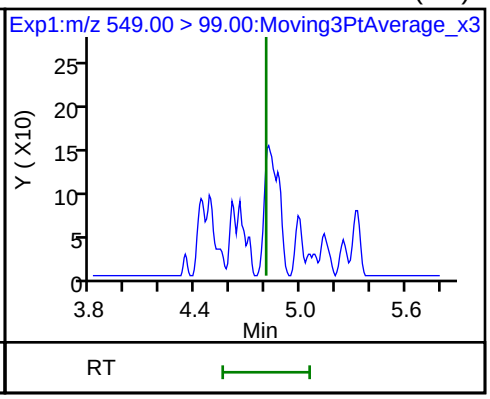
34 Perfluorooctanesulfonamide



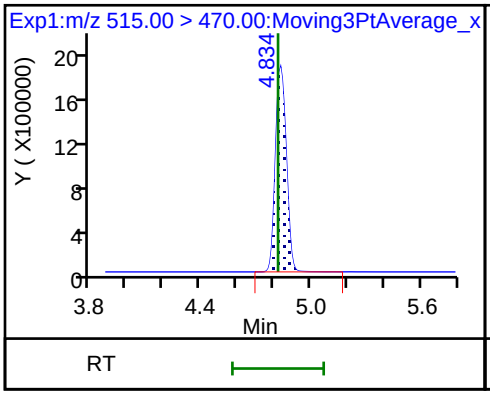
35 Perfluorononanesulfonic acid (ND)



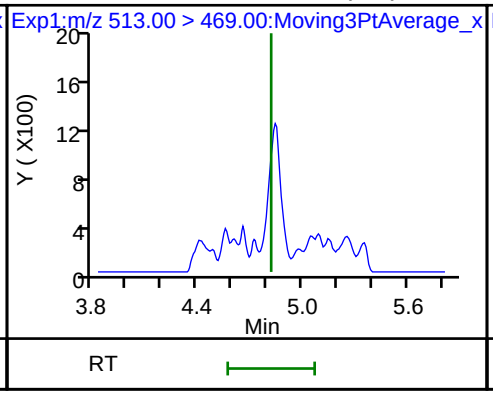
35 Perfluorononanesulfonic acid (ND)



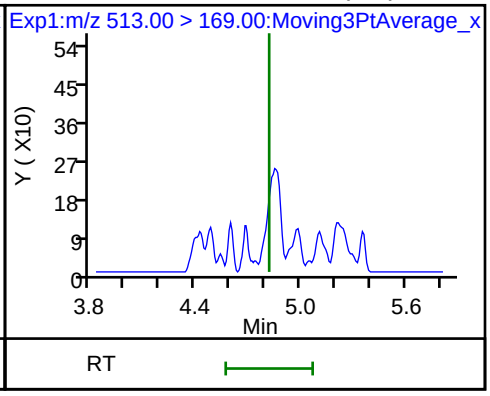
D 39 13C2 PFDA



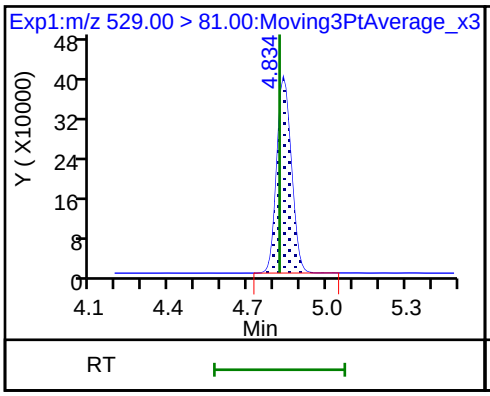
37 Perfluorodecanoic acid (ND)



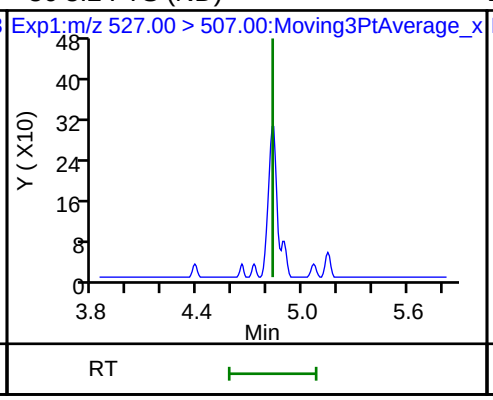
37 Perfluorodecanoic acid (ND)



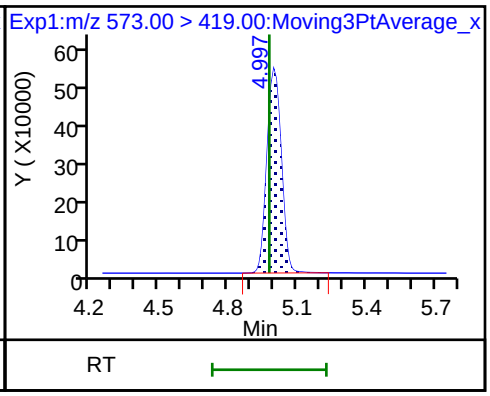
D 38 M2-8:2 FTS



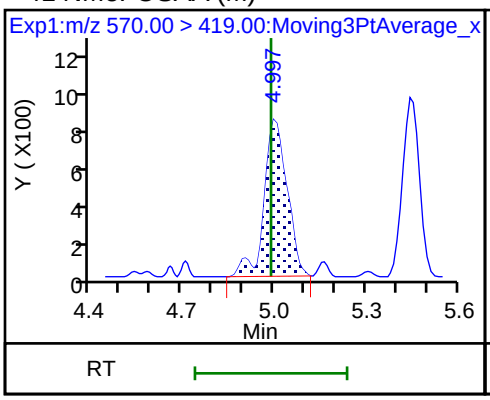
36 8:2 FTS (ND)



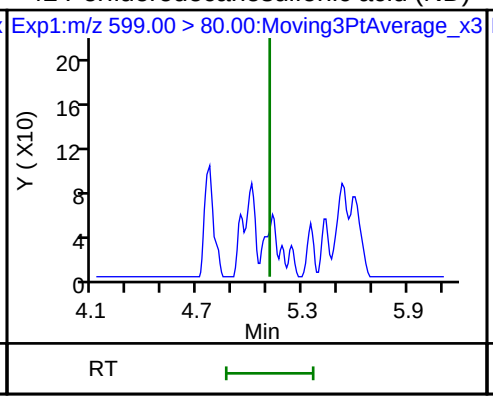
D 40 d3-NMeFOSAA



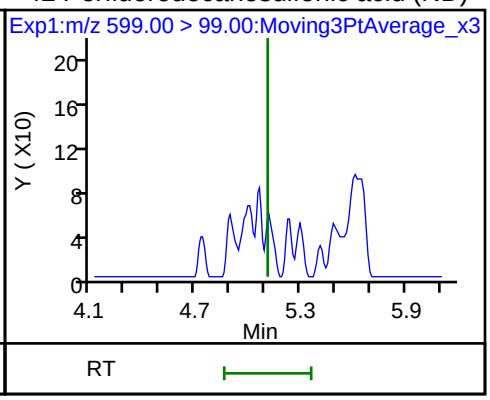
41 NMeFOSAA (M)



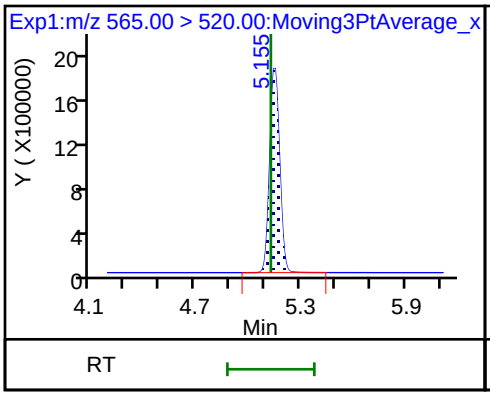
42 Perfluorodecanesulfonic acid (ND)



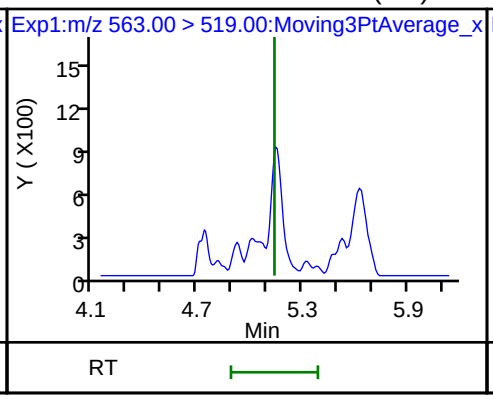
42 Perfluorodecanesulfonic acid (ND)



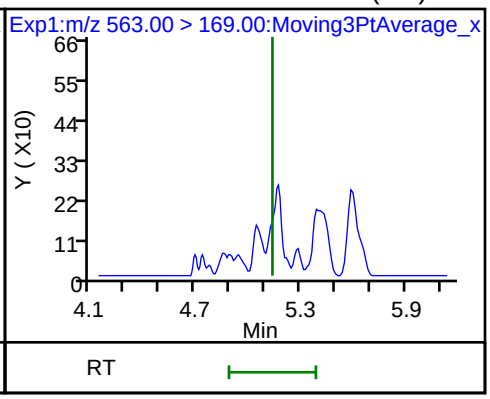
D 43 13C2 PFUnA



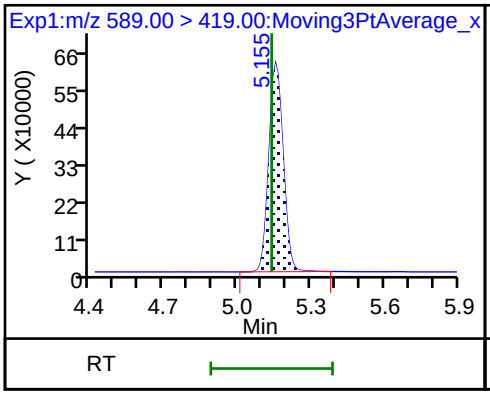
45 Perfluoroundecanoic acid (ND)



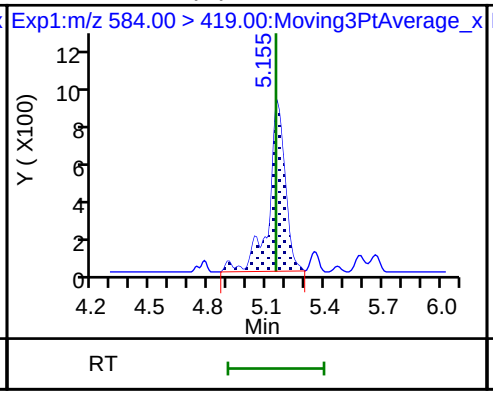
45 Perfluoroundecanoic acid (ND)



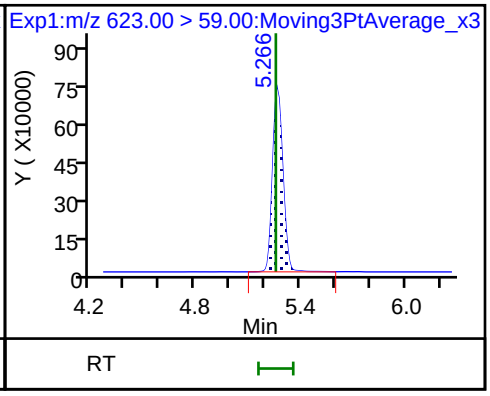
D 44 d5-NEtFOSAA



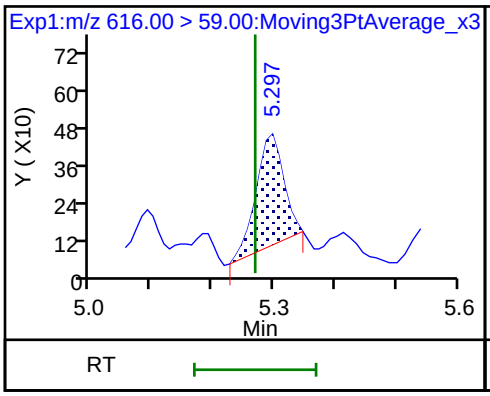
46 NEtFOSA (M)



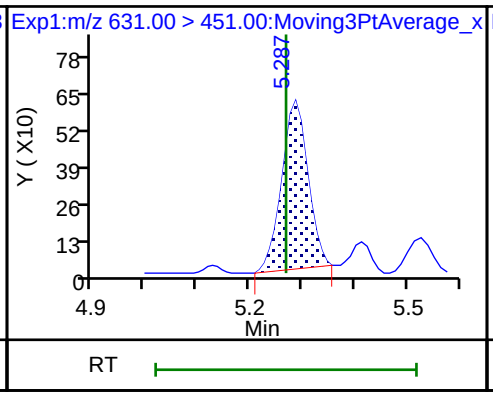
D 47 d7-N-MeFOSE-M



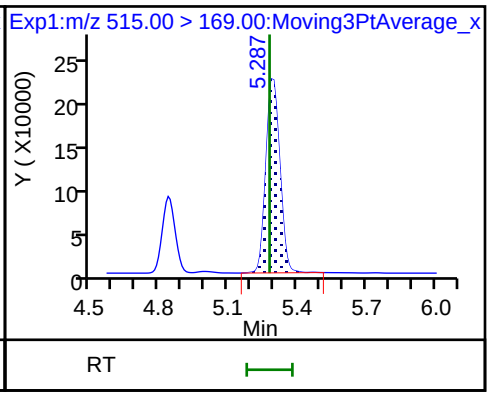
48 N-MeFOSE-M



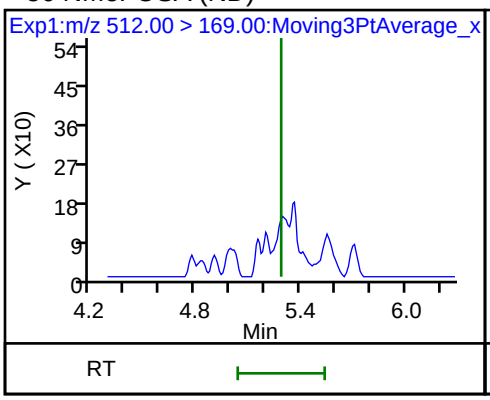
51 11ClFOS



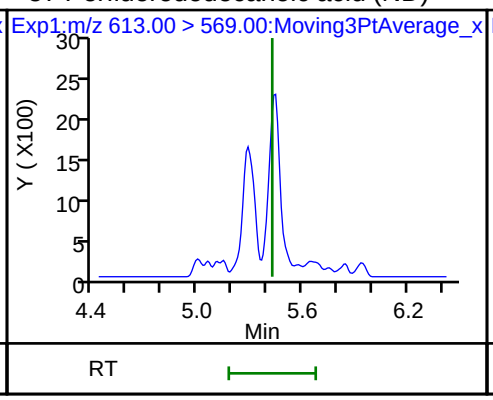
D 49 d-N-MeFOSA-M



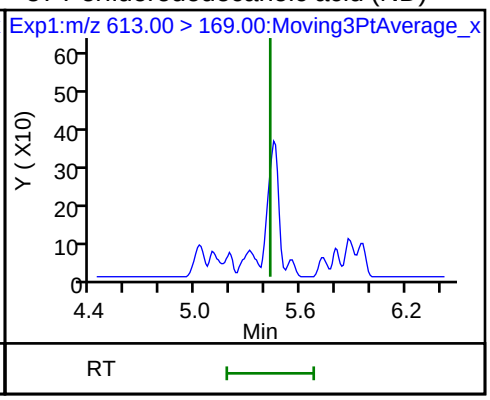
50 NMeFOSA (ND)



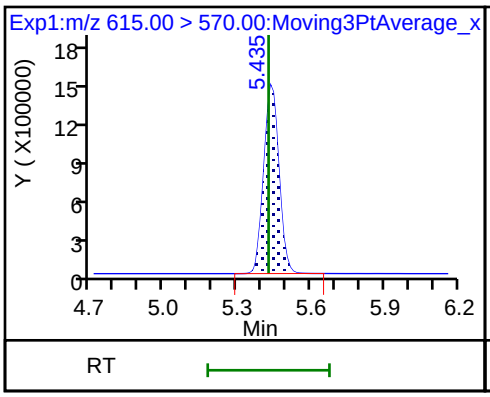
57 Perfluorododecanoic acid (ND)



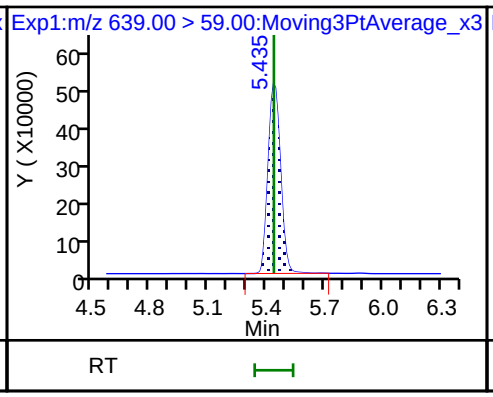
57 Perfluorododecanoic acid (ND)



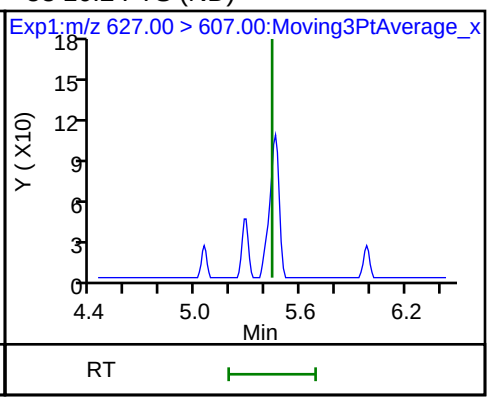
D 56 13C2 PFDoA



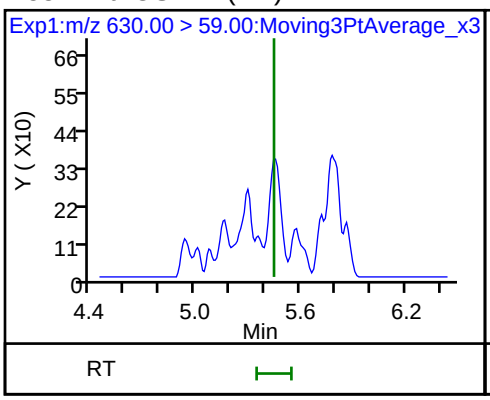
D 52 d9-N-EtFOSE-M



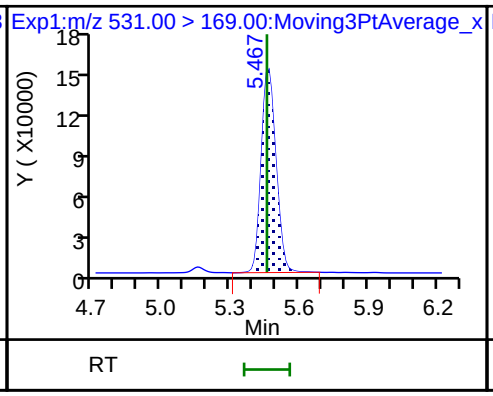
58 10:2 FTS (ND)



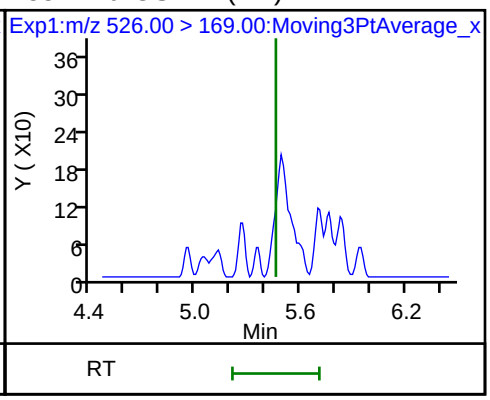
53 N-EtFOSE-M (ND)



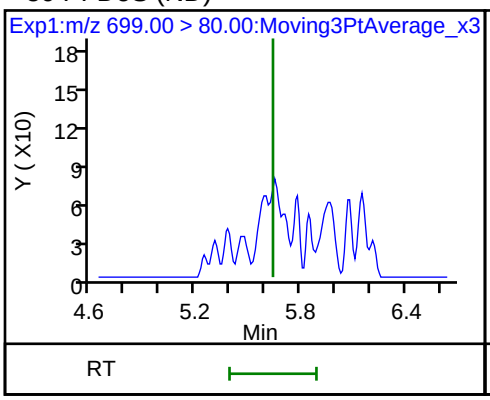
D 54 d-N-EtFOSA-M



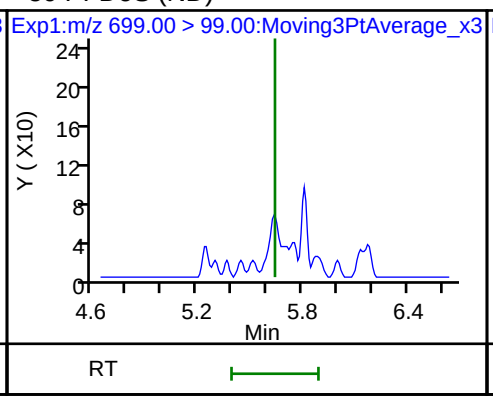
55 N-EtFOSA-M (ND)



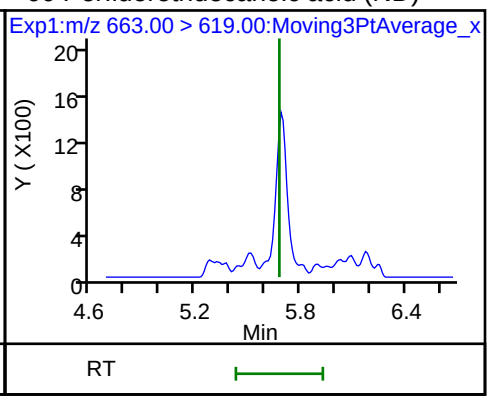
59 PFDoS (ND)



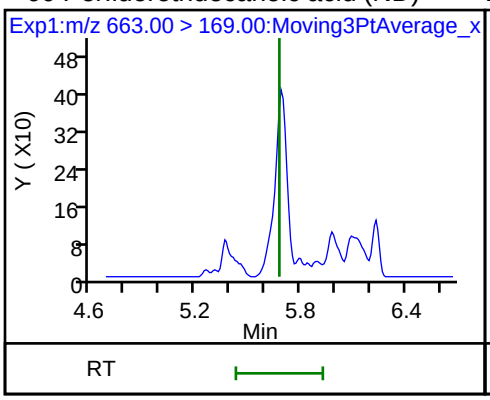
59 PFDoS (ND)



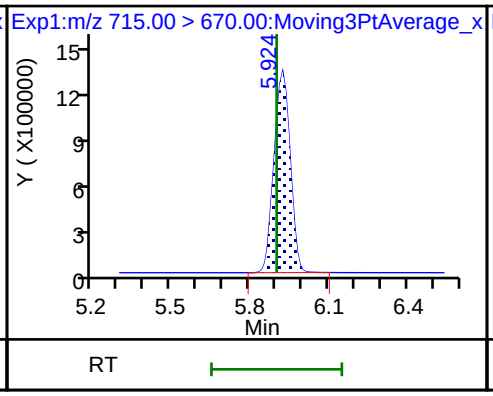
60 Perfluorotridecanoic acid (ND)



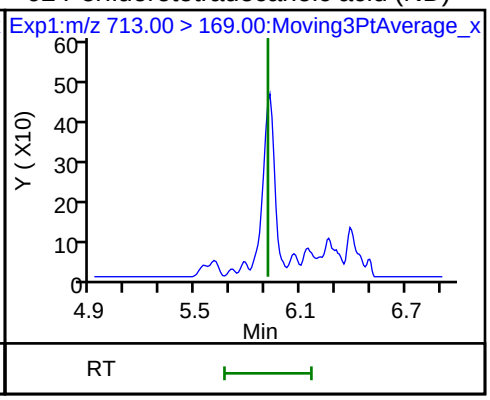
60 Perfluorotridecanoic acid (ND)



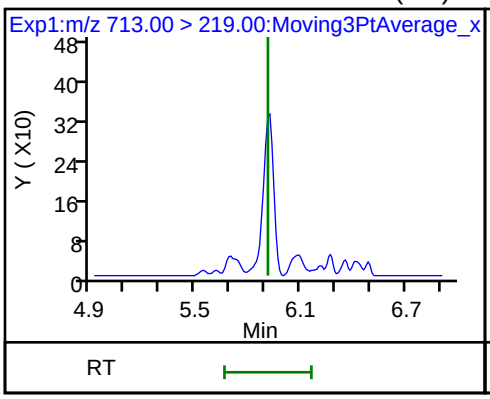
D 61 13C2 PFTeDA



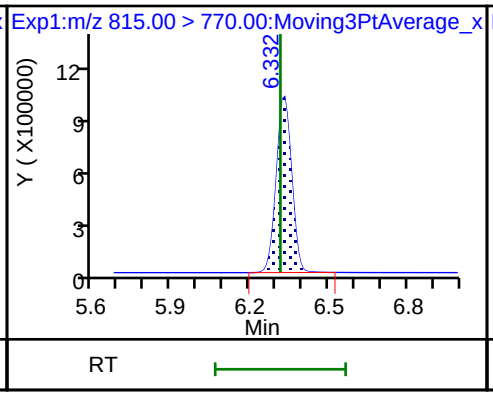
62 Perfluorotetradecanoic acid (ND)



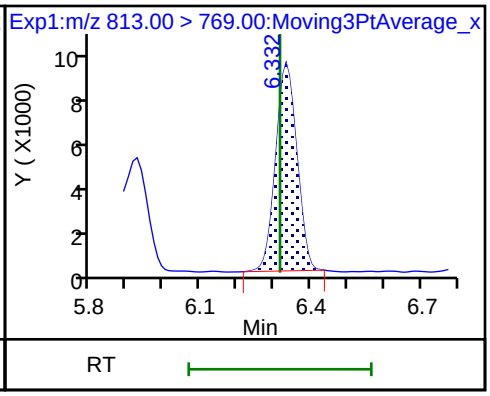
62 Perfluorotetradecanoic acid (ND)



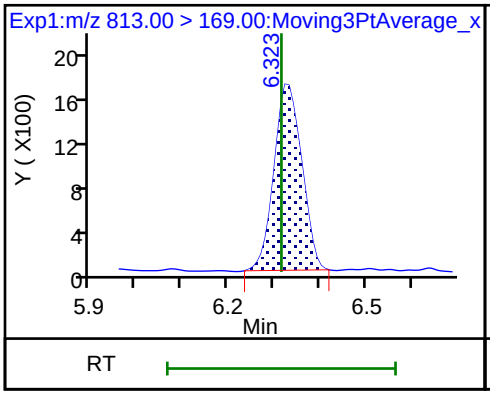
D 64 13C2 PFHxDA



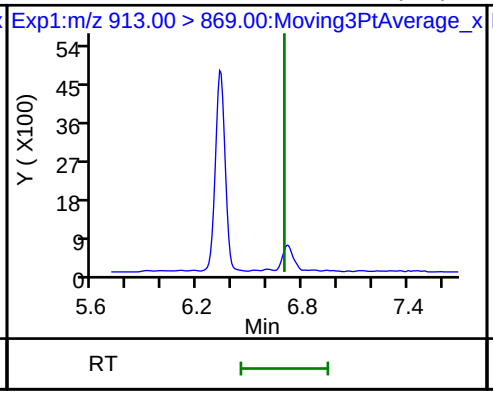
63 Perfluorohexadecanoic acid



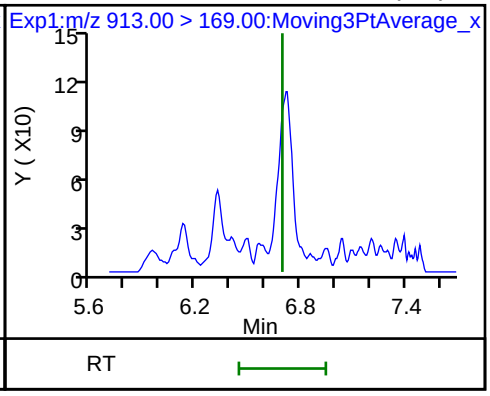
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid (ND)



65 Perfluorooctadecanoic acid (ND)



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

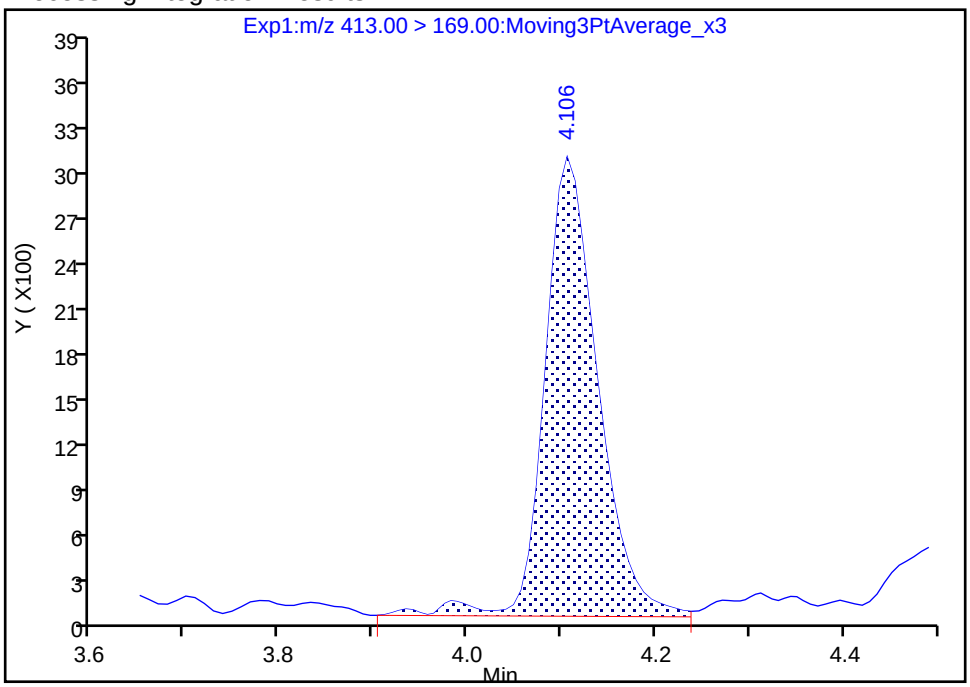
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_007.d
Injection Date: 04-Jun-2020 09:48:04 Instrument ID: A18
Lims ID: MB 320-383169/1-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

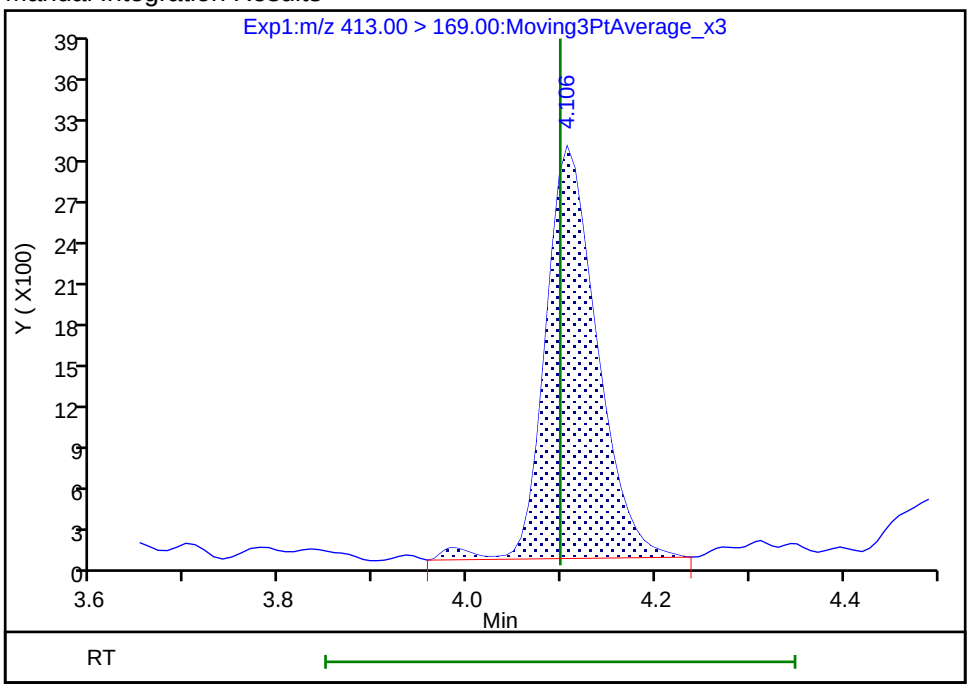
Processing Integration Results

RT: 4.11
Area: 11830
Amount: 0.012602
Amount Units: ng/ml



Manual Integration Results

RT: 4.11
Area: 11410
Amount: 0.007740
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:16:22
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

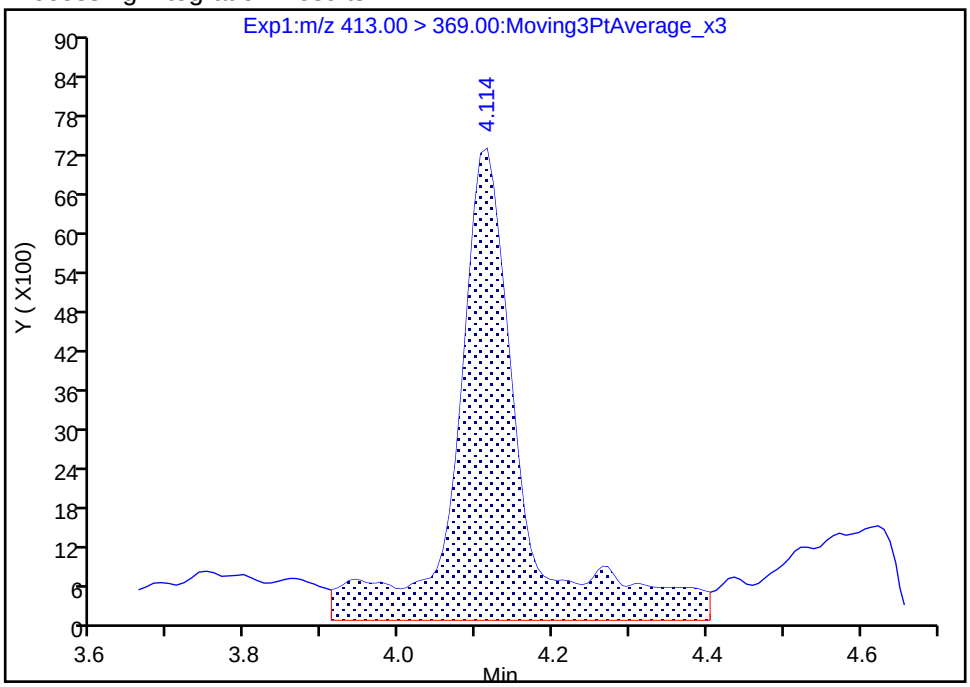
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_007.d
Injection Date: 04-Jun-2020 09:48:04 Instrument ID: A18
Lims ID: MB 320-383169/1-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 1 Worklist Smp#: 5
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

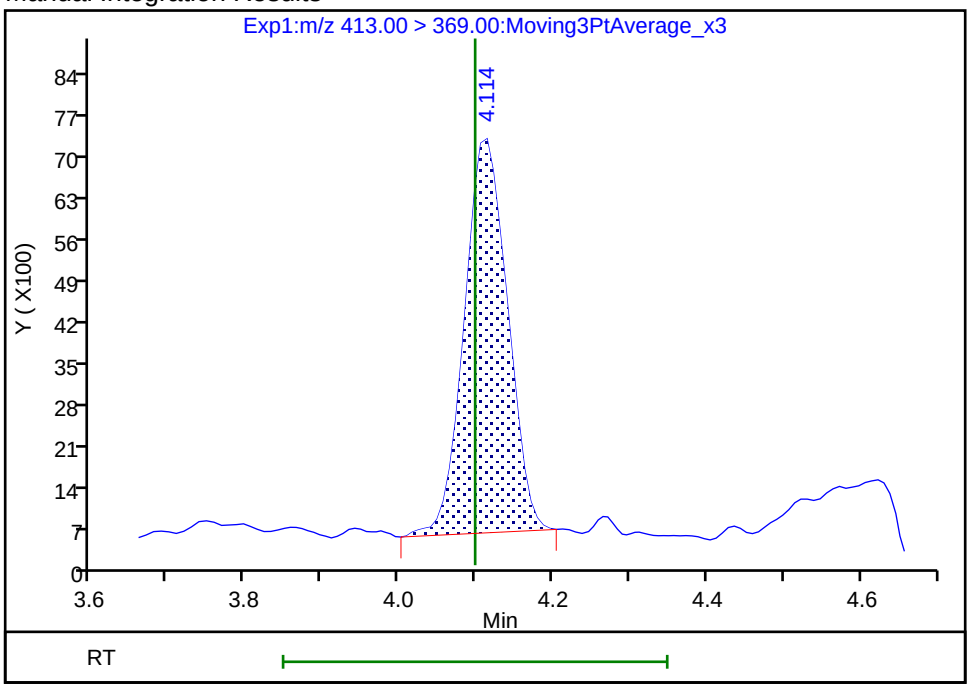
Processing Integration Results

RT: 4.11
Area: 42481
Amount: 0.012602
Amount Units: ng/ml



Manual Integration Results

RT: 4.11
Area: 26092
Amount: 0.007740
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:16:27
Audit Action: Manually Integrated Audit Reason: Baseline

Eurofins TestAmerica, Sacramento

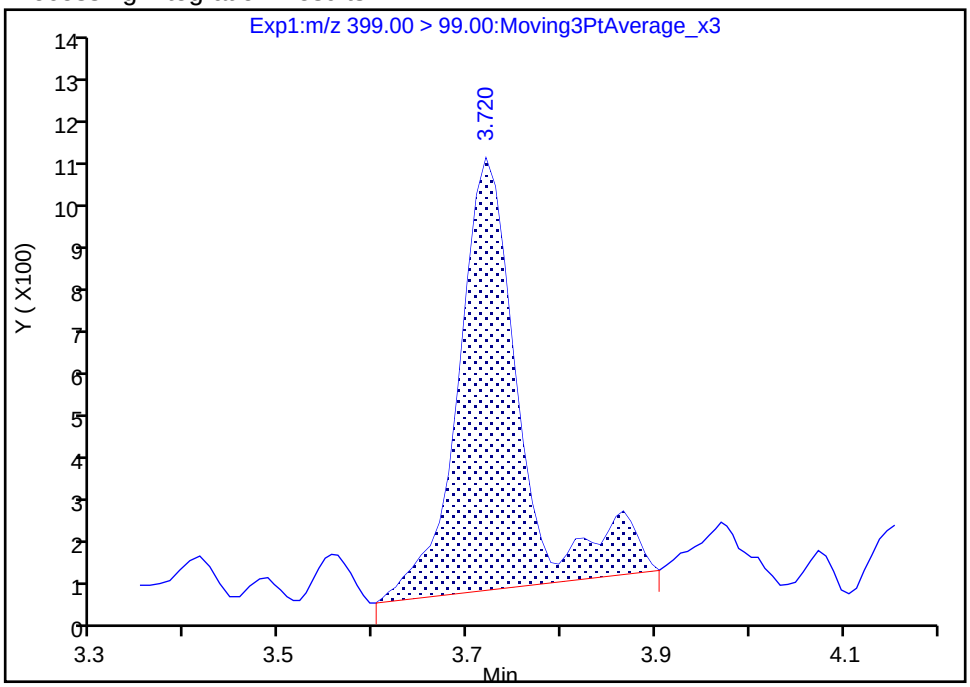
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_007.d				
Injection Date:	04-Jun-2020 09:48:04	Instrument ID:	A18		
Lims ID:	MB 320-383169/1-A				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	1	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 2

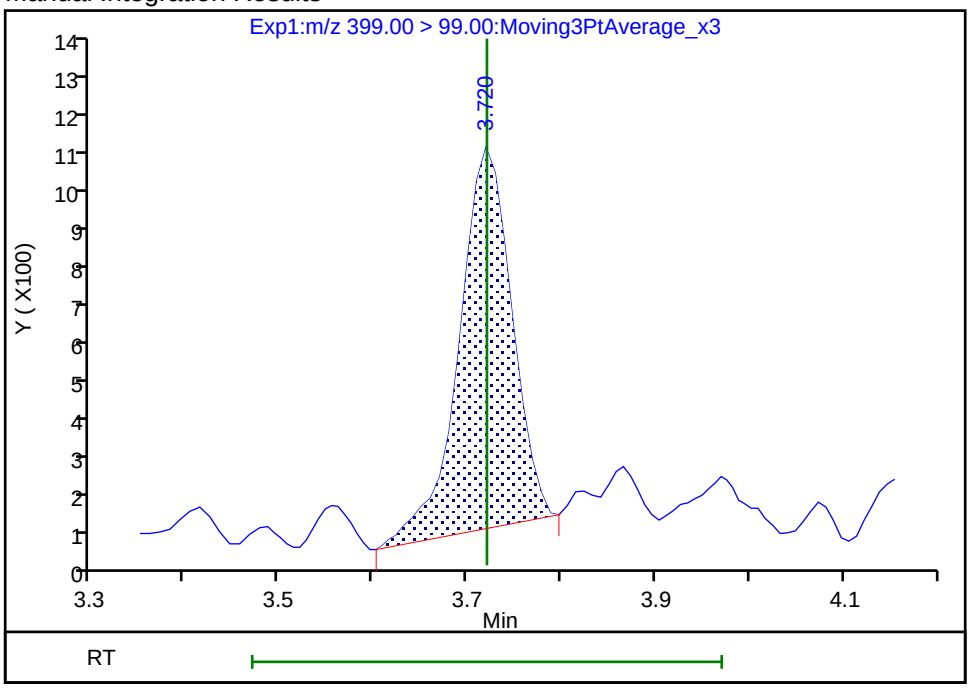
Processing Integration Results

RT: 3.72
Area: 4667
Amount: 0.007270
Amount Units: ng/ml



Manual Integration Results

RT: 3.72
Area: 3885
Amount: 0.006861
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:16:09
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

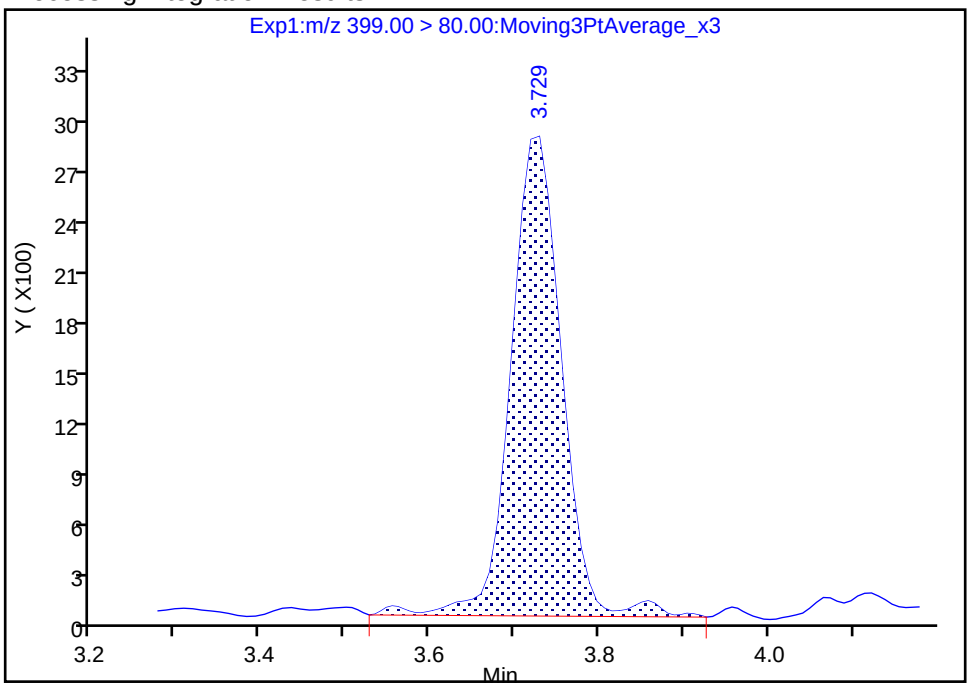
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_007.d				
Injection Date:	04-Jun-2020 09:48:04	Instrument ID:	A18		
Lims ID:	MB 320-383169/1-A				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	1	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

15 Perfluorohexanesulfonic acid, CAS: 355-46-4

Signal: 1

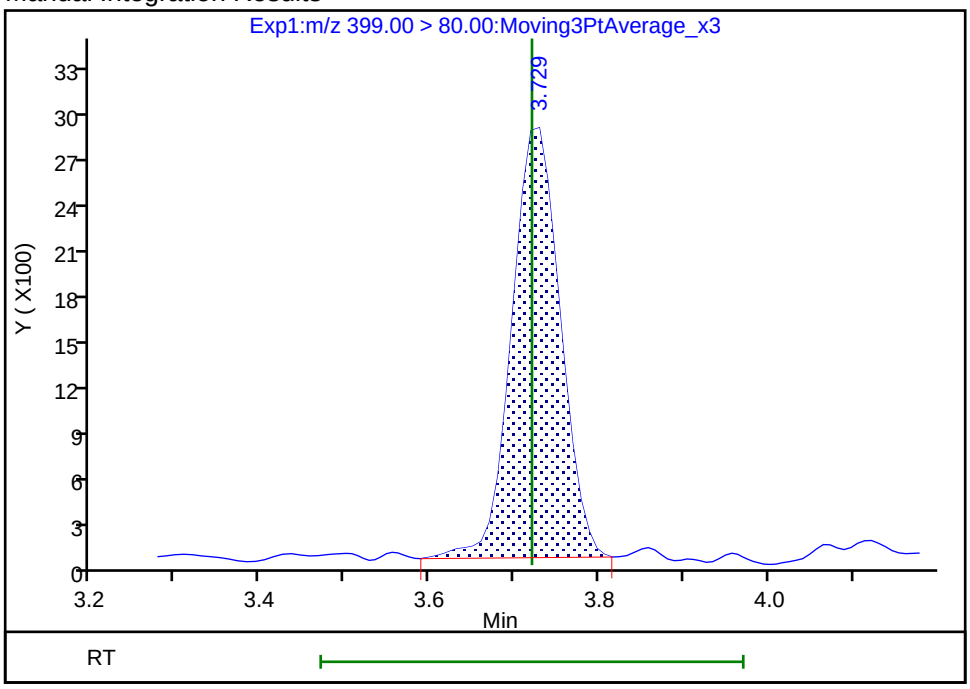
Processing Integration Results

RT: 3.73
Area: 11971
Amount: 0.007270
Amount Units: ng/ml



Manual Integration Results

RT: 3.73
Area: 11297
Amount: 0.006861
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:16:13
Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

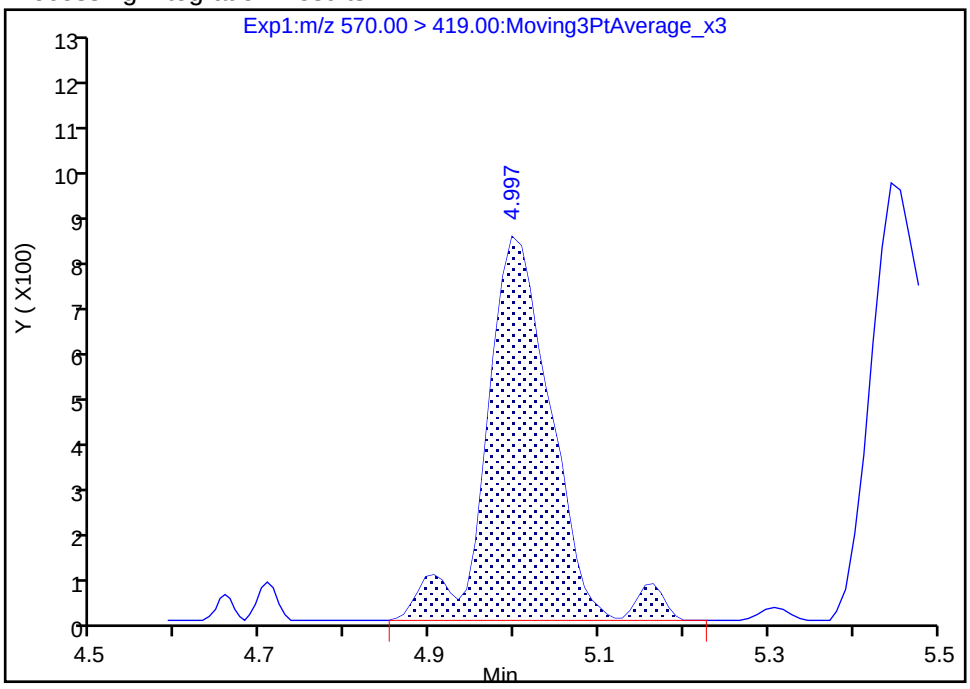
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_007.d				
Injection Date:	04-Jun-2020 09:48:04	Instrument ID:	A18		
Lims ID:	MB 320-383169/1-A				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	1	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

41 NMeFOSAA, CAS: 2355-31-9

Signal: 1

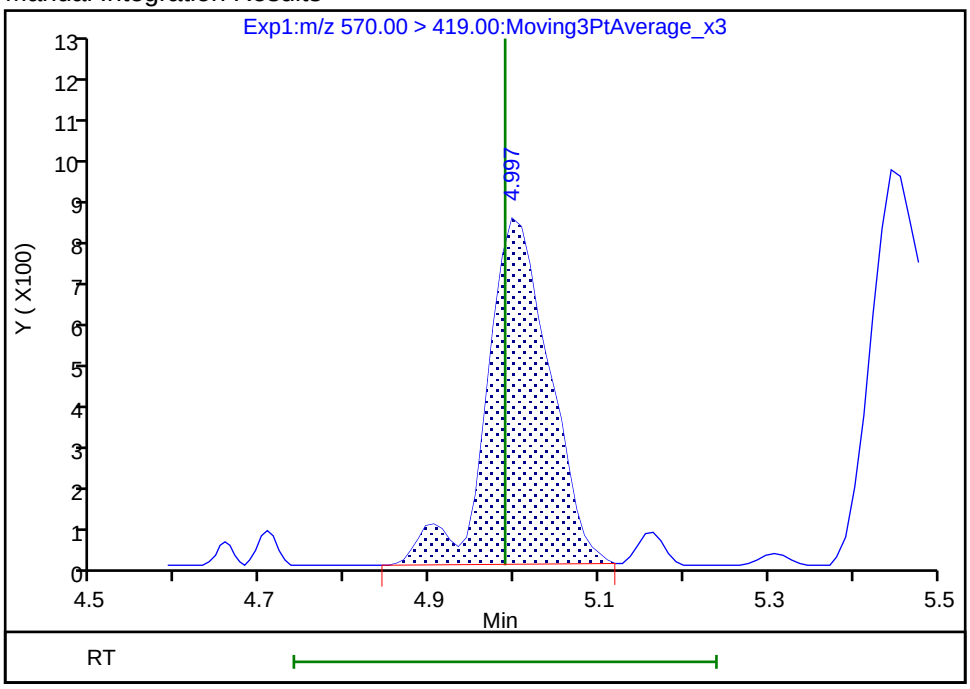
Processing Integration Results

RT: 5.00
Area: 4346
Amount: 0.006543
Amount Units: ng/ml



Manual Integration Results

RT: 5.00
Area: 4143
Amount: 0.006237
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:16:35

Audit Action: Manually Integrated Audit Reason: Baseline

Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

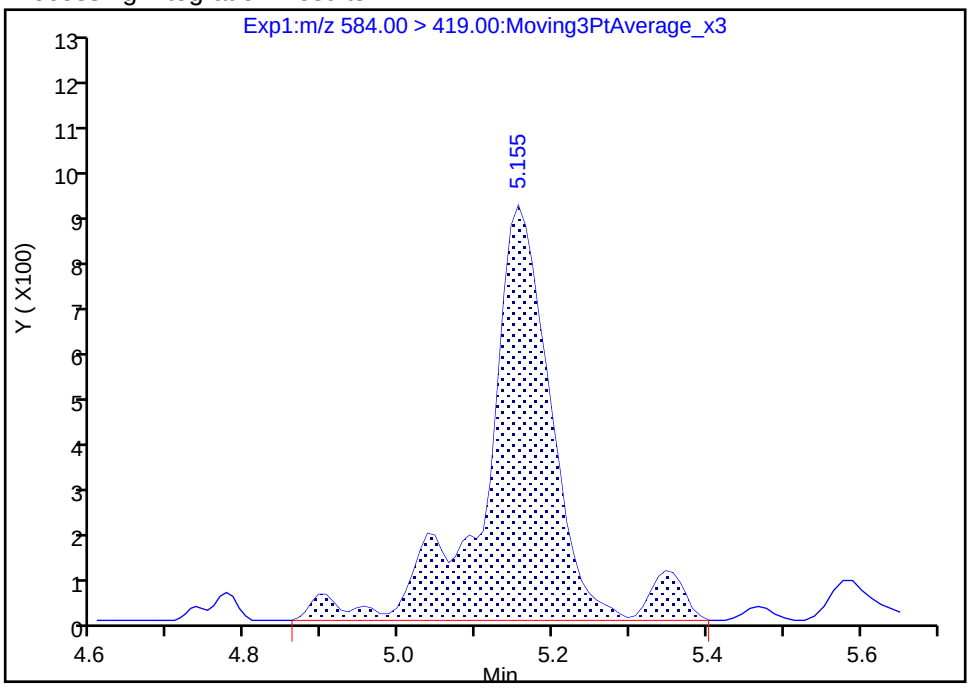
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_007.d				
Injection Date:	04-Jun-2020 09:48:04	Instrument ID:	A18		
Lims ID:	MB 320-383169/1-A				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	1	Worklist Smp#:	5
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

46 NEtFOSA, CAS: 2991-50-6

Signal: 1

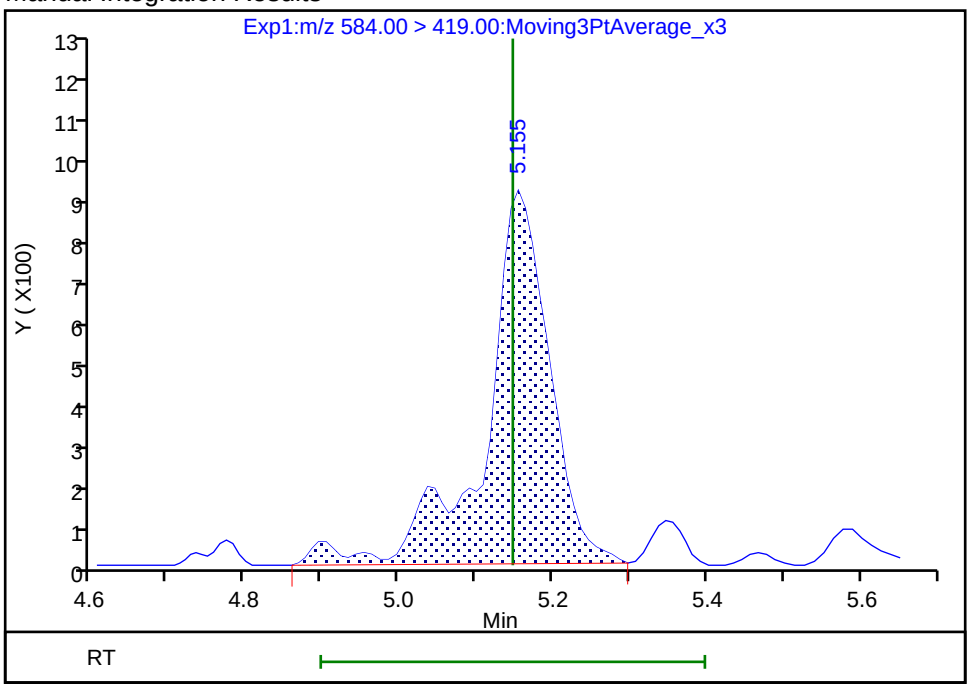
Processing Integration Results

RT: 5.15
Area: 5402
Amount: 0.007573
Amount Units: ng/ml



Manual Integration Results

RT: 5.15
Area: 5026
Amount: 0.007046
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:16:40
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Client Sample ID: Lab Sample ID: LCS 320-383169/2-A

Matrix: Water Lab File ID: 2020.06.04_A18_PFC_A_008.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:28

Sample wt/vol: 250(mL) Date Analyzed: 06/04/2020 09:58

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383436 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	44.2		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	40.8		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	40.9		2.0	0.58
375-85-9	Perfluoroheptanoic acid	41.8		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	39.2		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	37.6		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	39.7		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	42.4		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	41.2		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	45.2		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	41.0		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36.7		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	32.8		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	39.0		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	38.5		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	38.1		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	41.3		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	42.6		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	38.2		20	1.9
27619-97-2	6:2 FTS	39.0		20	2.0
39108-34-4	8:2 FTS	40.6		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Client Sample ID: Lab Sample ID: LCS 320-383169/2-A

Matrix: Water Lab File ID: 2020.06.04_A18_PFC_A_008.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:28

Sample wt/vol: 250(mL) Date Analyzed: 06/04/2020 09:58

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383436 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	88		25-150
STL01893	13C5 PFPeA	92		25-150
STL00993	13C2 PFHxA	95		25-150
STL01892	13C4 PFHpA	95		25-150
STL00990	13C4 PFOA	96		25-150
STL00995	13C5 PFNA	103		25-150
STL00996	13C2 PFDA	94		25-150
STL00997	13C2 PFUnA	94		25-150
STL00998	13C2 PFDoA	90		25-150
STL02116	13C2 PFTeDA	101		25-150
STL02337	13C3 PFBS	96		25-150
STL00994	18O2 PFHxS	96		25-150
STL00991	13C4 PFOS	93		25-150
STL01056	13C8 FOSA	87		25-150
STL02118	d3-NMeFOSAA	89		25-150
STL02117	d5-NEtFOSAA	93		25-150
STL02279	M2-6:2 FTS	105		25-150
STL02280	M2-8:2 FTS	104		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_008.d
Lims ID: LCS 320-383169/2-A
Client ID:
Sample Type: LCS
Inject. Date: 04-Jun-2020 09:58:17 ALS Bottle#: 2 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: lcs 320-383169/2-a
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 08:17:40 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: nadonp Date: 05-Jun-2020 08:17:40
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_006.d

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	2.565	2.565	0.0	0.626	9738416	2.20		87.9	6150	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.565	2.573	-0.008	1.000	3667064	1.11		111	883	
D 4 13C5 PFPeA										
267.90 > 223.00	2.930	2.929	0.001	0.715	9141936	2.30		92.0	6579	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.930	2.940	-0.010	1.000	3588435	1.02		102	834	
D 9 13C3 PFBS										
301.90 > 80.00	2.974	2.973	0.001	0.725	6920896	2.23		95.7	6284	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.974	2.973	0.001	1.000	2659859	0.9164	Target=2.27	104	2428	
298.90 > 99.00	2.974	2.973	0.001	1.000	1183076		2.25(1.13-3.40)		954	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.268	3.268	0.0	0.797	1153515	2.28		97.8	1480	
8 4:2 FTS										
327.00 > 307.00	3.268	3.268	0.0	1.000	1048889	1.01		108	5667	
D 11 13C2 PFHxA										
315.00 > 270.00	3.309	3.309	0.0	0.807	9383819	2.37		94.8	7293	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.309	3.309	0.0	1.000	3567131	1.02	Target=11.40	102	1100	
313.00 > 119.00	3.309	3.309	0.0	1.000	305820		11.66(5.70-17.10)		450	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.330	3.330	0.0	1.120	2066586	0.9685	Target=2.66	103	2124	
349.00 > 99.00	3.320	3.330	-0.010	1.116	742478		2.78(1.33-3.99)		1374	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.426	3.426	0.0	0.836	1826496	2.36		94.5	3640	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.426	3.426	0.0	1.000	697151	1.01		101	2163	
D 18 13C4 PFHpA										
367.00 > 322.00	3.711	3.711	0.0	0.905	8387262	2.39		95.5	8828	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.711	3.711	0.0	1.000	3453930	1.04	Target=3.22	104	967	
363.00 > 169.00	3.711	3.711	0.0	1.000	1059255		3.26(1.61-4.84)		1847	
D 17 18O2 PFHxS										
403.00 > 84.00	3.711	3.721	-0.010	0.905	3357485	2.26		95.7	5020	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.721	3.721	0.0	1.003	1339310	0.8195	Target=2.88	90.1	2229	
399.00 > 99.00	3.711	3.721	-0.010	1.000	448455		2.99(1.44-4.31)		800	
19 DONA										
377.00 > 251.00	3.760	3.760	0.0	0.844	9674171	1.04	Target=2.04	110	7354	
377.00 > 85.00	3.760	3.760	0.0	0.844	4679905		2.07(1.02-3.05)		4748	
21 6:2 FTS										
427.00 > 407.00	4.083	4.082	0.001	1.000	838821	0.9760		103	2918	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.083	4.082	0.001	0.996	1019185	2.50		105	3751	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.099	4.099	0.0	0.920	865572	0.9740	Target=3.28	102	2229	
449.00 > 99.00	4.099	4.099	0.0	0.920	273281		3.17(1.64-4.92)		1039	
D 25 13C4 PFOA										
417.00 > 372.00	4.099	4.099	0.0	1.000	8432821	2.40		95.8	8048	
* 23 13C2 PFOA										
415.00 > 370.00	4.099	4.099	0.0		8886538	2.50			8283	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.099	4.099	0.0	1.000	3344871	0.9793	Target=2.40	97.9	1057	M
413.00 > 169.00	4.099	4.099	0.0	1.000	1379914		2.42(1.20-3.59)		6671	
D 27 13C4 PFOS										
503.00 > 80.00	4.455	4.462	-0.007	1.087	1402988	2.23		93.2	3868	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.462	4.462	0.0	1.002	569355	0.9616	Target=2.49	104	953	
499.00 > 99.00	4.462	4.462	0.0	1.002	236928		2.40(1.24-3.73)		633	
31 Perfluorononanoic acid										
463.00 > 419.00	4.470	4.470	0.0	1.000	2680260	0.9411	Target=6.81	94.1	874	
463.00 > 169.00	4.470	4.470	0.0	1.000	391746		6.84(3.40-10.21)		942	
D 30 13C5 PFNA										
468.00 > 423.00	4.470	4.470	0.0	1.091	7406078	2.58		103	7110	
32 9ClFOS										
531.00 > 351.00	4.652	4.652	0.0	1.044	2652242	0.9131		98.0	3858	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.803	4.803	0.0	1.078	441471	0.9624	Target=1.31	100	2124	
549.00 > 99.00	4.803	4.803	0.0	1.078	327185		1.35(0.66-1.97)		1351	
D 33 13C8 FOSA										
506.00 > 78.00	4.803	4.803	0.0	1.172	3054981	2.19		87.5	3658	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.803	4.803	0.0	1.000	1159864	1.03		103	2485	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 39 13C2 PFDA										
515.00 > 470.00	4.820	4.820	0.0	1.176	7272155	2.35		93.9	8619	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.820	4.820	0.0	1.000	2585271	0.99	Target=7.33	99.3	1830	
513.00 > 169.00	4.820	4.820	0.0	1.000	327370		7.90(3.67-11.00)		390	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.820	4.820	0.0	1.176	1283931	2.49		104	1756	
36 8:2 FTS										
527.00 > 507.00	4.820	4.828	-0.008	1.000	836643	1.02		106	3909	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.978	4.978	0.0	1.214	2565107	2.23		89.1	1690	
41 NMeFOSAA										
570.00 > 419.00	4.989	4.989	0.0	1.002	773787	1.07		107	810	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.112	5.111	0.001	1.147	323559	0.9536	Target=1.33	98.9	1313	
599.00 > 99.00	5.112	5.111	0.001	1.147	243121		1.33(0.66-1.99)		1046	
D 43 13C2 PFUnA										
565.00 > 520.00	5.139	5.130	0.009	1.254	6794789	2.34		93.8	10109	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.130	5.139	-0.009	0.998	2134890	1.06	Target=6.46	106	1923	
563.00 > 169.00	5.139	5.139	0.0	1.000	318648		6.70(3.23-9.69)		940	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.139	5.139	0.0	1.254	2729600	2.32		93.0	2288	
46 NEtFOSA										
584.00 > 419.00	5.148	5.148	0.0	1.002	731626	0.9543		95.4	1290	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.258	5.258	0.0	1.283	2694390	3.24		26.0	1341	
48 N-MeFOSE-M										
616.00 > 59.00	5.269	5.268	0.001	1.002	222287	1.05		105	503	
51 11ClFOS										
631.00 > 451.00	5.269	5.268	0.001	1.183	3029970	0.9512		101	7030	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.279	5.279	0.0	1.288	1010446	1.54		61.6	20.7	
50 NMeFOSA										
512.00 > 169.00	5.289	5.289	0.0	1.002	411751	1.10		110	440	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.426	5.426	0.0	1.002	2657522	1.03	Target=5.56	103	1649	
613.00 > 169.00	5.415	5.426	-0.011	1.000	463214		5.74(2.78-8.34)		1535	
D 56 13C2 PFDoA										
615.00 > 570.00	5.415	5.426	-0.011	1.321	6926620	2.26		90.5	10588	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.426	5.437	-0.011	1.324	2122143	2.25		18.0	1083	
58 10:2 FTS										
627.00 > 607.00	5.437	5.437	0.0	1.128	684000	1.05		109	2743	
53 N-EtFOSE-M										
630.00 > 59.00	5.437	5.448	-0.011	1.002	173785	1.02		102	242	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.458	5.458	0.0	1.332	691624	1.03		41.0	238	
55 N-EtFOSA-M										
526.00 > 169.00	5.458	5.458	0.0	1.000	294300	1.02		102	217	
59 PFDoS										
699.00 > 80.00	5.642	5.642	0.0	1.266	271432	0.8640	Target=2.01	89.3	1229	
699.00 > 99.00	5.642	5.642	0.0	1.266	136061		1.99(1.00-3.01)		995	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.678	5.678	0.0	1.049	2737899	1.13	Target=4.94	113	3207	
663.00 > 169.00	5.678	5.678	0.0	1.049	623058		4.39(2.47-7.41)		1721	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.913	5.901	0.012	1.442	6491555	2.53		101	7625	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.913	5.913	0.0	1.000	354517	1.03	Target=1.01	103	1220	
713.00 > 219.00	5.901	5.913	-0.012	0.998	330408		1.07(0.51-1.52)		1766	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.315	6.315	0.0	1.541	4031300	2.22		88.9	4999	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.315	6.315	0.0	1.000	1531677	1.07	Target=5.41	107	1328	
813.00 > 169.00	6.315	6.315	0.0	1.000	284176		5.39(2.70-8.11)		2022	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.702	6.696	0.006	1.061	967639	1.12	Target=5.94	112	761	
913.00 > 169.00	6.696	6.696	0.0	1.060	160708		6.02(2.97-8.91)		1478	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 05-Jun-2020 08:17:41 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_008.d

Injection Date: 04-Jun-2020 09:58:17 Instrument ID: A18

Lims ID: LCS 320-383169/2-A

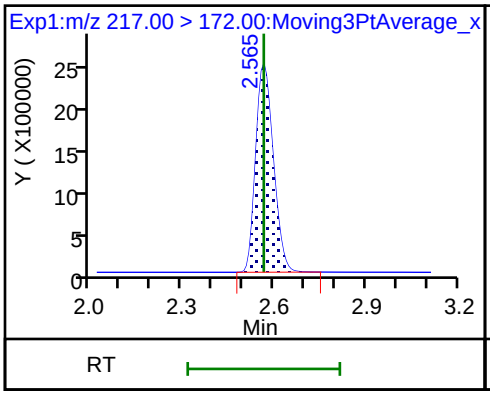
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 6

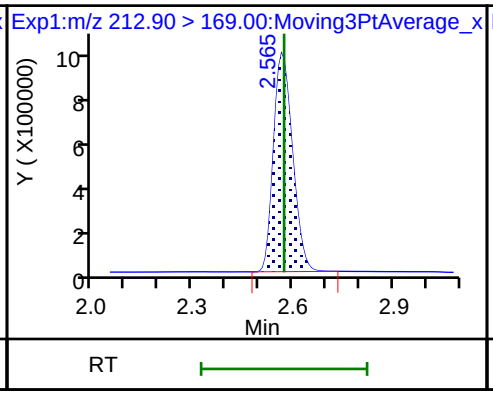
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

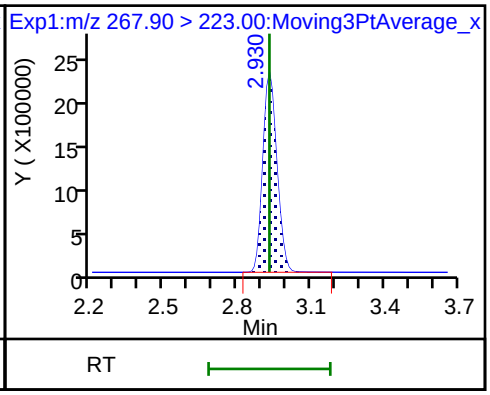
D 1 13C4 PFBA



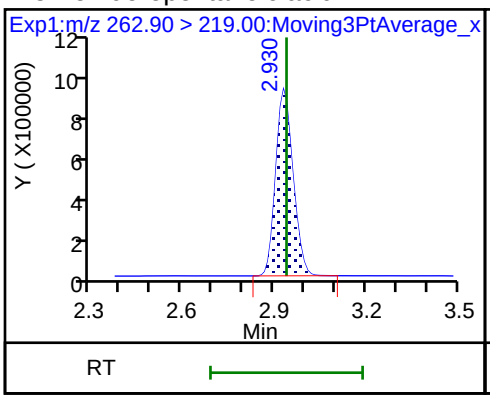
2 Perfluorobutanoic acid



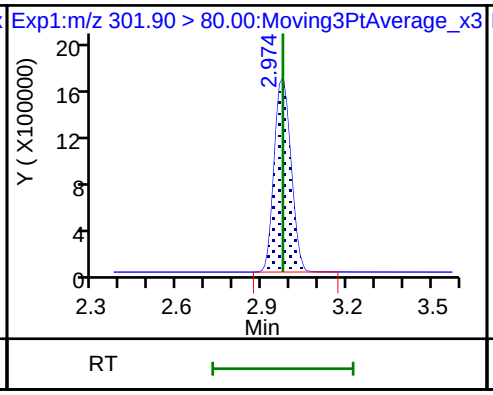
D 4 13C5 PFPeA



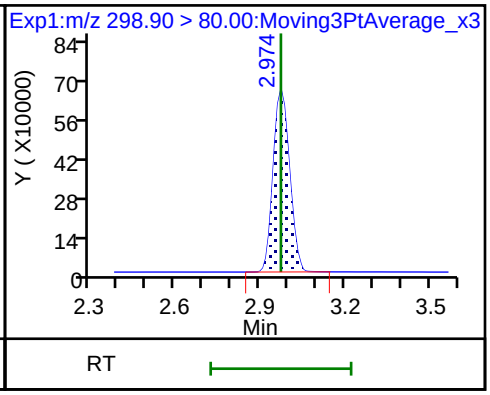
5 Perfluoropentanoic acid



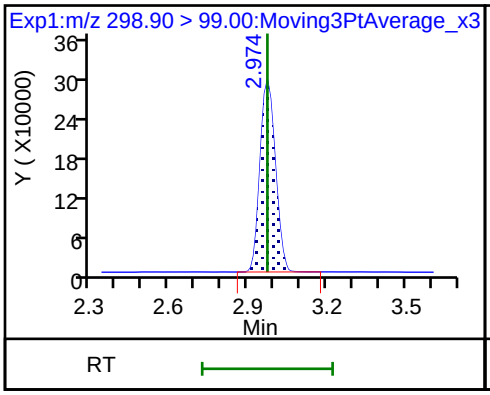
D 9 13C3 PFBS



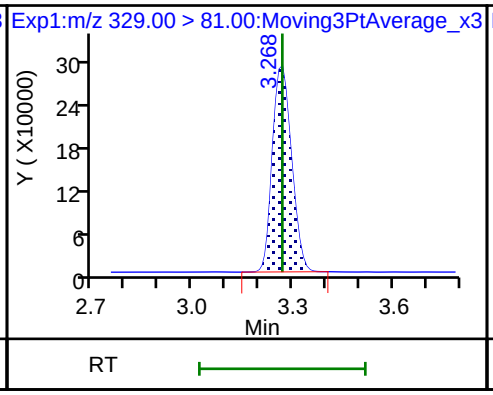
6 Perfluorobutanesulfonic acid



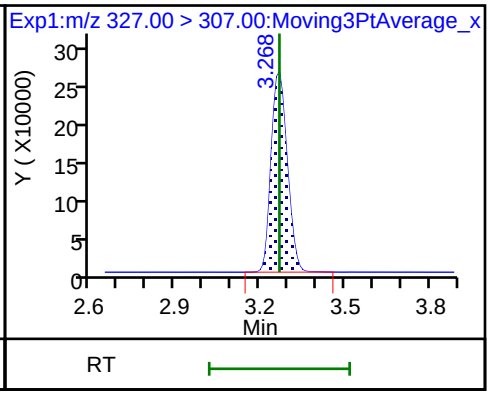
6 Perfluorobutanesulfonic acid



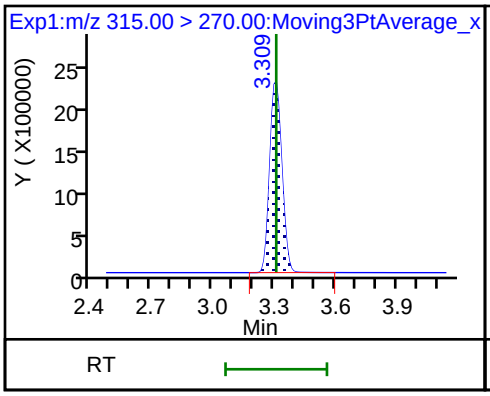
D 7 M2-4:2 FTS



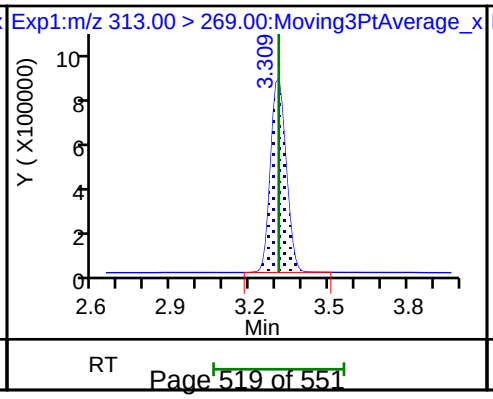
8 4:2 FTS



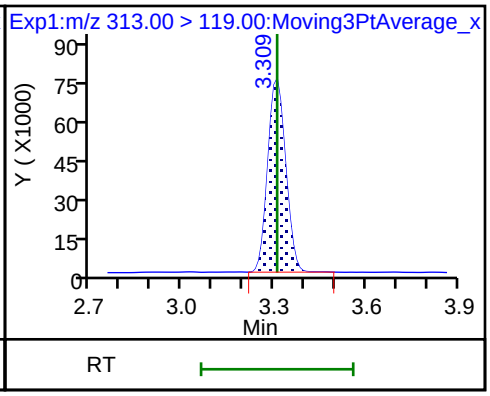
D 11 13C2 PFHxA



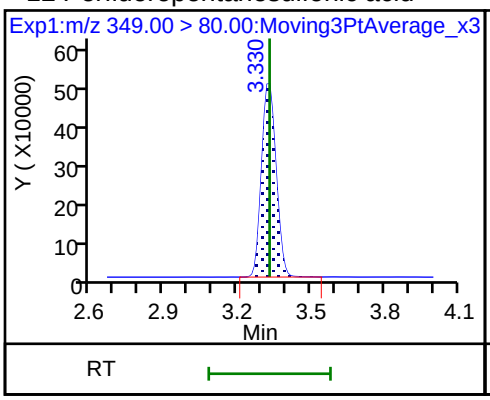
10 Perfluorohexanoic acid



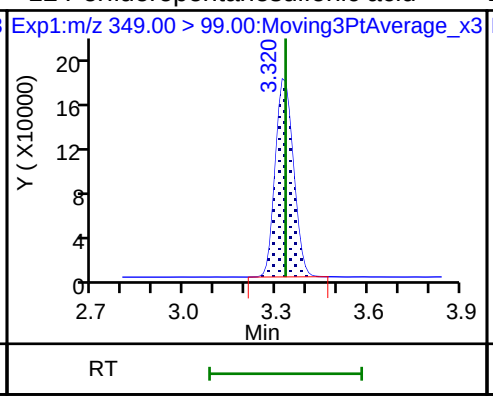
10 Perfluorohexanoic acid



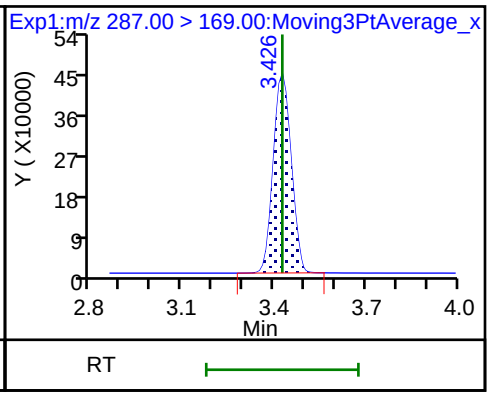
12 Perfluoropentanesulfonic acid



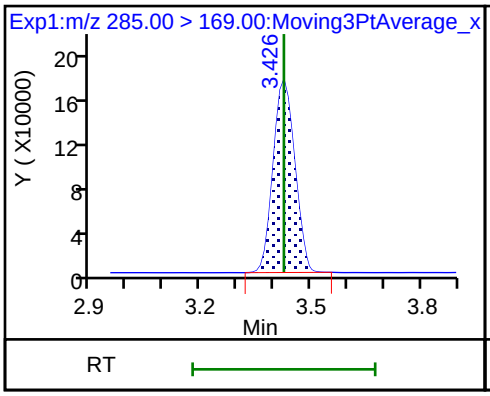
12 Perfluoropentanesulfonic acid



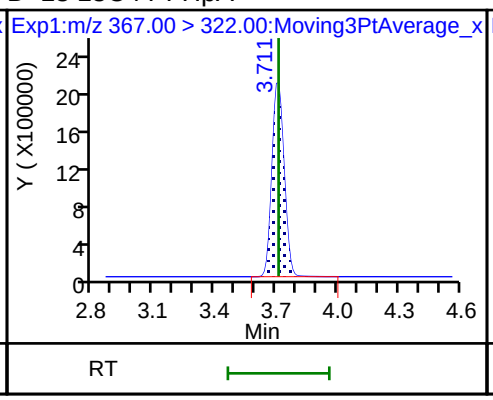
D 14 13C3 HFPO-DA



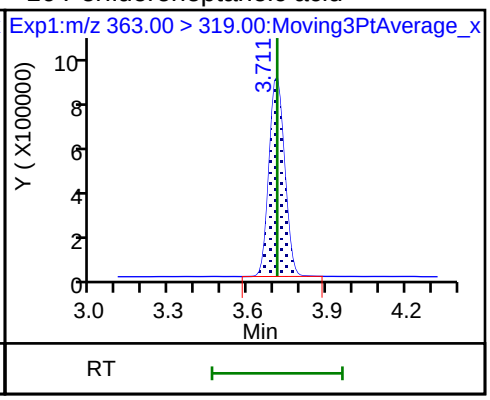
13 HPFO-DA



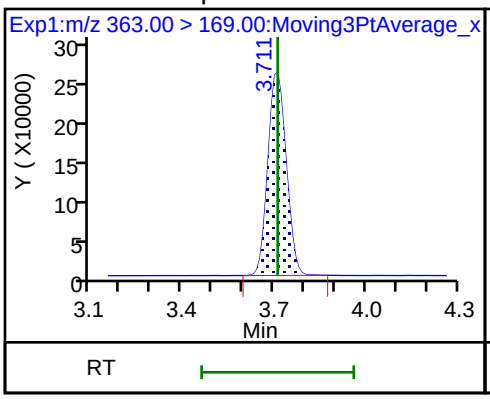
D 18 13C4 PFHpA



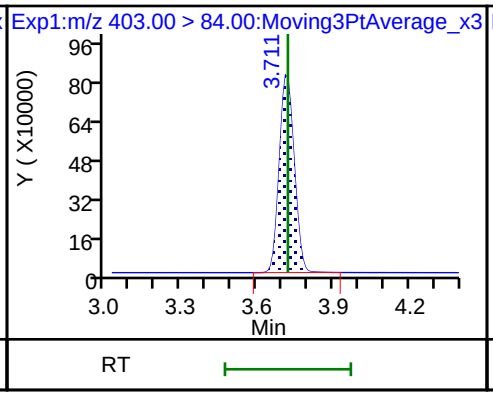
16 Perfluoroheptanoic acid



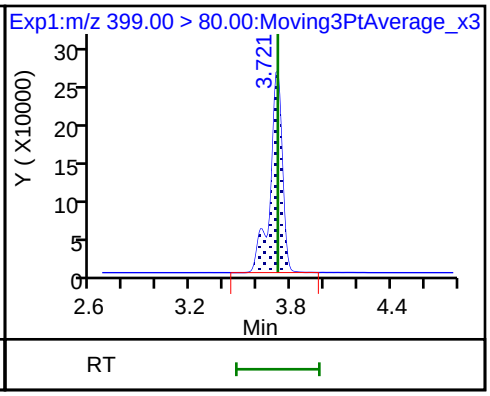
16 Perfluoroheptanoic acid



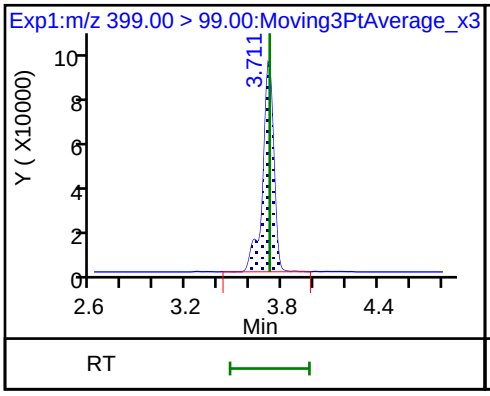
D 17 18O2 PFHxS



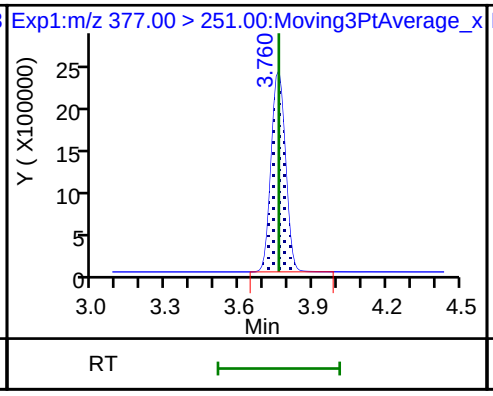
15 Perfluorohexanesulfonic acid



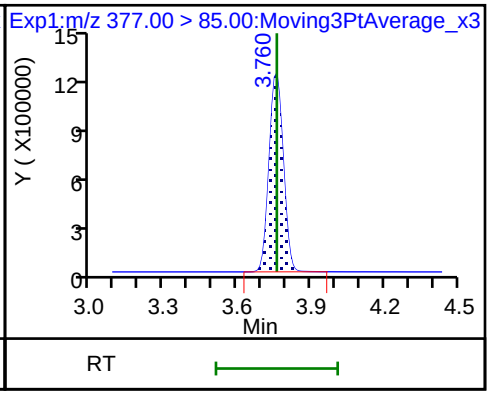
15 Perfluorohexanesulfonic acid



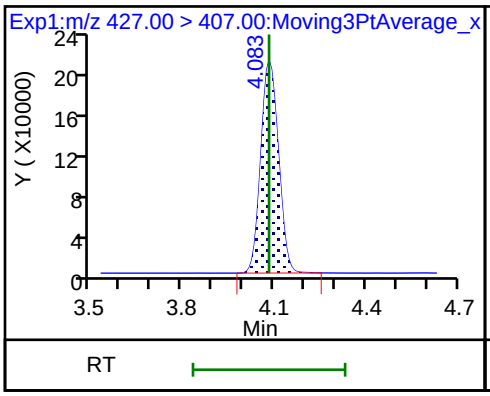
19 DONA



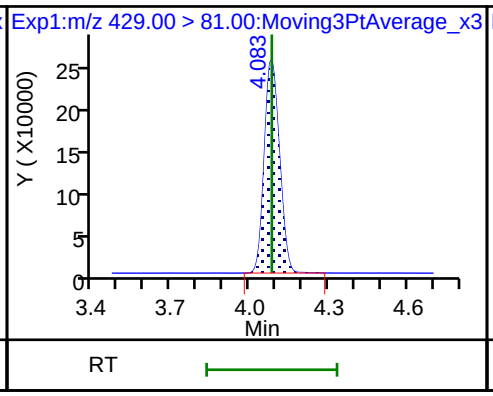
19 DONA



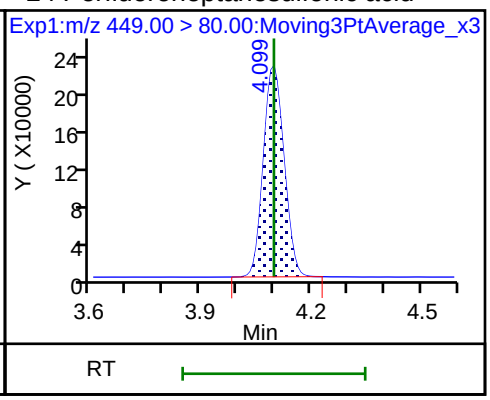
21 6:2 FTS



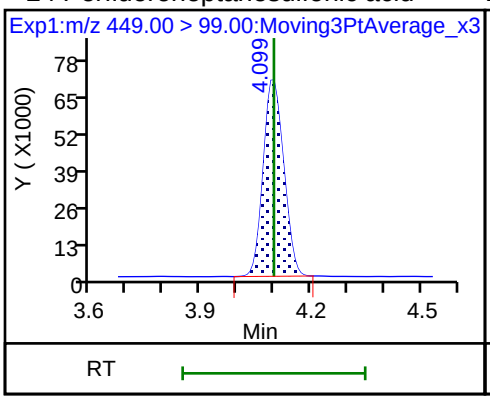
D 20 M2-6:2 FTS



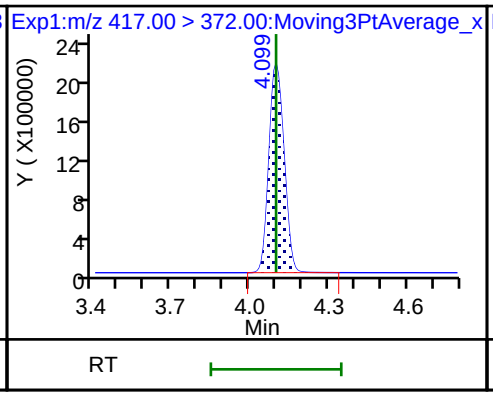
24 Perfluoroheptanesulfonic acid



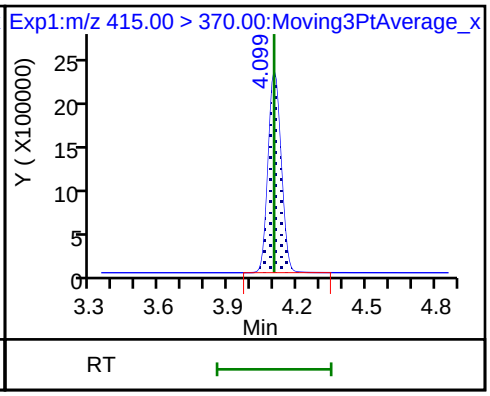
24 Perfluoroheptanesulfonic acid



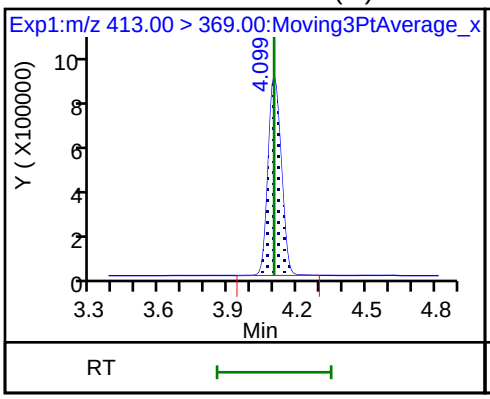
D 25 13C4 PFOA



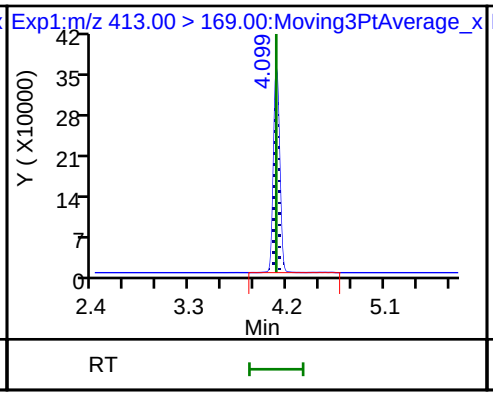
* 23 13C2 PFOA



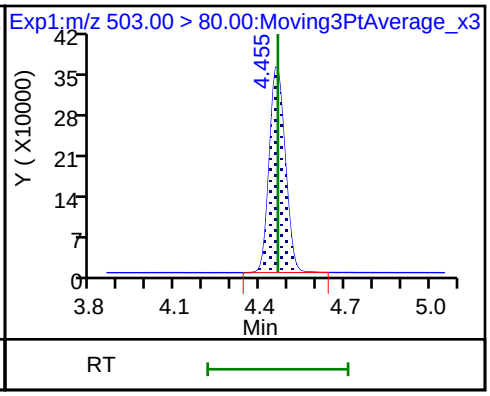
22 Perfluorooctanoic acid (M)



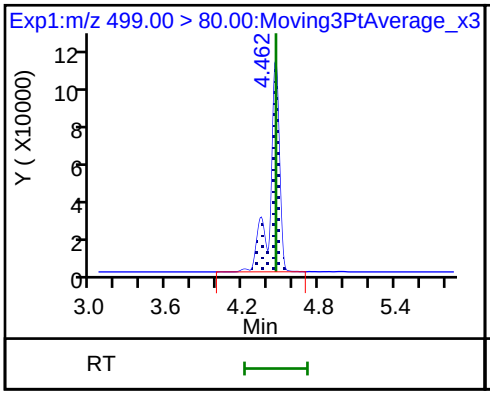
22 Perfluorooctanoic acid



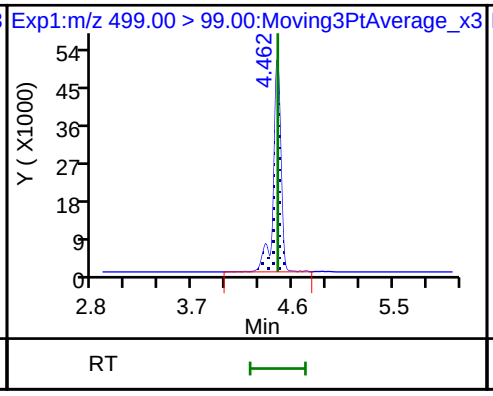
D 27 13C4 PFOS



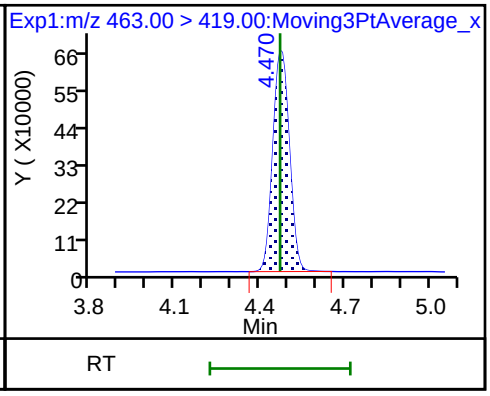
29 Perfluorooctanesulfonic acid



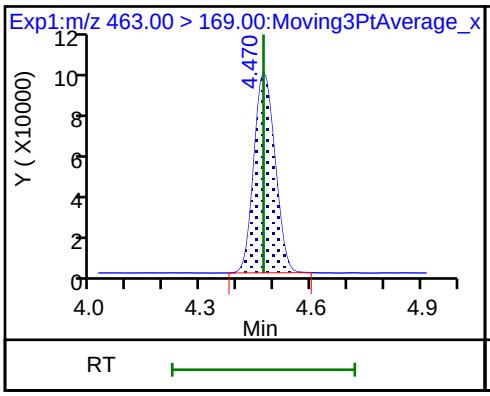
29 Perfluorooctanesulfonic acid



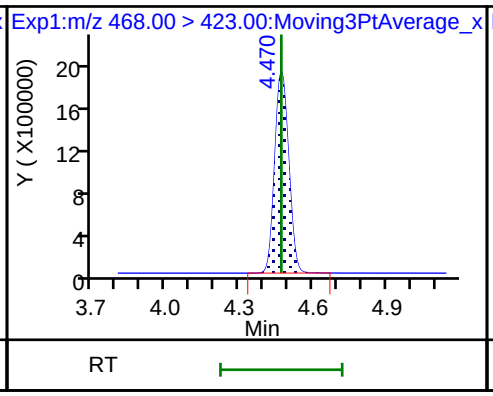
31 Perfluorononanoic acid



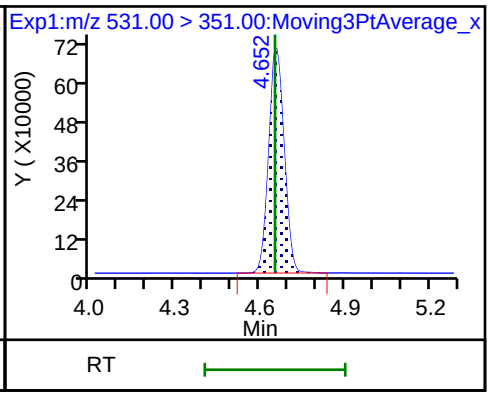
31 Perfluorononanoic acid



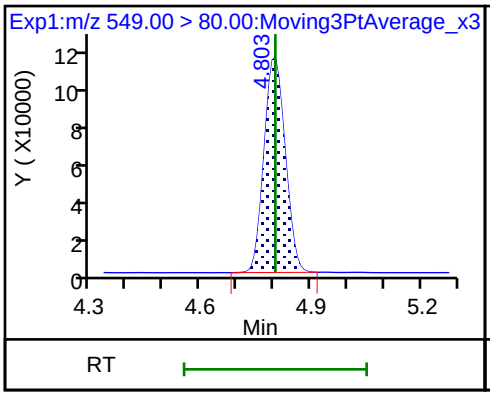
D 30 13C5 PFNA



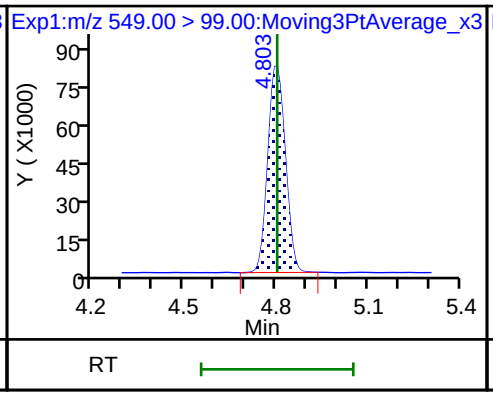
32 9ClFOS



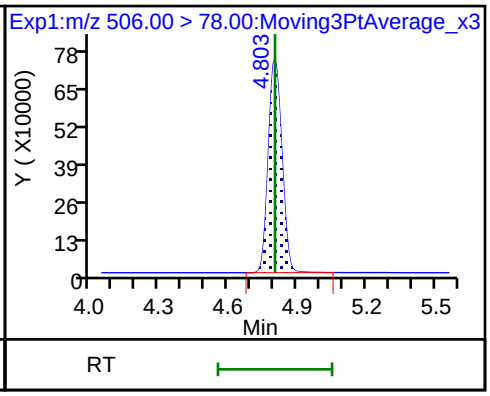
35 Perfluorononanesulfonic acid



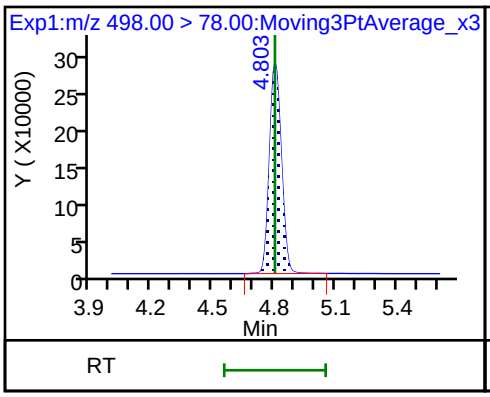
35 Perfluorononanesulfonic acid



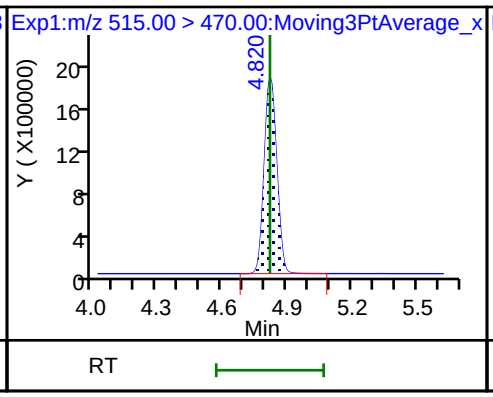
D 33 13C8 FOSA



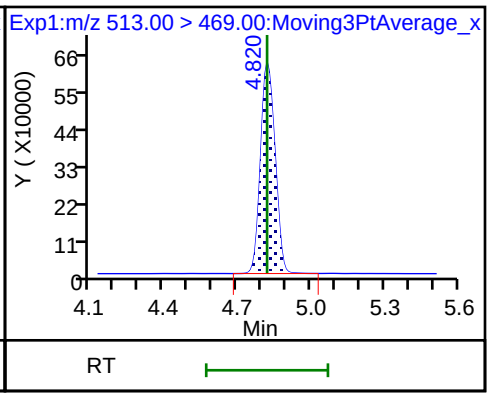
34 Perfluorooctanesulfonamide



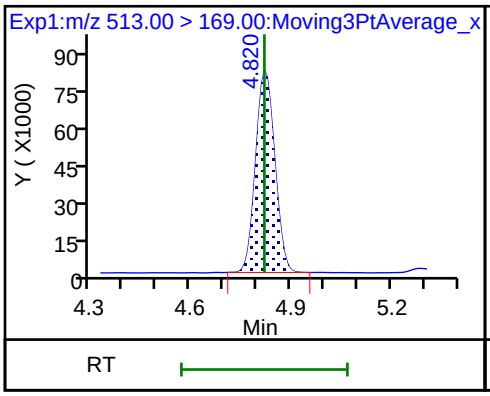
D 39 13C2 PFDA



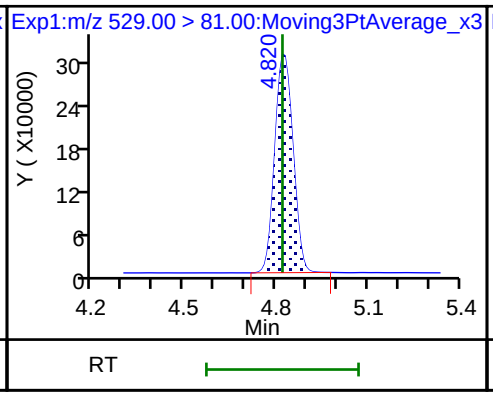
37 Perfluorodecanoic acid



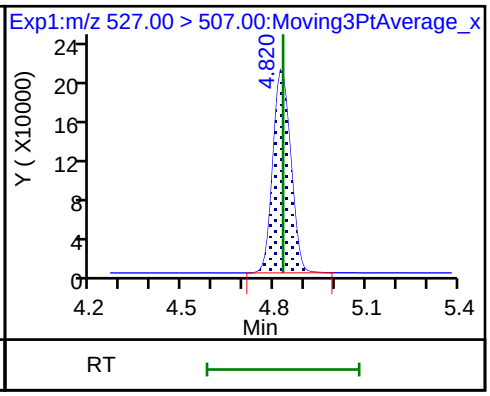
37 Perfluorodecanoic acid



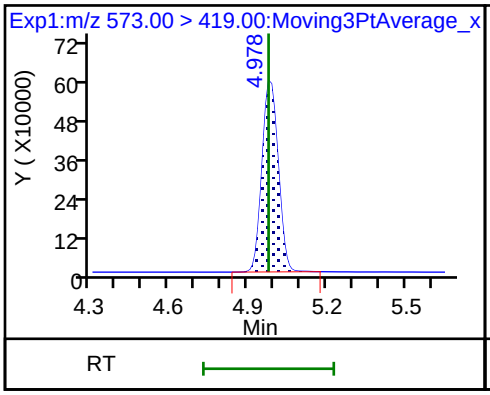
D 38 M2-8:2 FTS



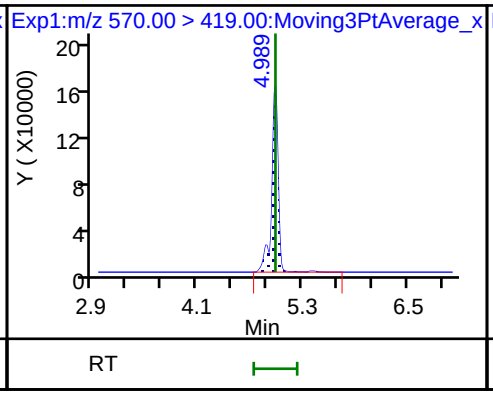
36 8:2 FTS



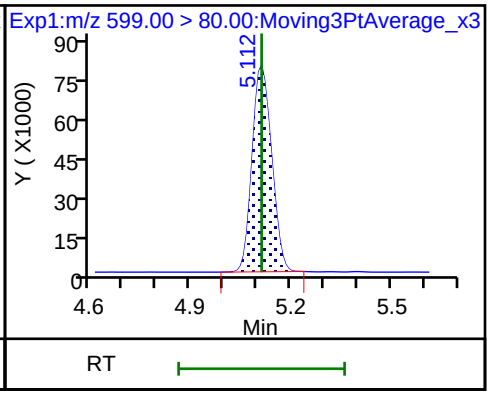
D 40 d3-NMeFOSAA



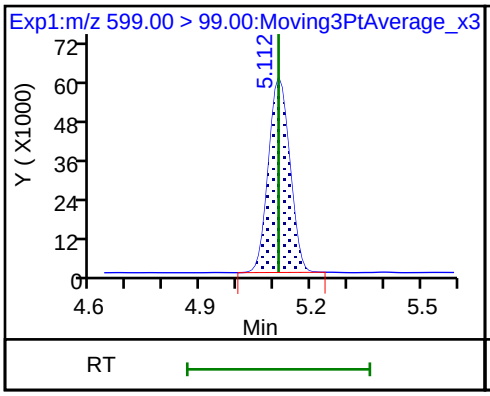
41 NMeFOSAA



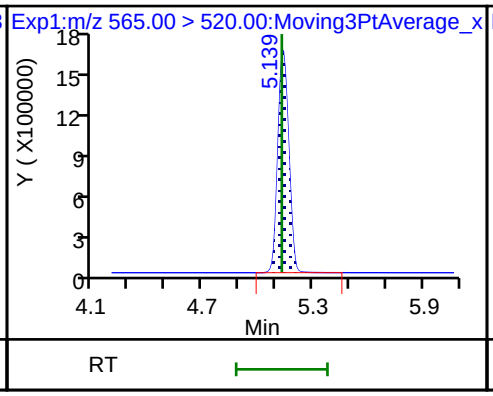
42 Perfluorodecanesulfonic acid



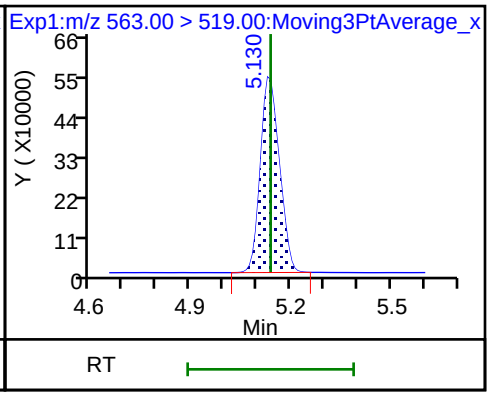
42 Perfluorodecanesulfonic acid



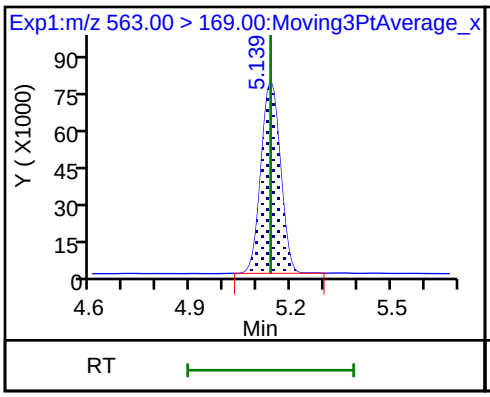
D 43 13C2 PFUnA



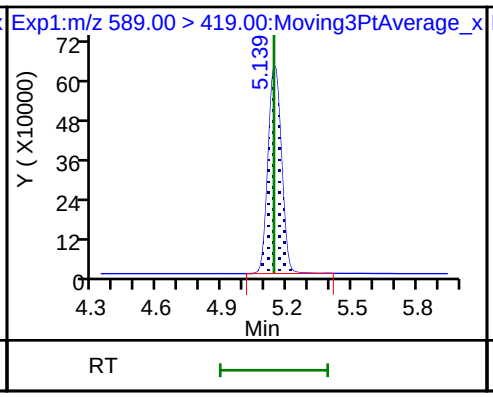
45 Perfluoroundecanoic acid



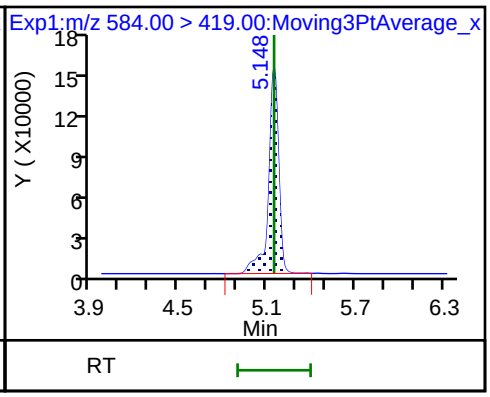
45 Perfluoroundecanoic acid



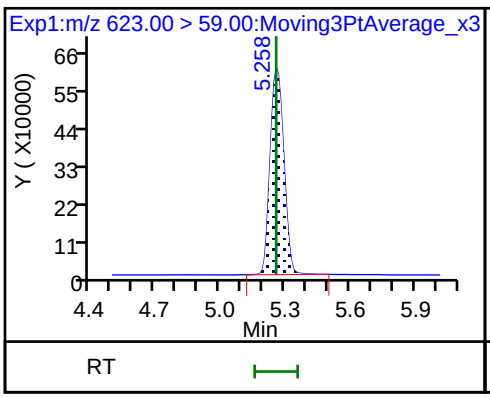
D 44 d5-NEtFOSAA



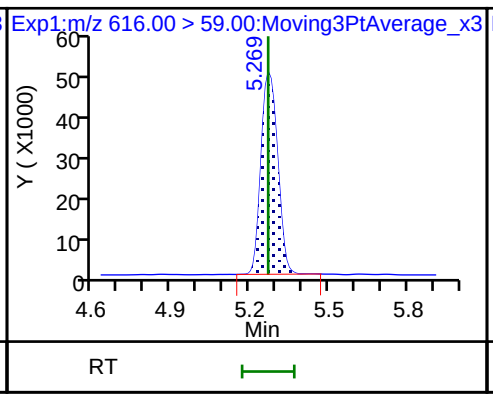
46 NEtFOSA



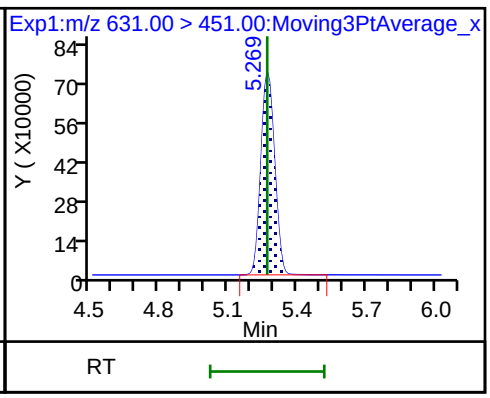
D 47 d7-N-MeFOSE-M



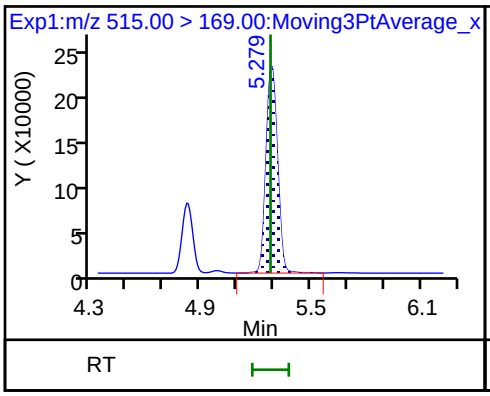
48 N-MeFOSE-M



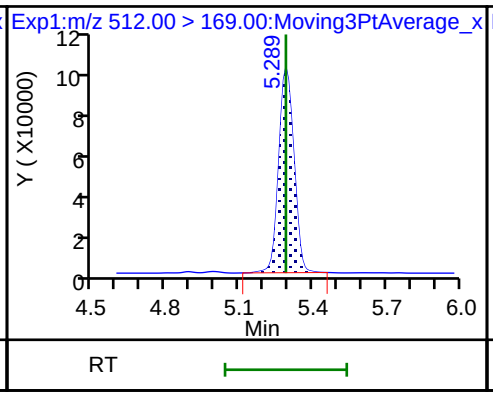
51 11ClFOS



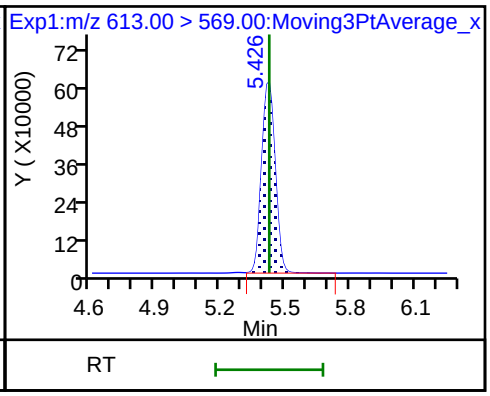
D 49 d-N-MeFOSA-M



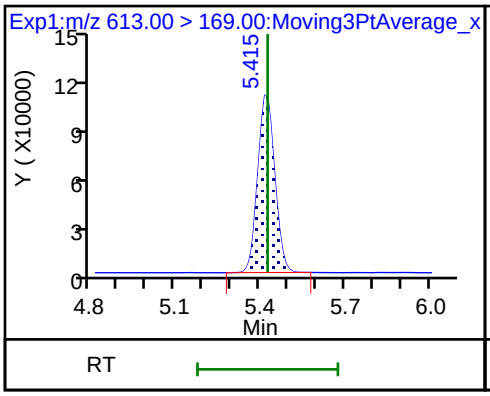
50 NMeFOSA



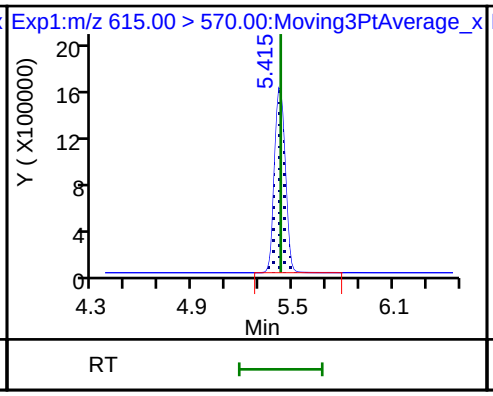
57 Perfluorododecanoic acid



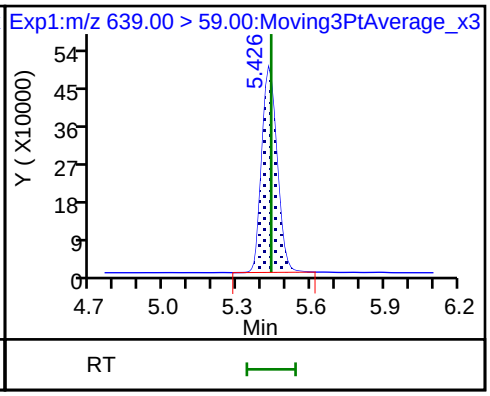
57 Perfluorododecanoic acid



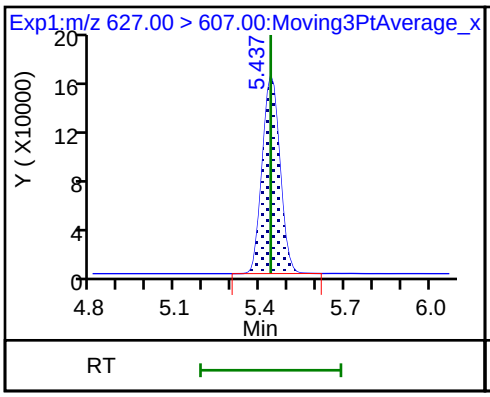
D 56 13C2 PFDoA



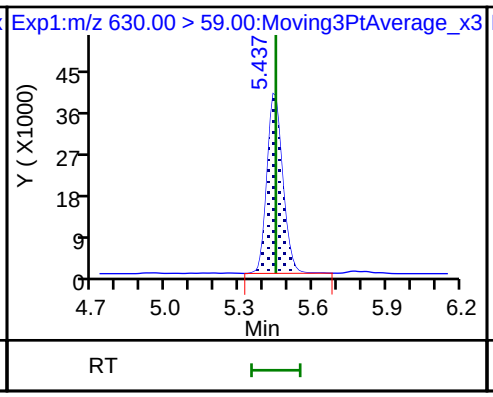
D 52 d9-N-EtFOSE-M



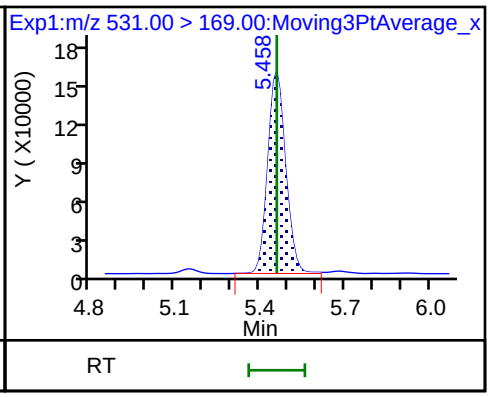
58 10:2 FTS



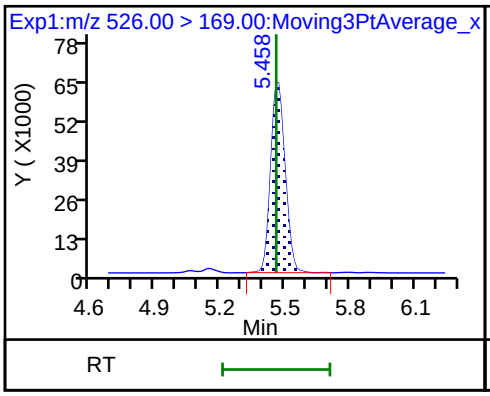
53 N-EtFOSE-M



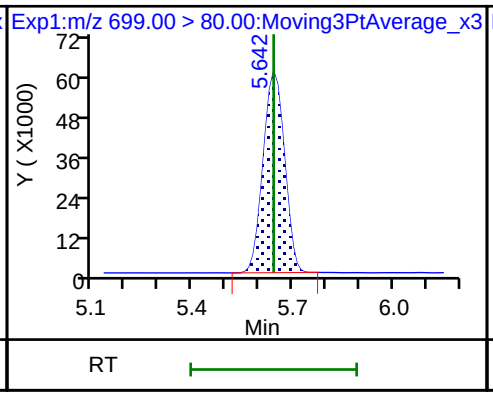
D 54 d-N-EtFOSA-M



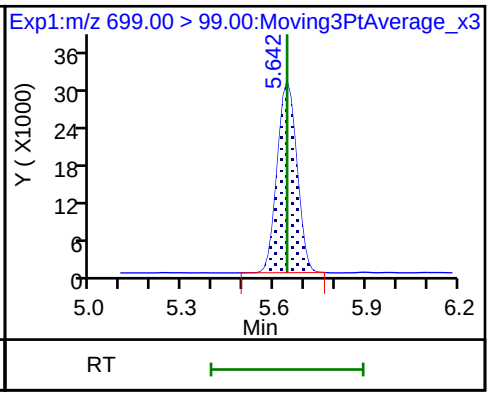
55 N-EtFOSA-M



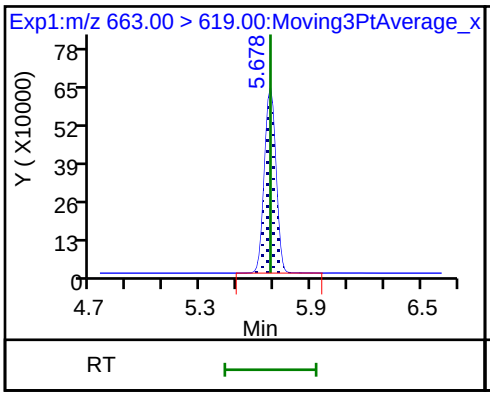
59 PFDoS



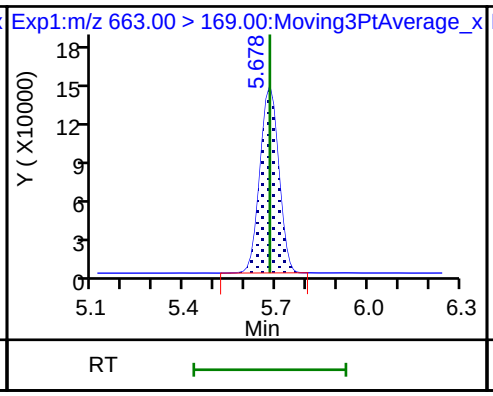
59 PFDoS



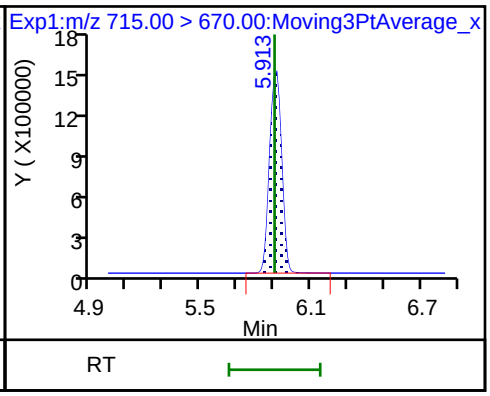
60 Perfluorotridecanoic acid



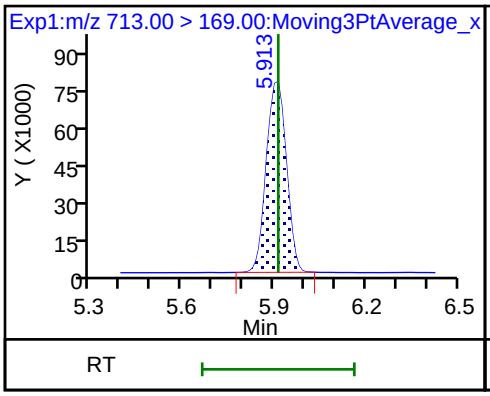
60 Perfluorotridecanoic acid



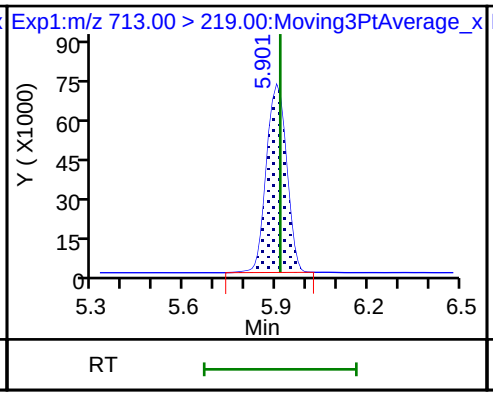
D 61 13C2 PFTeDA



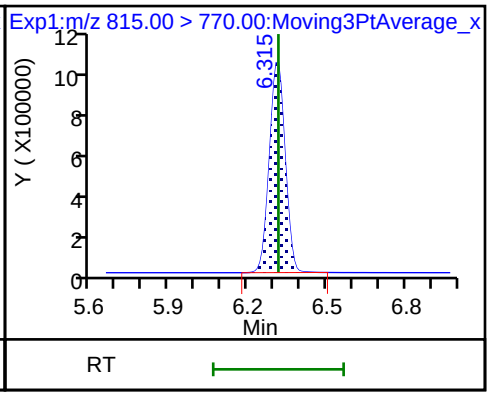
62 Perfluorotetradecanoic acid



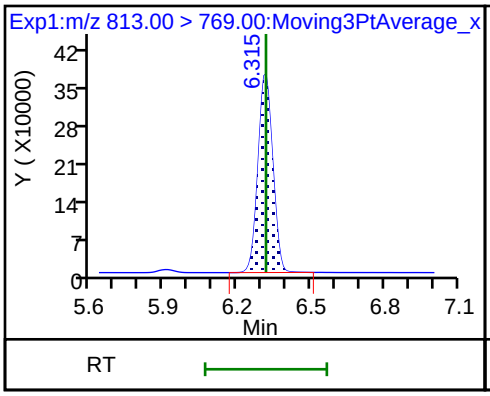
62 Perfluorotetradecanoic acid



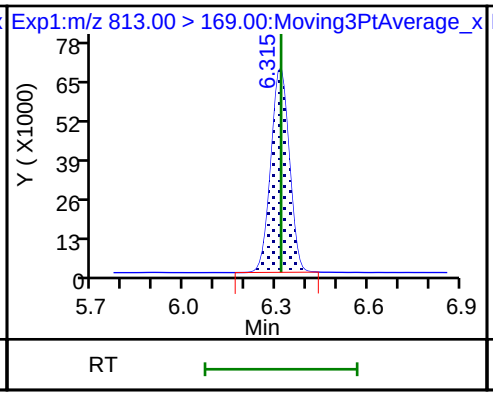
D 64 13C2 PFHxDA



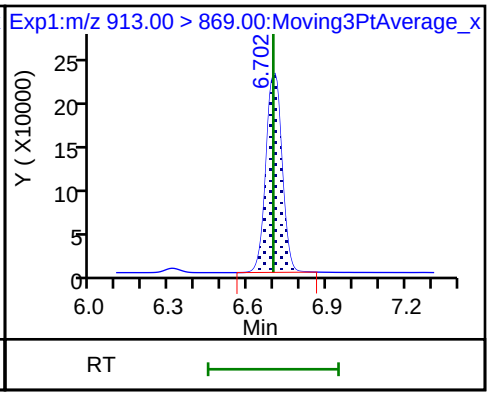
63 Perfluorohexadecanoic acid



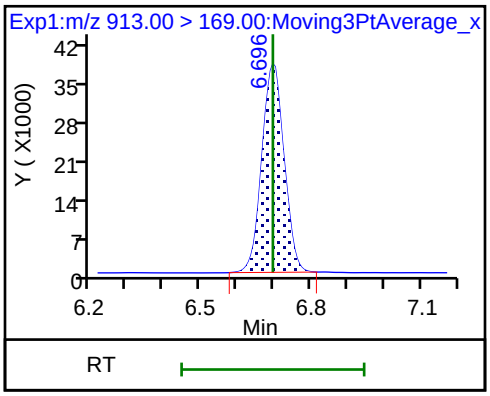
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Eurofins TestAmerica, Sacramento

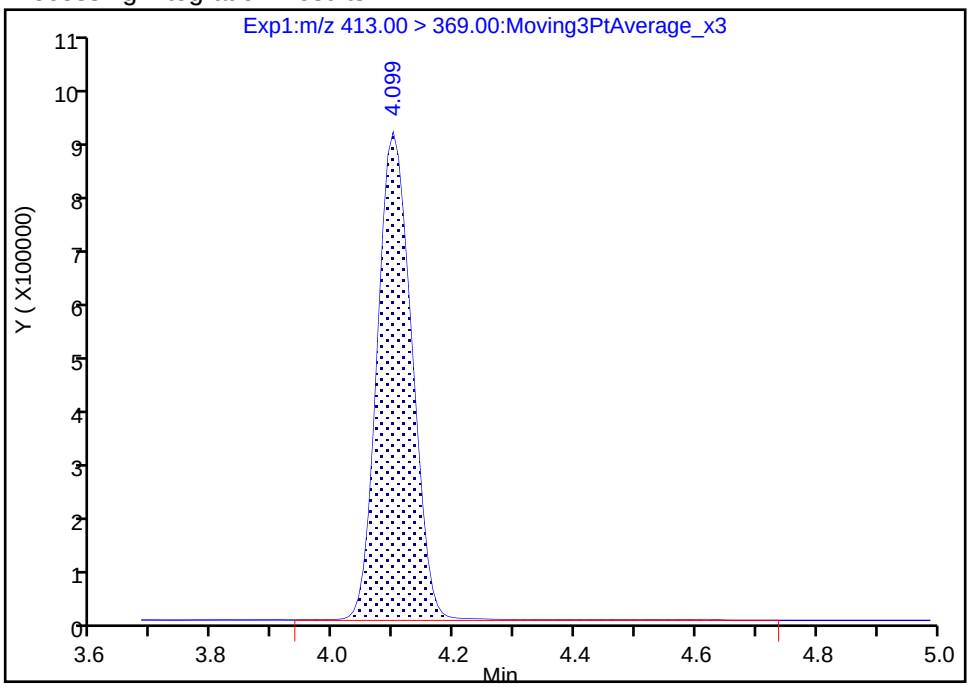
Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_008.d
Injection Date: 04-Jun-2020 09:58:17 Instrument ID: A18
Lims ID: LCS 320-383169/2-A
Client ID:
Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 2 Worklist Smp#: 6
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Method: PFAS_A18V2 Limit Group: LC PFC ICAL
Column: Gemini C18 3um 3mm x 50 mm (3.00mm) Detector EXP1

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

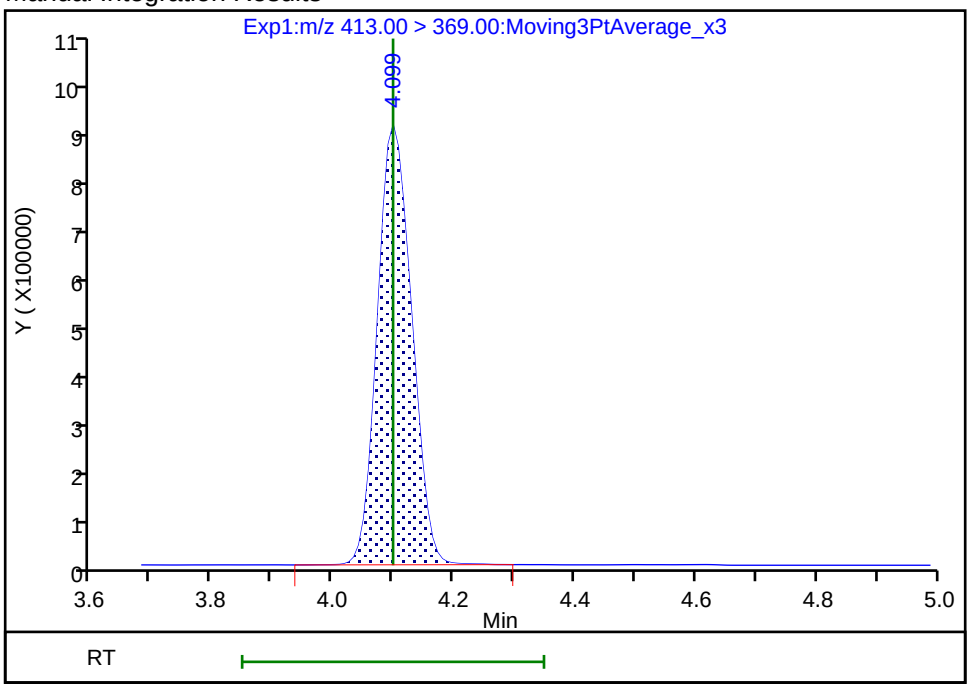
Processing Integration Results

RT: 4.10
Area: 3385524
Amount: 0.991236
Amount Units: ng/ml



Manual Integration Results

RT: 4.10
Area: 3344871
Amount: 0.979334
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:17:26
Audit Action: Manually Integrated Audit Reason: Baseline

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Client Sample ID: Lab Sample ID: LCSD 320-383169/3-A

Matrix: Water Lab File ID: 2020.06.04_A18_PFC_A_009.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:28

Sample wt/vol: 250(mL) Date Analyzed: 06/04/2020 10:07

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383436 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
375-22-4	Perfluorobutanoic acid	44.3		2.0	0.35
2706-90-3	Perfluoropentanoic acid (PFPeA)	40.4		2.0	0.49
307-24-4	Perfluorohexanoic acid (PFHxA)	41.5		2.0	0.58
375-85-9	Perfluoroheptanoic acid	42.7		2.0	0.25
335-67-1	Perfluorooctanoic acid (PFOA)	38.8		2.0	0.85
375-95-1	Perfluorononanoic acid (PFNA)	40.5		2.0	0.27
335-76-2	Perfluorodecanoic acid (PFDA)	45.0		2.0	0.31
2058-94-8	Perfluoroundecanoic acid (PFUnA)	40.2		2.0	1.1
307-55-1	Perfluorododecanoic acid (PFDoA)	37.6		2.0	0.55
72629-94-8	Perfluorotridecanoic acid (PFTriA)	37.8		2.0	1.3
376-06-7	Perfluorotetradecanoic acid (PFTeA)	48.0		2.0	0.29
375-73-5	Perfluorobutanesulfonic acid (PFBS)	38.7		2.0	0.20
355-46-4	Perfluorohexanesulfonic acid (PFHxS)	33.4		2.0	0.17
375-92-8	Perfluoroheptanesulfonic Acid (PFHpS)	40.0		2.0	0.19
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	38.4		2.0	0.54
335-77-3	Perfluorodecanesulfonic acid (PFDS)	37.0		2.0	0.32
754-91-6	Perfluorooctanesulfonamide (FOSA)	42.4		2.0	0.35
2355-31-9	N-methylperfluorooctanesulfonamidoacetic acid (NMeFOSAA)	43.2		20	3.1
2991-50-6	N-ethylperfluorooctanesulfonamidoacetic acid (NEtFOSAA)	39.6		20	1.9
27619-97-2	6:2 FTS	40.5		20	2.0
39108-34-4	8:2 FTS	42.2		20	2.0

FORM I
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Client Sample ID: Lab Sample ID: LCSD 320-383169/3-A

Matrix: Water Lab File ID: 2020.06.04_A18_PFC_A_009.d

Analysis Method: 537 (modified) Date Collected:

Extraction Method: 3535 Date Extracted: 06/03/2020 18:28

Sample wt/vol: 250(mL) Date Analyzed: 06/04/2020 10:07

Con. Extract Vol.: 10.00(mL) Dilution Factor: 1

Injection Volume: 20(uL) GC Column: Gemini C18 3x50 ID: 3(mm)

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

Analysis Batch No.: 383436 Units: ng/L

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00992	13C4 PFBA	86		25-150
STL01893	13C5 PFPeA	89		25-150
STL00993	13C2 PFHxA	90		25-150
STL01892	13C4 PFHpA	90		25-150
STL00990	13C4 PFOA	93		25-150
STL00995	13C5 PFNA	93		25-150
STL00996	13C2 PFDA	86		25-150
STL00997	13C2 PFUnA	94		25-150
STL00998	13C2 PFDoA	91		25-150
STL02116	13C2 PFTeDA	85		25-150
STL02337	13C3 PFBS	90		25-150
STL00994	18O2 PFHxS	91		25-150
STL00991	13C4 PFOS	92		25-150
STL01056	13C8 FOSA	81		25-150
STL02118	d3-NMeFOSAA	81		25-150
STL02117	d5-NEtFOSAA	80		25-150
STL02279	M2-6:2 FTS	99		25-150
STL02280	M2-8:2 FTS	102		25-150

Eurofins TestAmerica, Sacramento
Target Compound Quantitation Report

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_009.d
Lims ID: LCSD 320-383169/3-A
Client ID:
Sample Type: LCSD
Inject. Date: 04-Jun-2020 10:07:26 ALS Bottle#: 3 Worklist Smp#: 7
Injection Vol: 20.0 ul Dil. Factor: 1.0000
Sample Info: lcsd 320-383169/3-a
Misc. Info.: Plate: 1 Rack: 1
Operator ID: TAISACA18-PC\A-18 Instrument ID: A18

Method: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\PFAS_A18V2.m
Limit Group: LC PFC ICAL
Last Update: 05-Jun-2020 08:18:25 Calib Date: 03-Jun-2020 21:52:32
Integrator: Picker
Quant Method: Isotopic Dilution Quant By: Initial Calibration
Last ICal File: \\chromfs\Sacramento\ChromData\A18\20200604-96921.b\2020.06.03_A18_PFC_ICAL_0015.d

Column 1 : Gemini C18 3um 3mm x 50 mm (3.00 mm) Det: EXP1
Process Host: CTX1003

First Level Reviewer: nadonp Date: 05-Jun-2020 08:18:25
Ratio Calibration: CCV Sample: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_006.d

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	2.574	2.565	0.009	0.628	10065956	2.16		86.3	10120	
2 Perfluorobutanoic acid										
212.90 > 169.00	2.574	2.573	0.001	1.000	3800602	1.11		111	866	
D 4 13C5 PFPeA										
267.90 > 223.00	2.930	2.929	0.001	0.715	9278744	2.22		88.7	6198	
5 Perfluoropentanoic acid										
262.90 > 219.00	2.940	2.940	0.0	1.004	3606269	1.01		101	805	
D 9 13C3 PFBS										
301.90 > 80.00	2.974	2.973	0.001	0.725	6887634	2.10		90.5	8756	
6 Perfluorobutanesulfonic acid										
298.90 > 80.00	2.974	2.973	0.001	1.000	2796043	0.9679	Target=2.27	109	2290	
298.90 > 99.00	2.974	2.973	0.001	1.000	1237249		2.26(1.13-3.40)		888	
D 7 M2-4:2 FTS										
329.00 > 81.00	3.271	3.268	0.003	0.798	1149963	2.16		92.6	1607	
8 4:2 FTS										
327.00 > 307.00	3.271	3.268	0.003	1.000	1038581	1.01		108	4034	
D 11 13C2 PFHxA										
315.00 > 270.00	3.312	3.309	0.003	0.808	9412105	2.26		90.3	4534	
10 Perfluorohexanoic acid										
313.00 > 269.00	3.312	3.309	0.003	1.000	3631770	1.04	Target=11.40	104	1119	
313.00 > 119.00	3.312	3.309	0.003	1.000	295208		12.30(5.70-17.10)		403	
12 Perfluoropentanesulfonic acid										
349.00 > 80.00	3.333	3.330	0.003	1.121	2110921	0.99	Target=2.66	106	2337	
349.00 > 99.00	3.333	3.330	0.003	1.121	776971		2.72(1.33-3.99)		1617	
D 14 13C3 HFPO-DA										
287.00 > 169.00	3.429	3.426	0.003	0.836	1774502	2.18		87.2	4431	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 HPFO-DA										
285.00 > 169.00	3.429	3.426	0.003	1.000	708700	1.06		106	1964	
D 18 13C4 PFHpA										
367.00 > 322.00	3.712	3.711	0.001	0.905	8316895	2.25		89.9	9340	
16 Perfluoroheptanoic acid										
363.00 > 319.00	3.712	3.711	0.001	1.000	3499933	1.07	Target=3.22	107	1100	
363.00 > 169.00	3.712	3.711	0.001	1.000	1060737		3.30(1.61-4.84)		1937	
D 17 18O2 PFHxS										
403.00 > 84.00	3.722	3.721	0.001	0.908	3379057	2.16		91.5	4701	
15 Perfluorohexanesulfonic acid										
399.00 > 80.00	3.722	3.721	0.001	1.000	1373610	0.8351	Target=2.88	91.8	6522	
399.00 > 99.00	3.722	3.721	0.001	1.000	476798		2.88(1.44-4.31)		1011	
19 DONA										
377.00 > 251.00	3.761	3.760	0.001	0.843	9549396	0.9829	Target=2.04	104	9420	
377.00 > 85.00	3.761	3.760	0.001	0.843	4619524		2.07(1.02-3.05)		5441	
21 6:2 FTS										
427.00 > 407.00	4.084	4.082	0.002	1.000	861508	1.01		107	2861	
D 20 M2-6:2 FTS										
429.00 > 81.00	4.084	4.082	0.002	0.996	1009617	2.35		99.1	2177	
24 Perfluoroheptanesulfonic acid										
449.00 > 80.00	4.101	4.099	0.002	0.919	925316	1.00	Target=3.28	105	2775	
449.00 > 99.00	4.101	4.099	0.002	0.919	277874		3.33(1.64-4.92)		1201	
D 25 13C4 PFOA										
417.00 > 372.00	4.101	4.099	0.002	1.000	8648750	2.33		93.3	7946	
* 23 13C2 PFOA										
415.00 > 370.00	4.101	4.099	0.002		9356060	2.50			6887	
22 Perfluorooctanoic acid										M
413.00 > 369.00	4.101	4.099	0.002	1.000	3400742	0.9708	Target=2.40	97.1	1085	M
413.00 > 169.00	4.109	4.099	0.010	1.002	1419913		2.40(1.20-3.59)		6665	
D 27 13C4 PFOS										
503.00 > 80.00	4.462	4.462	0.0	1.088	1459881	2.20		92.1	4342	
29 Perfluorooctanesulfonic acid										
499.00 > 80.00	4.462	4.462	0.0	1.000	591476	0.9601	Target=2.49	103	1071	
499.00 > 99.00	4.462	4.462	0.0	1.000	239429		2.47(1.24-3.73)		596	
31 Perfluorononanoic acid										
463.00 > 419.00	4.478	4.470	0.008	1.000	2733595	1.01	Target=6.81	101	906	
463.00 > 169.00	4.478	4.470	0.008	1.000	379113		7.21(3.40-10.21)		837	
D 30 13C5 PFNA										
468.00 > 423.00	4.478	4.470	0.008	1.092	7015476	2.32		92.9	7131	
32 9ClFOS										
531.00 > 351.00	4.658	4.652	0.006	1.044	2789672	0.9229		99.0	4548	
34 Perfluorooctanesulfonamide										
498.00 > 78.00	4.803	4.803	0.0	1.000	1158376	1.06		106	2255	
35 Perfluorononanesulfonic acid										
549.00 > 80.00	4.803	4.803	0.0	1.076	454339	0.9519	Target=1.31	99.2	1951	
549.00 > 99.00	4.803	4.803	0.0	1.076	330441		1.37(0.66-1.97)		1309	
D 33 13C8 FOSA										
506.00 > 78.00	4.803	4.803	0.0	1.171	2971806	2.02		80.8	6926	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 39 13C2 PFDA										
515.00 > 470.00	4.829	4.820	0.009	1.178	7030432	2.16		86.2	6477	
37 Perfluorodecanoic acid										
513.00 > 469.00	4.829	4.820	0.009	1.000	2831826	1.13	Target=7.33	113	2017	
513.00 > 169.00	4.829	4.820	0.009	1.000	344411		8.22(3.67-11.00)		459	
D 38 M2-8:2 FTS										
529.00 > 81.00	4.829	4.820	0.009	1.178	1320399	2.44		102	2024	
36 8:2 FTS										
527.00 > 507.00	4.829	4.828	0.001	1.000	893502	1.06		110	3617	
D 40 d3-NMeFOSAA										
573.00 > 419.00	4.989	4.978	0.011	1.217	2450082	2.02		80.9	3896	
41 NMeFOSAA										
570.00 > 419.00	4.989	4.989	0.0	1.000	749437	1.08		108	9888	
42 Perfluorodecanesulfonic acid										
599.00 > 80.00	5.112	5.111	0.001	1.145	326786	0.9255	Target=1.33	96.0	1236	
599.00 > 99.00	5.112	5.111	0.001	1.145	239516		1.36(0.66-1.99)		1307	
D 43 13C2 PFUnA										
565.00 > 520.00	5.139	5.130	0.009	1.253	7175003	2.35		94.0	5048	
45 Perfluoroundecanoic acid										
563.00 > 519.00	5.139	5.139	0.0	1.000	2137882	1.01	Target=6.46	101	2302	
563.00 > 169.00	5.139	5.139	0.0	1.000	350472		6.10(3.23-9.69)		808	
D 44 d5-NEtFOSAA										
589.00 > 419.00	5.139	5.139	0.0	1.253	2476634	2.00		80.1	2435	
46 NEtFOSA										
584.00 > 419.00	5.148	5.148	0.0	1.002	688035	0.9891		98.9	1349	
D 47 d7-N-MeFOSE-M										
623.00 > 59.00	5.258	5.258	0.0	1.282	2730573	3.12		25.0	1511	
48 N-MeFOSE-M										
616.00 > 59.00	5.279	5.268	0.011	1.004	246662	1.15		115	468	
51 11ClFOS										
631.00 > 451.00	5.269	5.268	0.001	1.181	2934051	0.8852		94.0	4757	
D 49 d-N-MeFOSA-M										
515.00 > 169.00	5.289	5.279	0.010	1.290	875338	1.27		50.7	20.6	
50 NMeFOSA										
512.00 > 169.00	5.289	5.289	0.0	1.000	378881	1.17		117	364	
57 Perfluorododecanoic acid										
613.00 > 569.00	5.426	5.426	0.0	1.000	2567745	0.9396	Target=5.56	94.0	1799	
613.00 > 169.00	5.426	5.426	0.0	1.000	410654		6.25(2.78-8.34)		1557	
D 56 13C2 PFDoA										
615.00 > 570.00	5.426	5.426	0.0	1.323	7336162	2.28		91.0	7624	
D 52 d9-N-EtFOSE-M										
639.00 > 59.00	5.437	5.437	0.0	1.326	2548471	2.57		20.5	1317	
58 10:2 FTS										
627.00 > 607.00	5.437	5.437	0.0	1.126	688241	1.03		107	2183	
53 N-EtFOSE-M										
630.00 > 59.00	5.448	5.448	0.0	1.002	206996	1.01		101	363	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 54 d-N-EtFOSA-M										
531.00 > 169.00	5.458	5.458	0.0	1.331	636640	0.8970		35.9	209	
55 N-EtFOSA-M										
526.00 > 169.00	5.469	5.458	0.011	1.002	291476	1.10		110	275	
59 PFDoS										
699.00 > 80.00	5.642	5.642	0.0	1.264	266631	0.8157	Target=2.01	84.3	1333	
699.00 > 99.00	5.642	5.642	0.0	1.264	133770		1.99(1.00-3.01)		1046	
60 Perfluorotridecanoic acid										
663.00 > 619.00	5.678	5.678	0.0	1.047	2421035	0.9438	Target=4.94	94.4	2745	
663.00 > 169.00	5.678	5.678	0.0	1.047	537096		4.51(2.47-7.41)		1319	
D 61 13C2 PFTeDA										
715.00 > 670.00	5.913	5.901	0.012	1.442	5713378	2.12		84.7	5000	
62 Perfluorotetradecanoic acid										
713.00 > 169.00	5.913	5.913	0.0	1.000	365254	1.20	Target=1.01	120	1440	
713.00 > 219.00	5.901	5.913	-0.012	0.998	326811		1.12(0.51-1.52)		2143	
D 64 13C2 PFHxDA										
815.00 > 770.00	6.307	6.315	-0.008	1.538	3913958	2.05		82.0	5164	
63 Perfluorohexadecanoic acid										
813.00 > 769.00	6.315	6.315	0.0	1.001	1479024	1.06	Target=5.41	106	1368	
813.00 > 169.00	6.315	6.315	0.0	1.001	284259		5.20(2.70-8.11)		1982	
65 Perfluorooctadecanoic acid										
913.00 > 869.00	6.696	6.696	0.0	1.062	939709	1.12	Target=5.94	112	755	
913.00 > 169.00	6.696	6.696	0.0	1.062	164649		5.71(2.97-8.91)		1160	

QC Flag Legend

Review Flags

M - Manually Integrated

Report Date: 05-Jun-2020 08:18:26 Chrom Revision: 2.3 03-Jun-2020 23:27:16

Eurofins TestAmerica, Sacramento

Data File: \\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_009.d

Injection Date: 04-Jun-2020 10:07:26 Instrument ID: A18

Lims ID: LCSD 320-383169/3-A

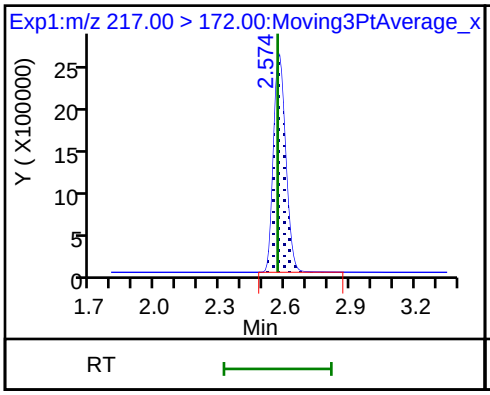
Client ID:

Operator ID: TAISACA18-PC\A-18 ALS Bottle#: 3 Worklist Smp#: 7

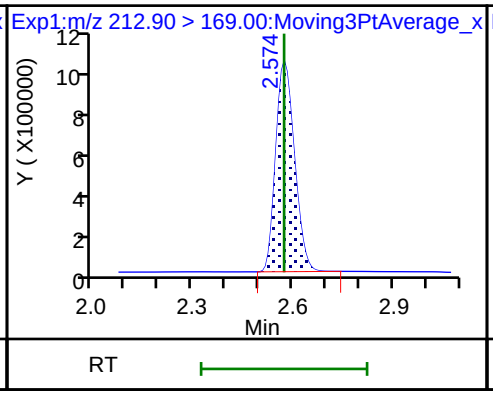
Injection Vol: 20.0 ul Dil. Factor: 1.0000

Method: PFAS_A18V2 Limit Group: LC PFC ICAL

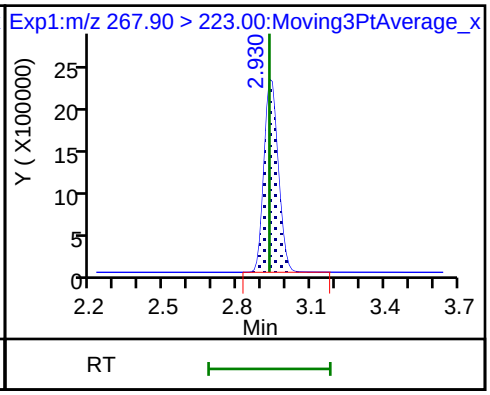
D 1 13C4 PFBA



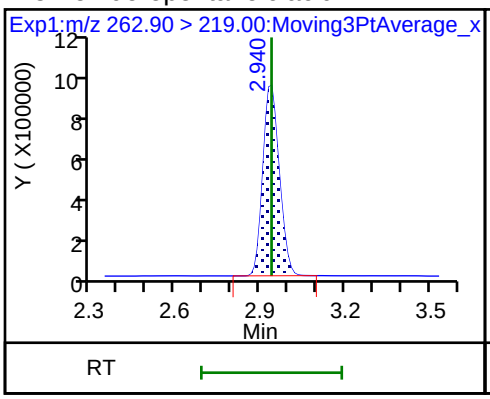
2 Perfluorobutanoic acid



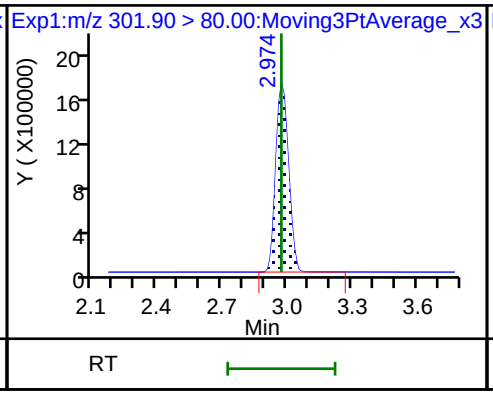
D 4 13C5 PFPeA



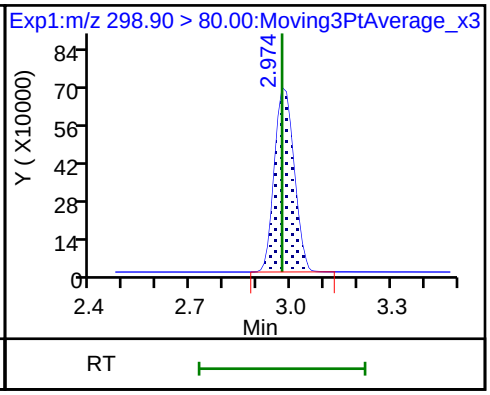
5 Perfluoropentanoic acid



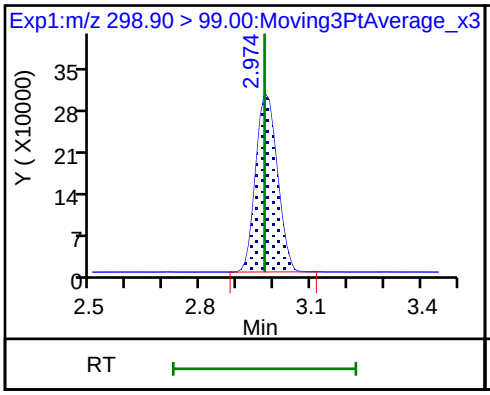
D 9 13C3 PFBS



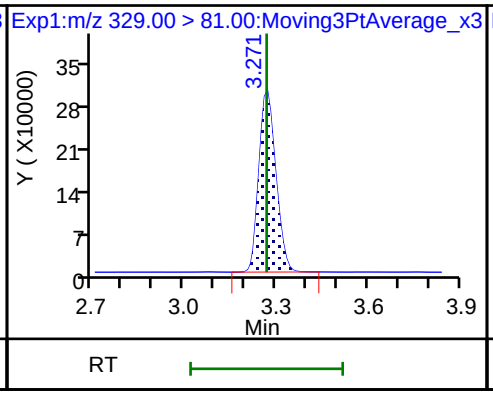
6 Perfluorobutanesulfonic acid



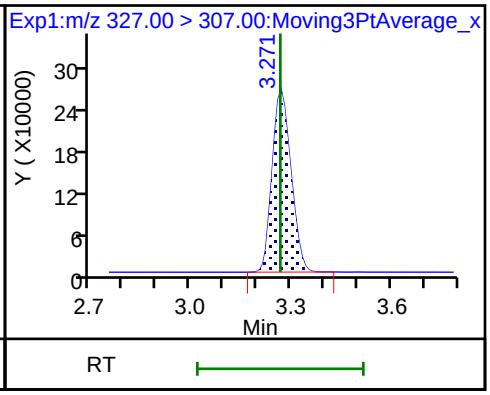
6 Perfluorobutanesulfonic acid



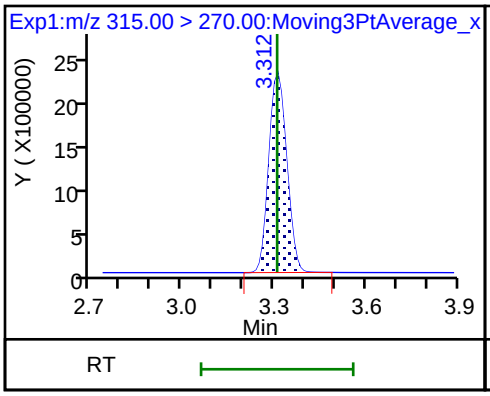
D 7 M2-4:2 FTS



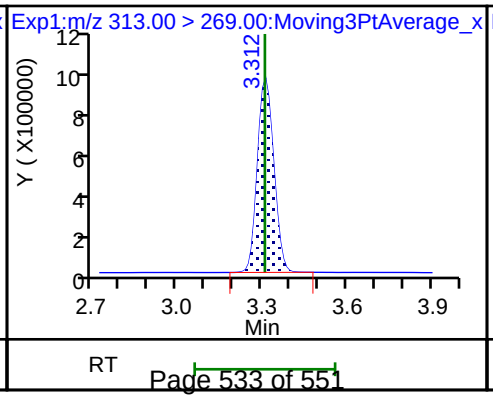
8 4:2 FTS



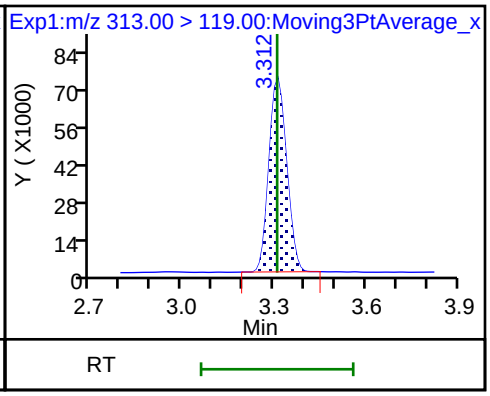
D 11 13C2 PFHxA



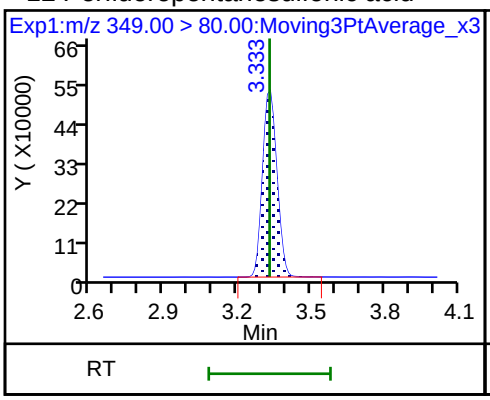
10 Perfluorohexanoic acid



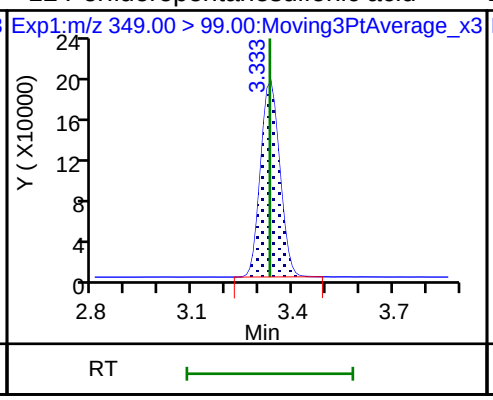
10 Perfluorohexanoic acid



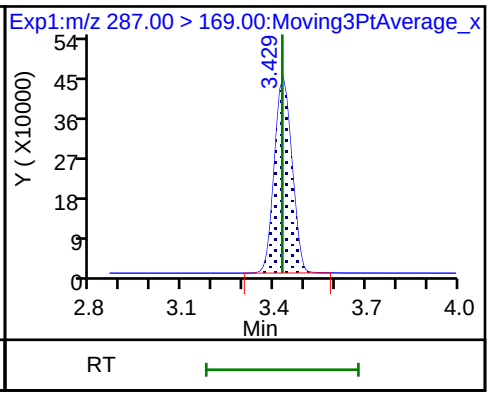
12 Perfluoropentanesulfonic acid



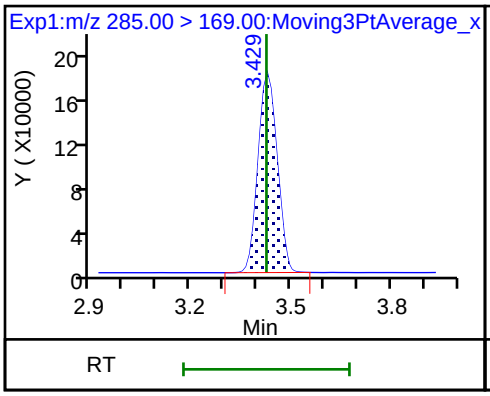
12 Perfluoropentanesulfonic acid



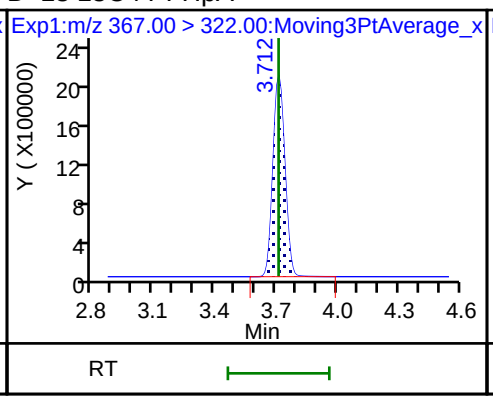
D 14 13C3 HFPO-DA



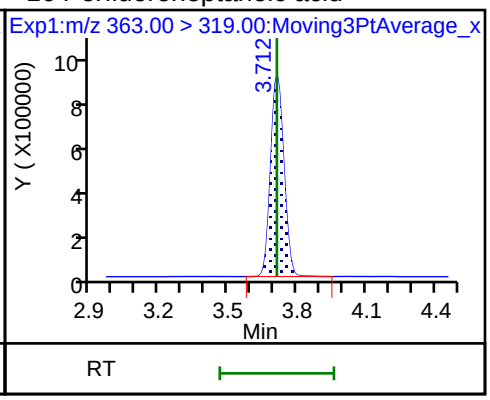
13 HPFO-DA



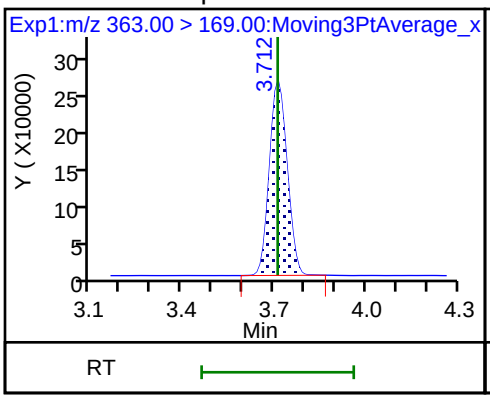
D 18 13C4 PFHpA



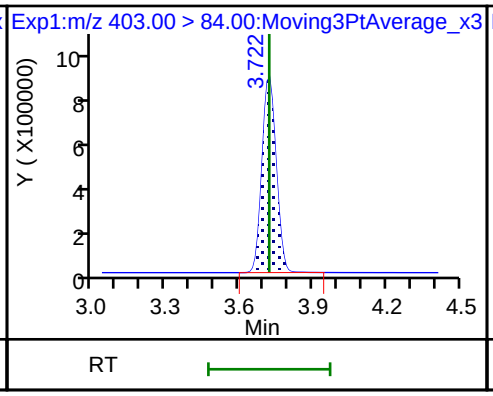
16 Perfluoroheptanoic acid



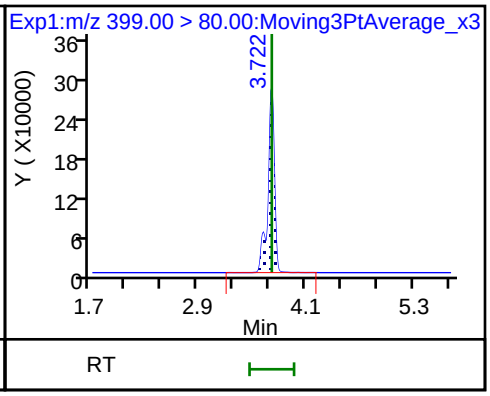
16 Perfluoroheptanoic acid



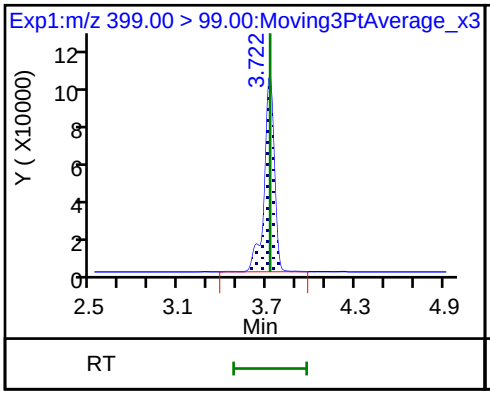
D 17 18O2 PFHxS



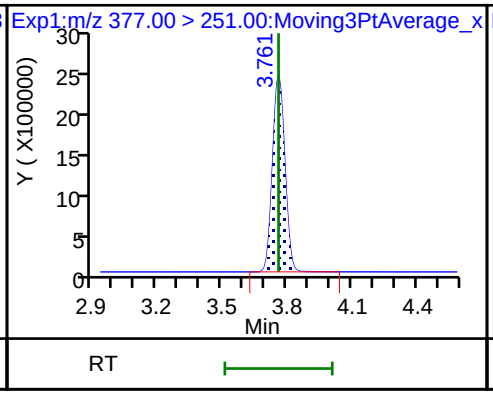
15 Perfluorohexanesulfonic acid



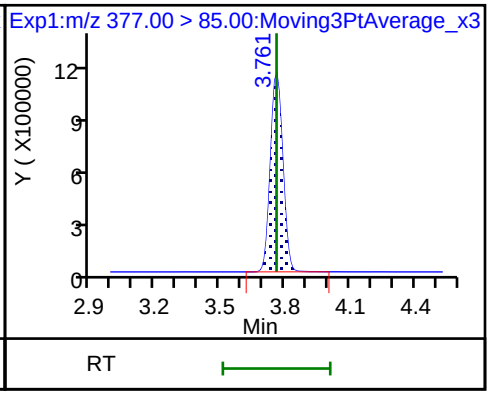
15 Perfluorohexanesulfonic acid



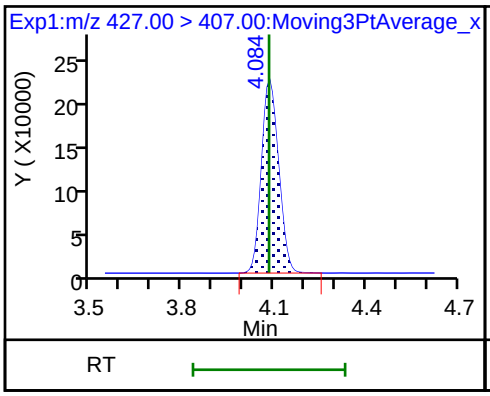
19 DONA



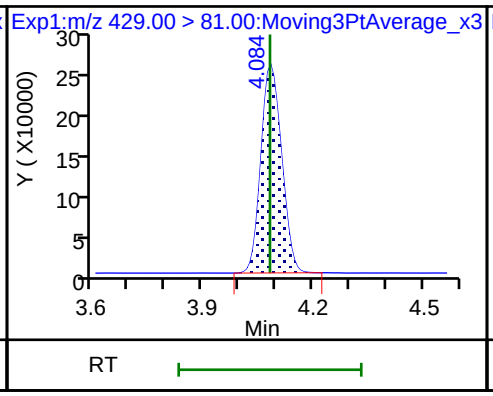
19 DONA



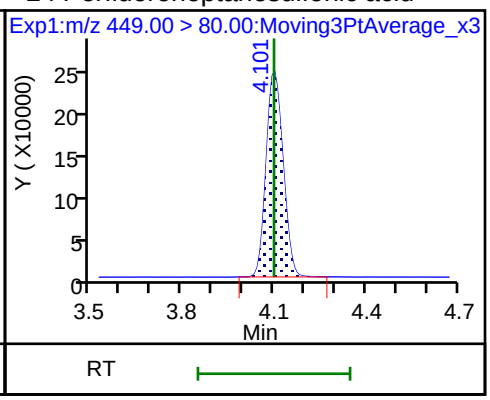
21 6:2 FTS



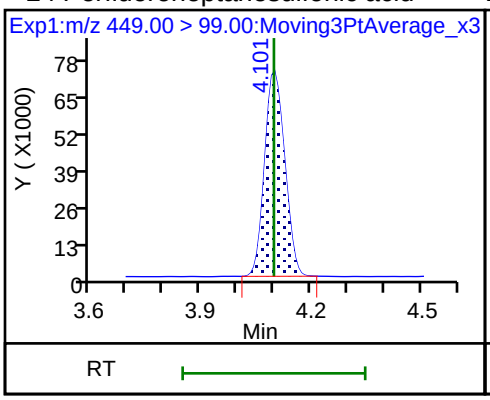
D 20 M2-6:2 FTS



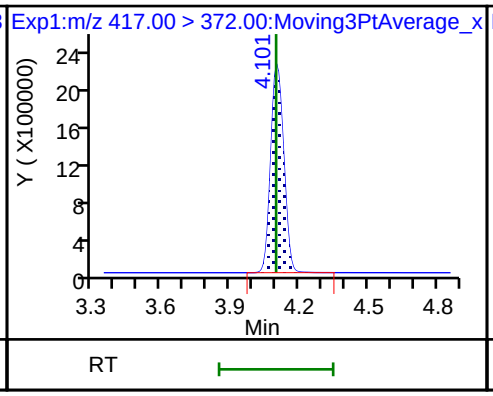
24 Perfluoroheptanesulfonic acid



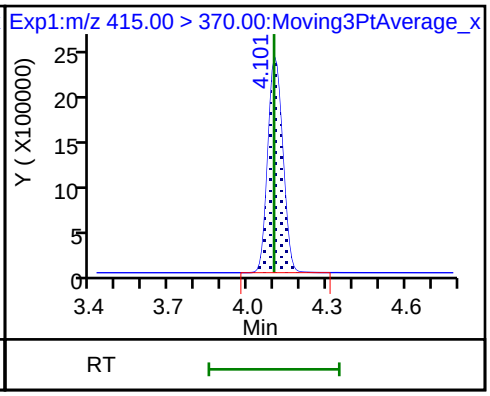
24 Perfluoroheptanesulfonic acid



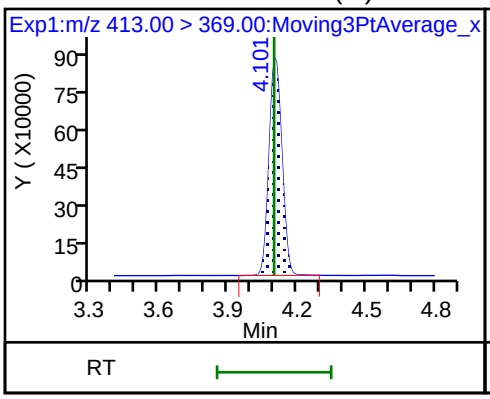
D 25 13C4 PFOA



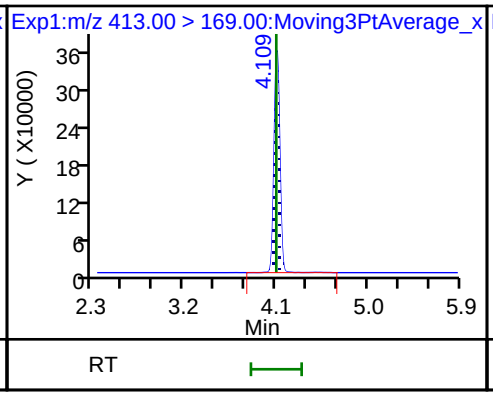
* 23 13C2 PFOA



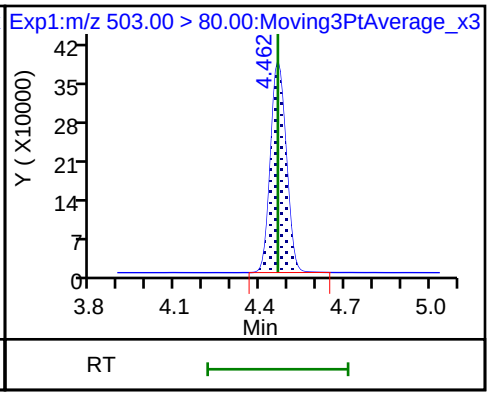
22 Perfluorooctanoic acid (M)



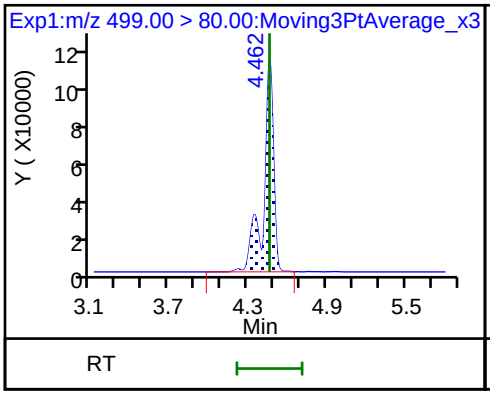
22 Perfluorooctanoic acid



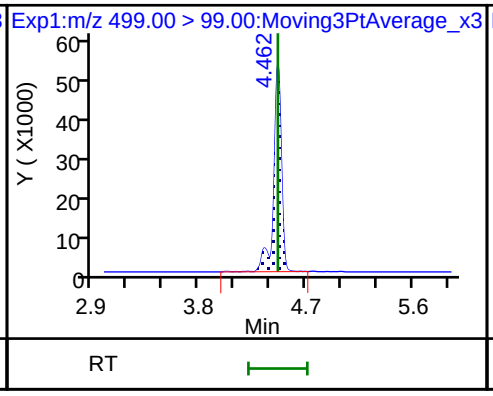
D 27 13C4 PFOS



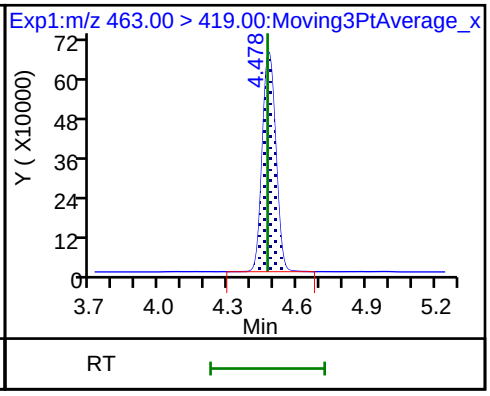
29 Perfluorooctanesulfonic acid



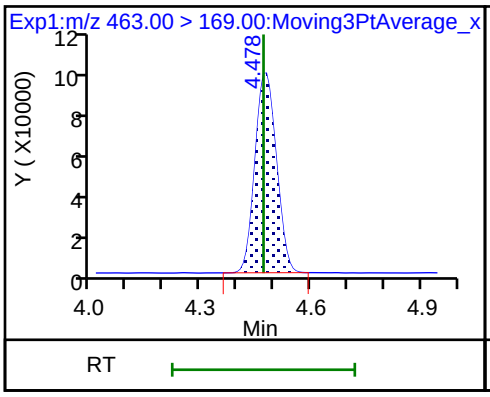
29 Perfluorooctanesulfonic acid



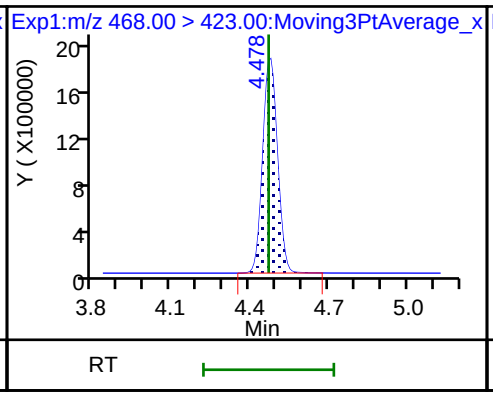
31 Perfluorononanoic acid



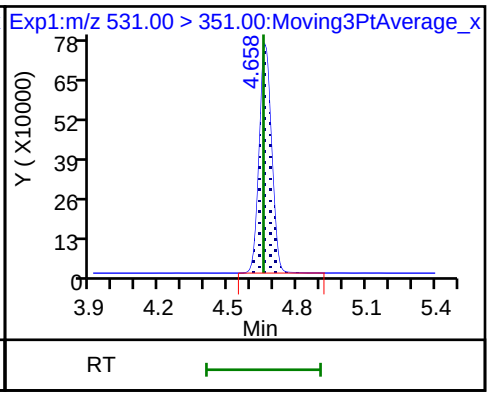
31 Perfluorononanoic acid



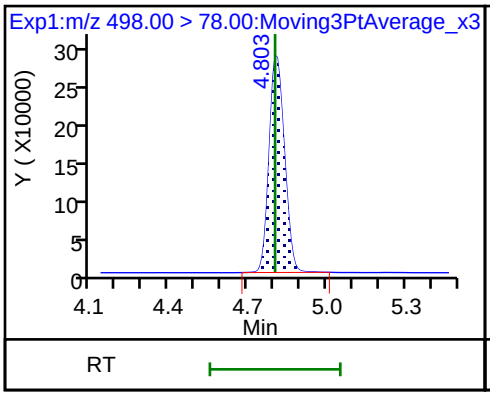
D 30 13C5 PFNA



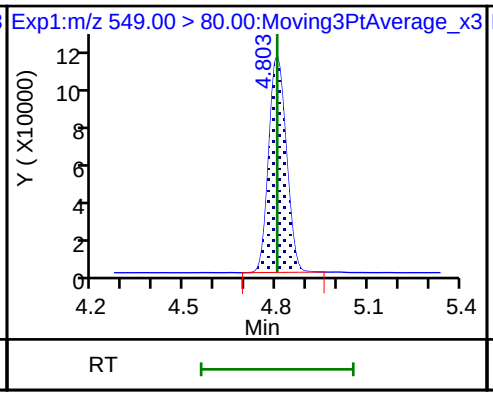
32 9ClFOS



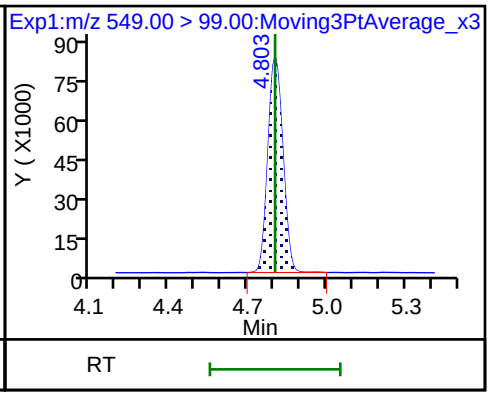
34 Perfluorooctanesulfonamide



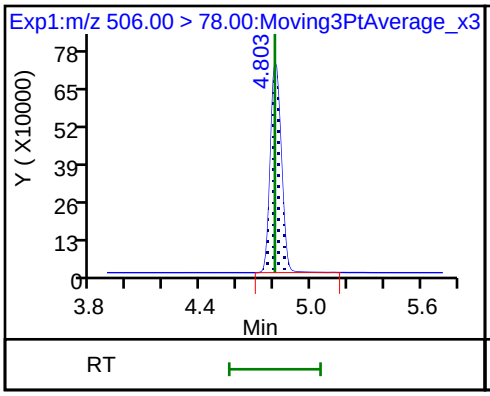
35 Perfluorononanesulfonic acid



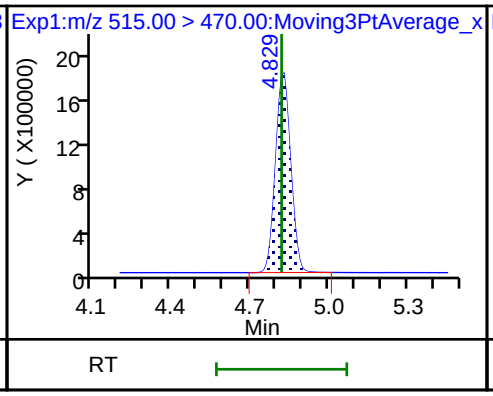
35 Perfluorononanesulfonic acid



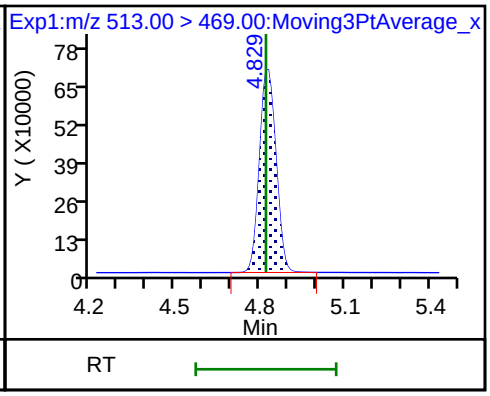
D 33 13C8 FOSA



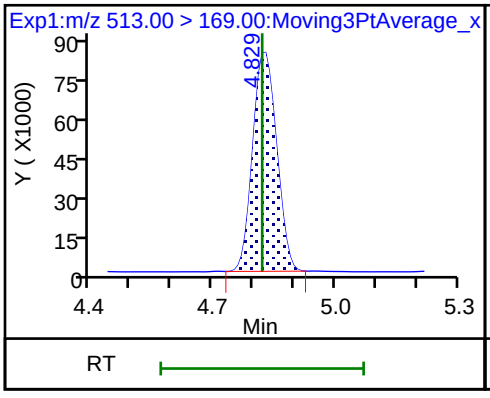
D 39 13C2 PFDA



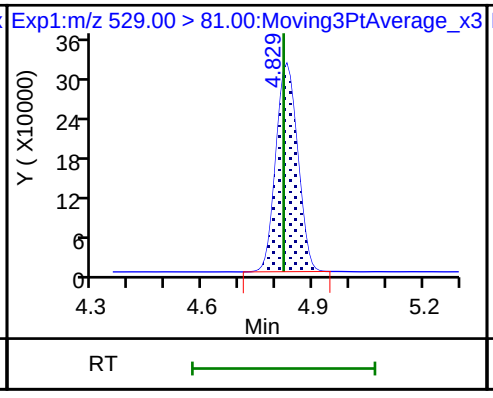
37 Perfluorodecanoic acid



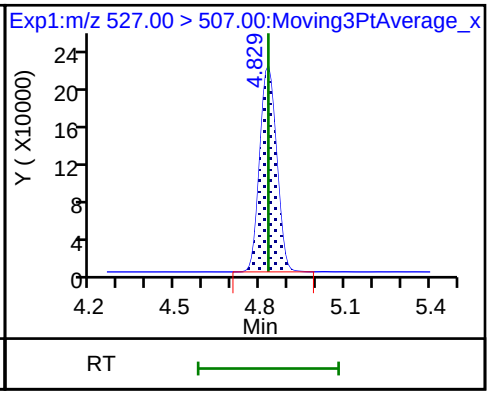
37 Perfluorodecanoic acid



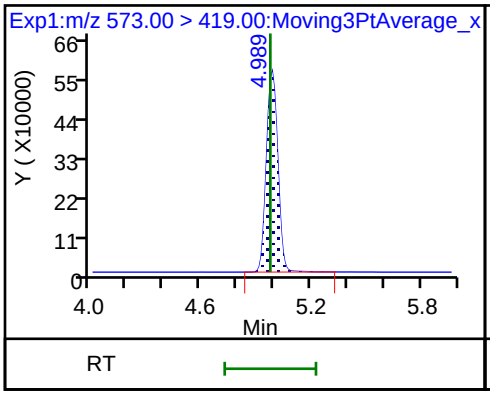
D 38 M2-8:2 FTS



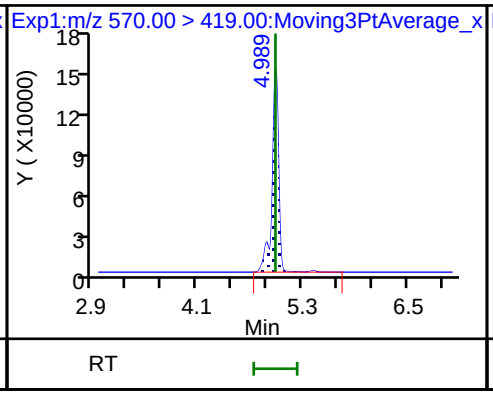
36 8:2 FTS



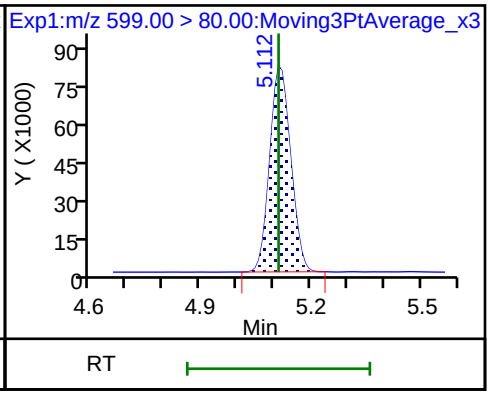
D 40 d3-NMeFOSAA



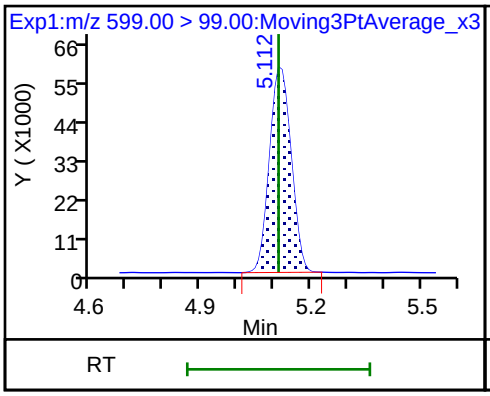
41 NMeFOSAA



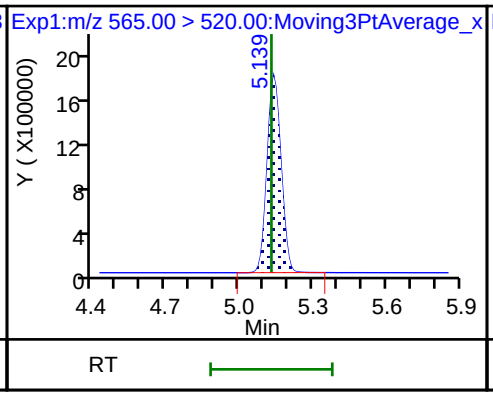
42 Perfluorodecanesulfonic acid



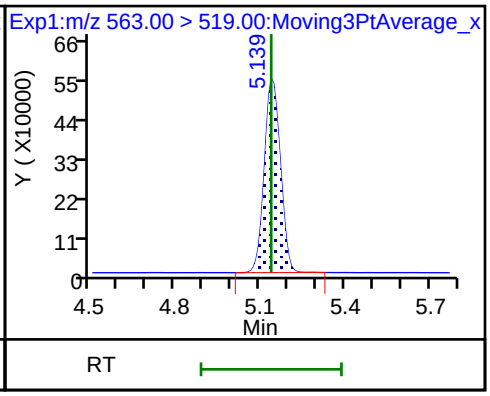
42 Perfluorodecanesulfonic acid



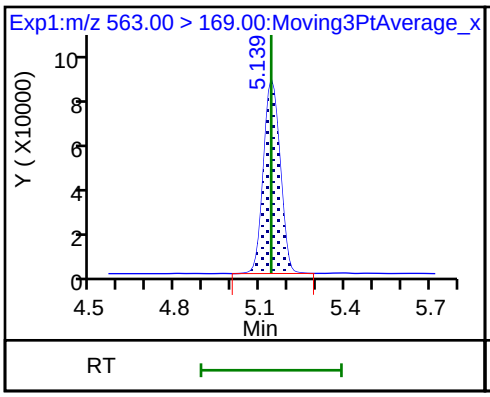
D 43 13C2 PFUnA



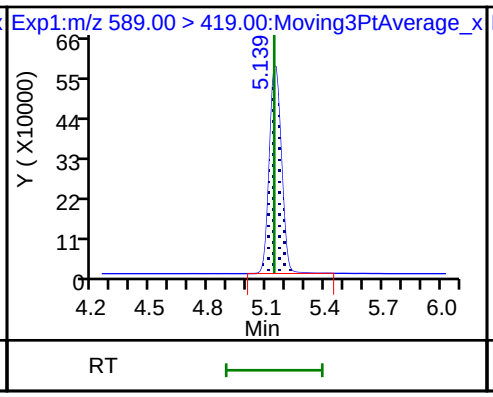
45 Perfluoroundecanoic acid



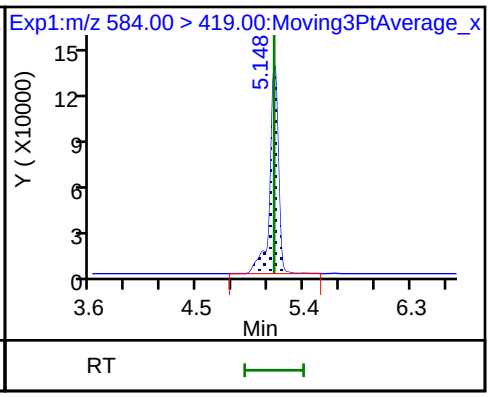
45 Perfluoroundecanoic acid



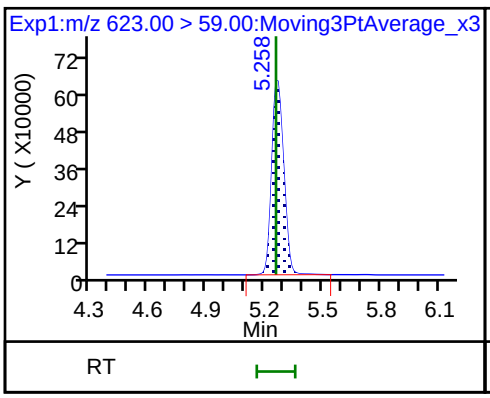
D 44 d5-NEtFOSAA



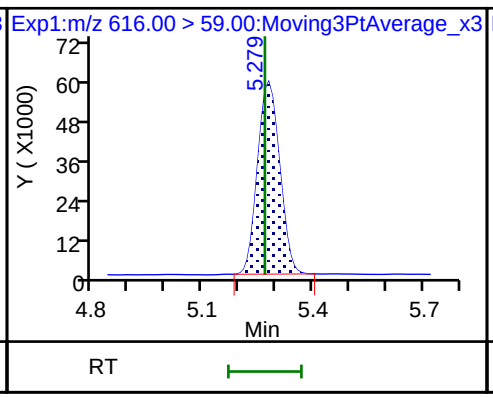
46 NEtFOSA



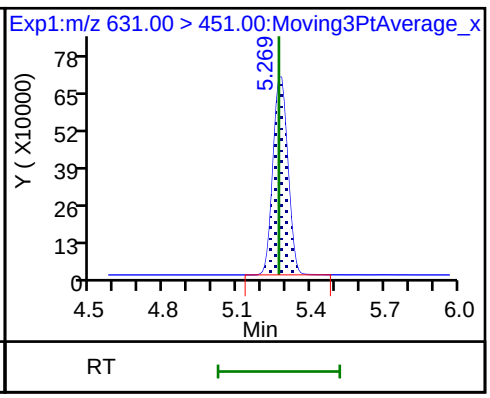
D 47 d7-N-MeFOSE-M



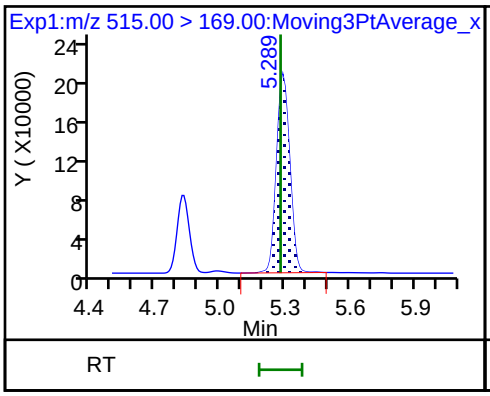
48 N-MeFOSE-M



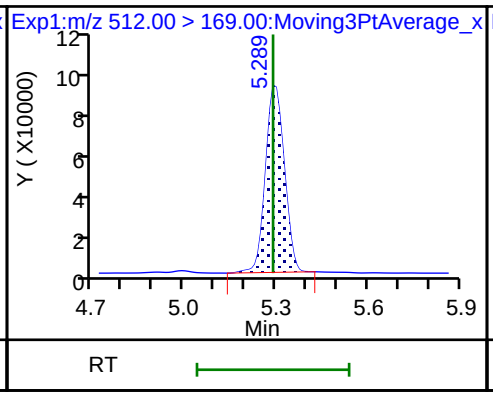
51 11ClFOS



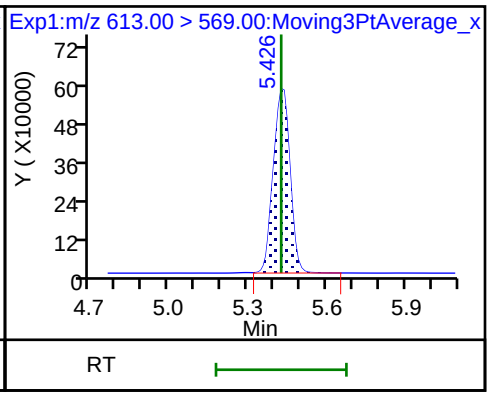
D 49 d-N-MeFOSA-M



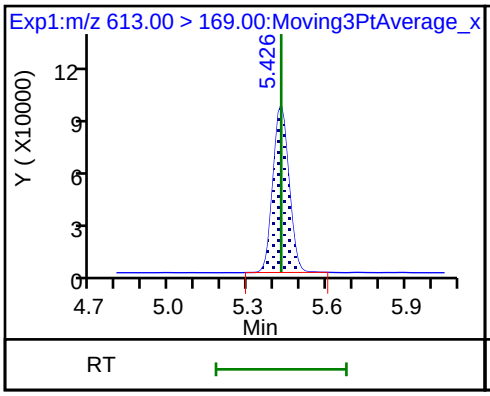
50 NMeFOSA



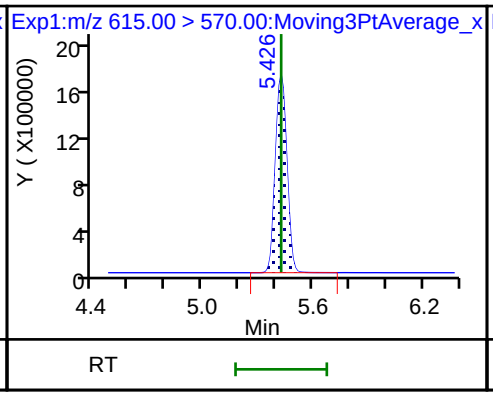
57 Perfluorododecanoic acid



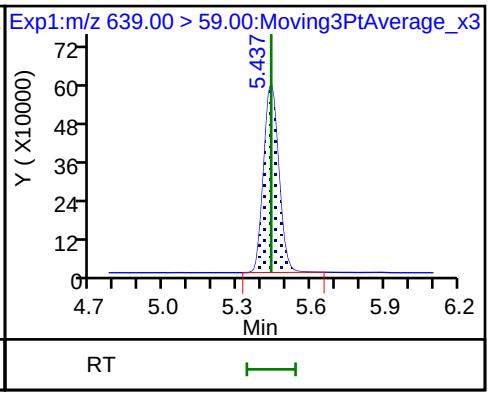
57 Perfluorododecanoic acid



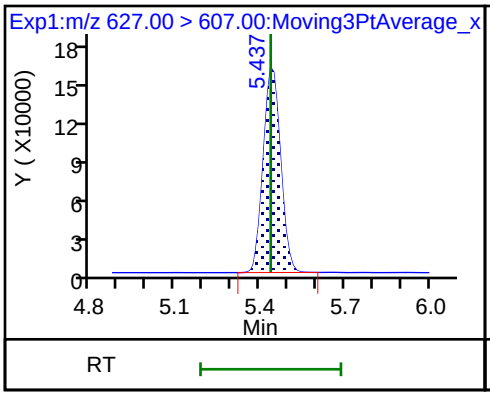
D 56 13C2 PFDoA



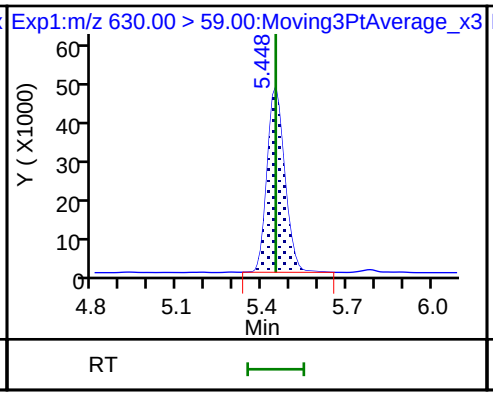
D 52 d9-N-EtFOSE-M



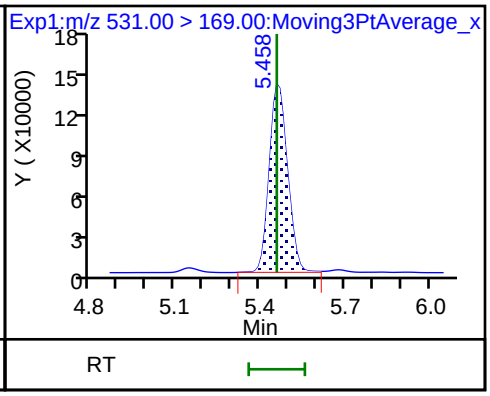
58 10:2 FTS



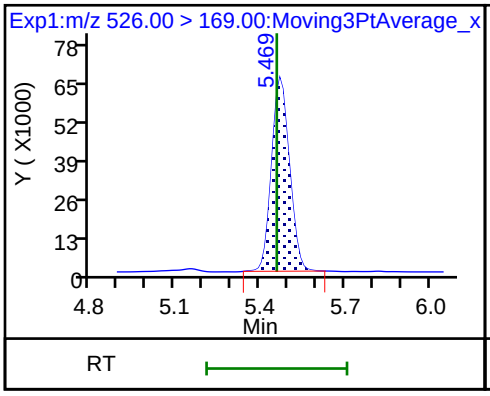
53 N-EtFOSE-M



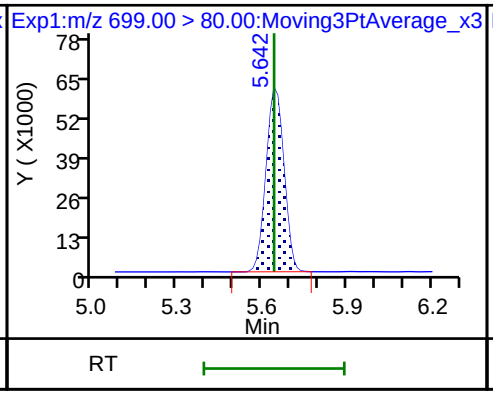
D 54 d-N-EtFOSA-M



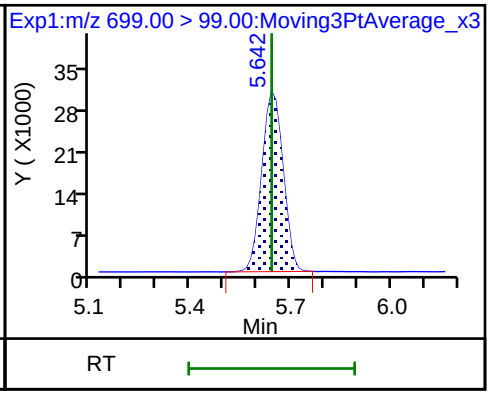
55 N-EtFOSA-M



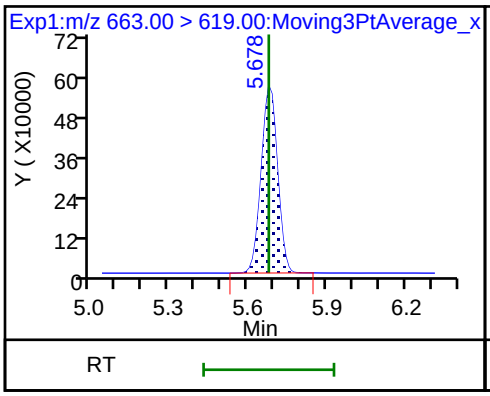
59 PFDoS



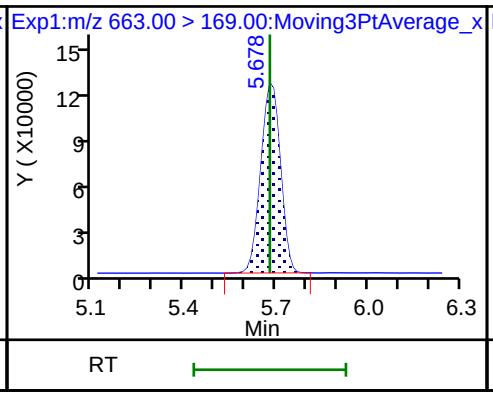
59 PFDoS



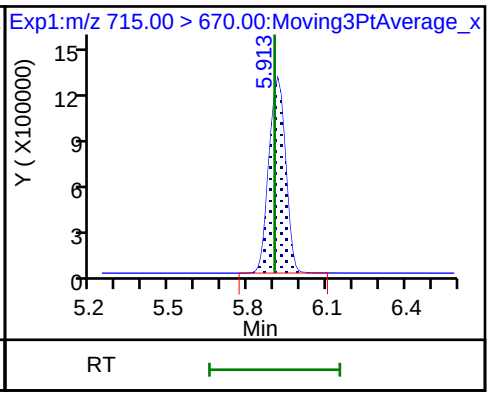
60 Perfluorotridecanoic acid



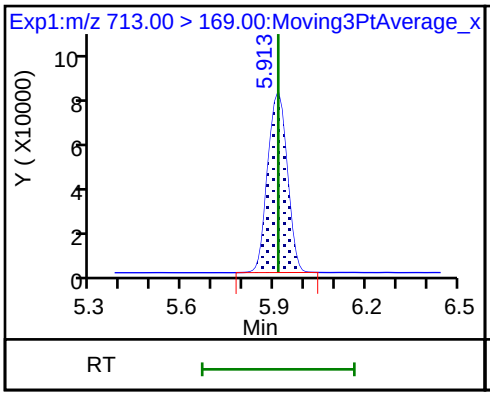
60 Perfluorotridecanoic acid



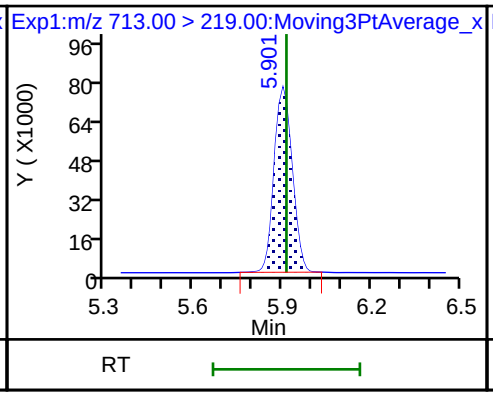
D 61 13C2 PFTeDA



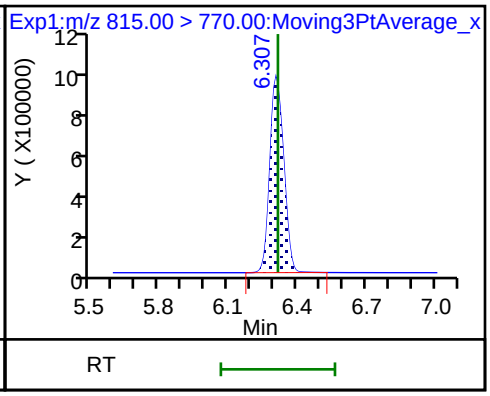
62 Perfluorotetradecanoic acid



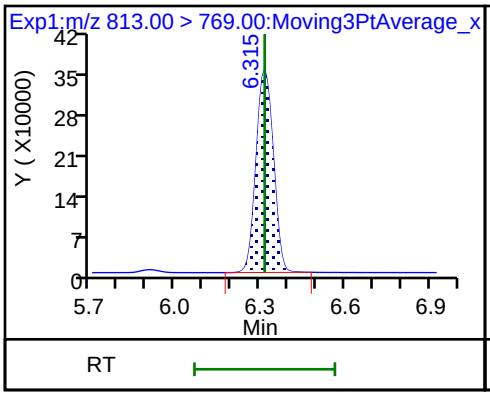
62 Perfluorotetradecanoic acid



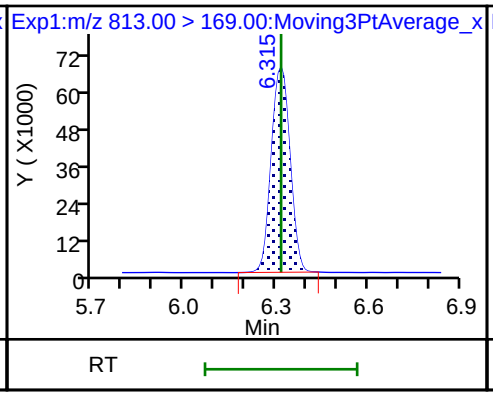
D 64 13C2 PFHxDA



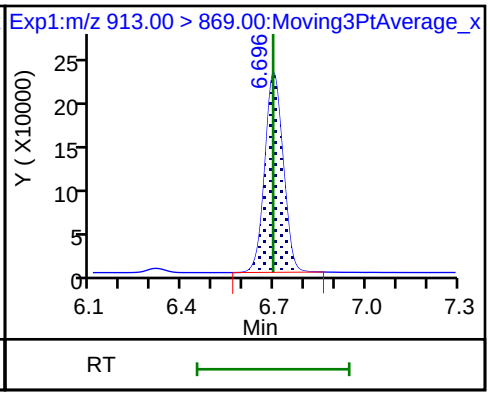
63 Perfluorohexadecanoic acid



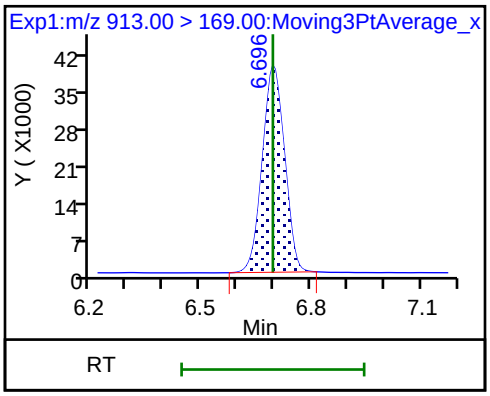
63 Perfluorohexadecanoic acid



65 Perfluorooctadecanoic acid



65 Perfluorooctadecanoic acid



Manual Integration/User Assign Peak Report

Eurofins TestAmerica, Sacramento

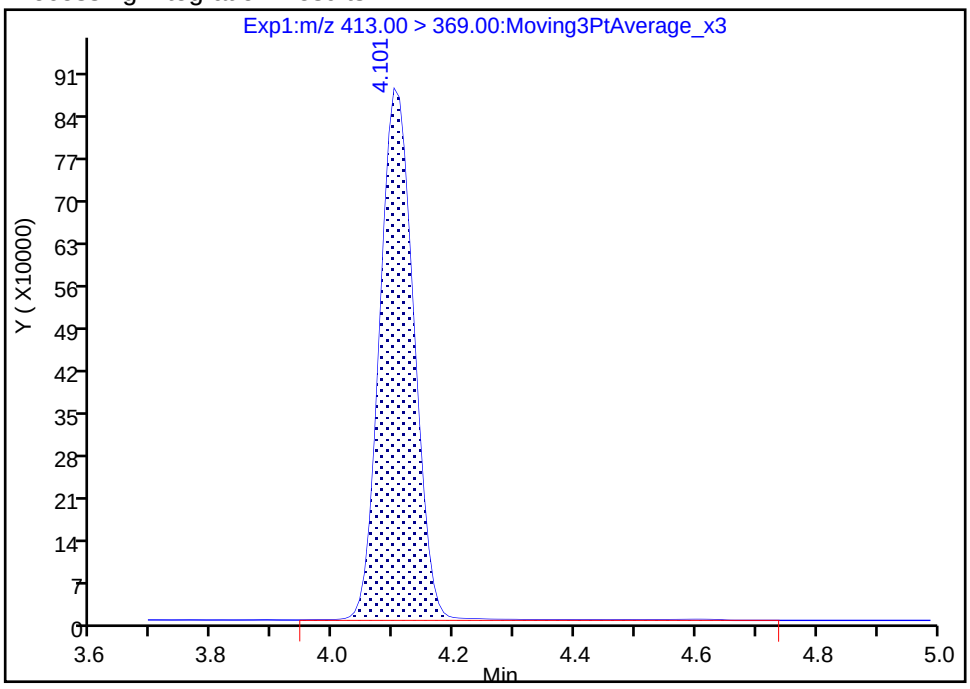
Data File:	\\chromfs\Sacramento\ChromData\A18\20200604-96973.b\2020.06.04_A18_PFC_A_009.d				
Injection Date:	04-Jun-2020 10:07:26	Instrument ID:	A18		
Lims ID:	LCSD 320-383169/3-A				
Client ID:					
Operator ID:	TAISACA18-PC\A-18	ALS Bottle#:	3	Worklist Smp#:	7
Injection Vol:	20.0 ul	Dil. Factor:	1.0000		
Method:	PFAS_A18V2	Limit Group:	LC PFC ICAL		
Column:	Gemini C18 3um 3mm x 50 mm (3.00mm)	Detector	EXP1		

22 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

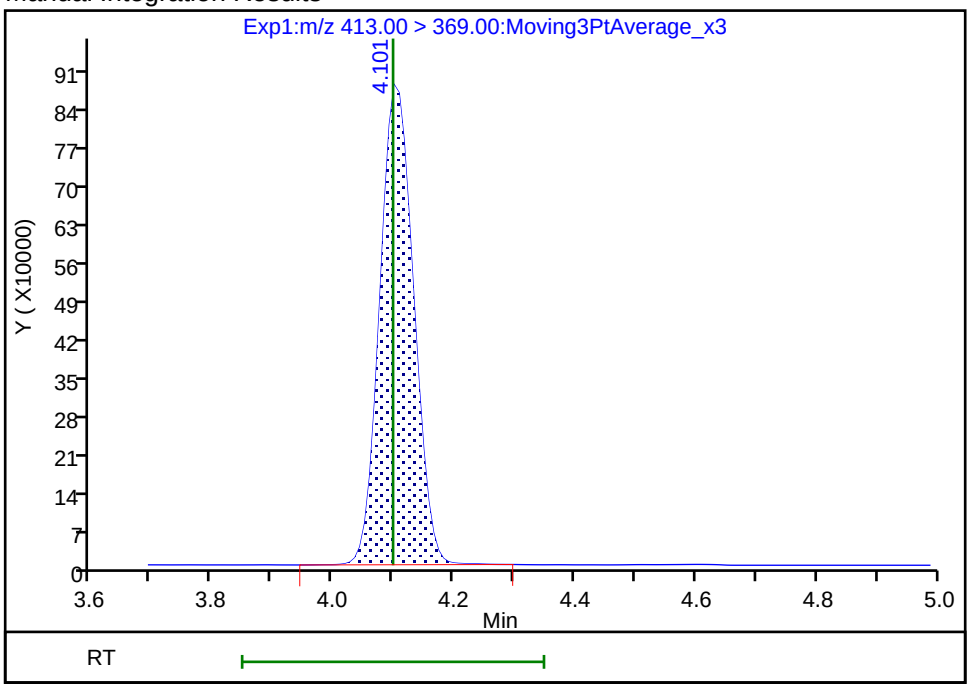
Processing Integration Results

RT: 4.10
Area: 3442007
Amount: 0.982613
Amount Units: ng/ml



Manual Integration Results

RT: 4.10
Area: 3400742
Amount: 0.970833
Amount Units: ng/ml



Reviewer: nadonp, 05-Jun-2020 08:18:12

Audit Action: Manually Integrated Audit Reason: Baseline

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Instrument ID: A15 Start Date: 06/04/2020 11:56

Analysis Batch Number: 383313 End Date: 06/04/2020 13:18

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-383313/2		06/04/2020 11:56	1	2020.06.04_A15_PFC_ICAL_A_004.d	Gemini C18 3x50 3(mm)
IC 320-383313/3		06/04/2020 12:06	1	2020.06.04_A15_PFC_ICAL_A_005.d	Gemini C18 3x50 3(mm)
IC 320-383313/4		06/04/2020 12:15	1	2020.06.04_A15_PFC_ICAL_A_006.d	Gemini C18 3x50 3(mm)
IC 320-383313/5 ICIS		06/04/2020 12:24	1	2020.06.04_A15_PFC_ICAL_A_007.d	Gemini C18 3x50 3(mm)
IC 320-383313/6		06/04/2020 12:33	1	2020.06.04_A15_PFC_ICAL_A_008.d	Gemini C18 3x50 3(mm)
IC 320-383313/7		06/04/2020 12:42	1	2020.06.04_A15_PFC_ICAL_A_009.d	Gemini C18 3x50 3(mm)
IC 320-383313/8		06/04/2020 12:51	1	2020.06.04_A15_PFC_ICAL_A_010.d	Gemini C18 3x50 3(mm)
ICB 320-383313/9		06/04/2020 13:00	1	2020.06.04_A15_PFC_ICAL_A_011.d	Gemini C18 3x50 3(mm)
ICV 320-383313/10		06/04/2020 13:09	1	2020.06.04_A15_PFC_ICAL_A_012.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 13:18	1		Gemini C18 3x50 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Instrument ID: A15 Start Date: 06/05/2020 14:10

Analysis Batch Number: 383943 End Date: 06/05/2020 17:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-383943/1		06/05/2020 14:10	1	2020.06.05_A15_PFC_A_004.d	Gemini C18 3x50 3(mm)
CCVL 320-383943/2		06/05/2020 14:19	1	2020.06.05_A15_PFC_A_005.d	Gemini C18 3x50 3(mm)
CCV 320-383943/3 CCVIS		06/05/2020 14:28	1	2020.06.05_A15_PFC_A_006.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 14:37	100		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 14:46	50		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 14:55	50		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 15:05	50		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 15:14	10		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 15:23	10		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 15:32	10		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 15:41	5		Gemini C18 3x50 3(mm)
320-61340-1 DL		06/05/2020 15:50	5	2020.06.05_A15_PFC_A_015.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 15:59	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 16:08	1		Gemini C18 3x50 3(mm)
CCV 320-383943/15		06/05/2020 16:17	1	2020.06.05_A15_PFC_A_018.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 16:27	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 16:36	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 16:45	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/05/2020 16:54	1		Gemini C18 3x50 3(mm)
CCV 320-383943/20		06/05/2020 17:03	1		Gemini C18 3x50 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Instrument ID: A18 Start Date: 06/03/2020 20:49

Analysis Batch Number: 383200 End Date: 06/03/2020 22:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-383200/2		06/03/2020 20:49	1	2020.06.03_A18_PFC_ICAL_0008.d	Gemini C18 3x50 3(mm)
IC 320-383200/3		06/03/2020 20:58	1	2020.06.03_A18_PFC_ICAL_0009.d	Gemini C18 3x50 3(mm)
IC 320-383200/4		06/03/2020 21:07	1	2020.06.03_A18_PFC_ICAL_0010.d	Gemini C18 3x50 3(mm)
IC 320-383200/5 ICIS		06/03/2020 21:16	1	2020.06.03_A18_PFC_ICAL_0011.d	Gemini C18 3x50 3(mm)
IC 320-383200/6		06/03/2020 21:25	1	2020.06.03_A18_PFC_ICAL_0012.d	Gemini C18 3x50 3(mm)
IC 320-383200/7		06/03/2020 21:34	1	2020.06.03_A18_PFC_ICAL_0013.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/03/2020 21:43	1		Gemini C18 3x50 3(mm)
IC 320-383200/9		06/03/2020 21:52	1	2020.06.03_A18_PFC_ICAL_0015.d	Gemini C18 3x50 3(mm)
ICB 320-383200/10		06/03/2020 22:01	1	2020.06.03_A18_PFC_ICAL_0016.d	Gemini C18 3x50 3(mm)
ICV 320-383200/11		06/03/2020 22:10	1	2020.06.03_A18_PFC_ICAL_0017.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/03/2020 22:20	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/03/2020 22:29	1		Gemini C18 3x50 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Instrument ID: A18 Start Date: 06/04/2020 09:20

Analysis Batch Number: 383436 End Date: 06/04/2020 10:53

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 320-383436/2		06/04/2020 09:20	1	2020.06.04_A18_PFC A 004.d	Gemini C18 3x50 3(mm)
CCVL 320-383436/3		06/04/2020 09:29	1	2020.06.04_A18_PFC A 005.d	Gemini C18 3x50 3(mm)
CCV 320-383436/4 CCVIS		06/04/2020 09:38	1	2020.06.04_A18_PFC A 006.d	Gemini C18 3x50 3(mm)
MB 320-383169/1-A		06/04/2020 09:48	1	2020.06.04_A18_PFC A 007.d	Gemini C18 3x50 3(mm)
LCS 320-383169/2-A		06/04/2020 09:58	1	2020.06.04_A18_PFC A 008.d	Gemini C18 3x50 3(mm)
LCSD 320-383169/3-A		06/04/2020 10:07	1	2020.06.04_A18_PFC A 009.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 10:16	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 10:25	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 10:34	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 10:43	1		Gemini C18 3x50 3(mm)
CCV 320-383436/12		06/04/2020 10:53	1	2020.06.04_A18_PFC AA 031.d	Gemini C18 3x50 3(mm)

537 (modified)

LCMS ANALYSIS RUN LOG

Lab Name: Eurofins TestAmerica, Sacramento Job No.: 320-61340-1

SDG No.: 70132489

Instrument ID: A18 Start Date: 06/04/2020 11:49

Analysis Batch Number: 383454 End Date: 06/04/2020 13:29

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-383454/1		06/04/2020 11:49	1	2020.06.04_A18_PFC AA 037.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 11:58	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 12:07	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 12:16	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 12:25	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 12:34	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 12:43	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 12:52	1		Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 13:02	1		Gemini C18 3x50 3(mm)
320-61340-1		06/04/2020 13:11	1	2020.06.04_A18_PFC AA 024.d	Gemini C18 3x50 3(mm)
ZZZZZ		06/04/2020 13:20	1		Gemini C18 3x50 3(mm)
CCV 320-383454/12		06/04/2020 13:29	1	2020.06.04_A18_PFC AA 026.d	Gemini C18 3x50 3(mm)

537 (modified)

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-61340-1

SDG No.: 70132489

Batch Number: 383169 Batch Start Date: 06/03/20 18:28 Batch Analyst: Pham, Vince

Batch Method: 3535 Batch End Date: 06/04/20 01:41

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFC_IDA 00134	LCPFC-IS 00383
MB 320-383169/1		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
LCS 320-383169/2		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
LCSD 320-383169/3		3535, 537 (modified)				250 mL	10.00 mL	500 uL	500 uL
320-61340-A-1	CELL 7 PLCRS	3535, 537 (modified)	T	308.74 g	27.85 g	280.9 mL	10.00 mL	500 uL	500 uL

Lab Sample ID	Client Sample ID	Method Chain	Basis	LCPFCSP 00300					
MB 320-383169/1		3535, 537 (modified)							
LCS 320-383169/2		3535, 537 (modified)		500 uL					
LCSD 320-383169/3		3535, 537 (modified)		500 uL					
320-61340-A-1	CELL 7 PLCRS	3535, 537 (modified)	T						

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

LCMS BATCH WORKSHEET

Lab Name: Eurofins TestAmerica, Sacramen Job No.: 320-61340-1

SDG No.: 70132489

Batch Number: 383169 Batch Start Date: 06/03/20 18:28 Batch Analyst: Pham, Vince

Batch Method: 3535 Batch End Date: 06/04/20 01:41

Batch Notes	
Balance ID	QA-081
Batch Comment	Client and sample IDs match - VP. 06/03/20. Centrifuge tube lot # 11120107.
First End time	06/04/2020 01:41
H2O ID	06/03/20
Hexane ID	2017508
Manifold ID	BO, MN
Methanol ID	2017500
Sodium Hydroxide ID	2015373
Pipette/Syringe/Dispenser ID	j38939i
Analyst ID - Reagent Drop	VP
Analyst ID - IS Reagent Drop	VP
Analyst ID - IS Reagent Drop Witness	JCN
Solvent Lot #	2012305
Solvent Name	0.3% NH4OH/MeOH
SPE Cartridge Lot ID	004338233A
SPE Cartridge Type	Oasis 6cc/500mg WAX
First Start time	06/03/2020 18:55

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.

eurofins | Environment Testing TestAmerica

Sacramento
Dilution Report Form
Method 537-Mod

This form must be used when making dilutions. It must be attached to the original bench sheet.

The following is a flow chart for making dilutions based on an original extract with a 10 mL final volume. All dilutions (unless labeled as serial dilutions) are based on removing an aliquot from the original extract, which has already been spiked with IDA solution.

Dilutions up to 20x are made in a 300 uL injection vial. Dilutions larger than 20x are made in a 1.5 mL injection vial.

All volumes are in uL

Dilution Required	Amount of 80:20 MeOH/Water (ICB for QSM 5.1)	Amount of Sample
2X	150	150
5X	240	60
10X	270	30
20X	285	15
50X	1470	30
100X	1485	15

Job Number	Sample ID	Dilution Made	Reagent (Solvent) ID*	Pipette/ Syringe ID	Analyst	Date
320-61341	2	5x	LC 80:20 000860	1461626/3528821	JS	6/5/20
↓	2	50x	↓	↓	↓	↓
	3	50x				
↓	3	100x				
320-61344	2	50x				
320-61352	4	10x				
↓	5	10x				
↓	7	10x				
320-61346	1	5x	↓	↓	↓	↓

*Log solvents into TALS, use TALS Reagent ID here; if adding IS, also input TALS Reagent ID for IS.

JS 6/5/20

Shipping and Receiving Documents

Chain of Custody

PASI New York Laboratory

Pace Analytical® www.pacelabs.com

Workorder: 70132489 **Workorder Name:** CELL 7 LEACHATE EXPANDED 5/28 **Results Requested By:** 6/11/2020

Report / Invoice To

Jennifer Aracri
Pace Analytical Melville
575 Broad Hollow Road
Melville, NY 11747
Phone (631)694-3040
Email: jennifer.aracri@pacelabs.com

Subcontract To

TA Eurofins-Sacramento
880 Riverside Pkwy
West Sacramento, CA 95605

P.O. 70132489JSA

State of Sample Origin: NY

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: Unpreserved						Requested Analysis: PFAS by 537	LAB USE ONLY
1	CELL 7 PLCRS	5/28/2020 12:10	70132489001	Water							X	
2												
3												
4												
5												

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	6/1/20 18:00	[signature] eta Sac	06/02/20 925
2				
3				

Comments

Need a Category B Package and EQUIS EDDs

Cooler Temperature on Receipt 2.8 °C 2.4°C | Custody Seal Y or N | Received on Ice Y or N | Samples Intact Y or N

320-61340 Chain of Custody

Login Sample Receipt Checklist

Client: Pace Analytical Services, LLC

Job Number: 320-61340-1
SDG Number: 70132489

Login Number: 61340
List Number: 1
Creator: Guzman, Juan

List Source: Eurofins TestAmerica, Sacramento

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